

ECONOMIC AND SOCIAL COMMISSION FOR ASIA AND THE PACIFIC

15-119

COUNTRY MONOGRAPH SERIES No. 4
POPULATION OF SRI LANKA



UNITED NATIONS

THE ESCAP ASIAN POPULATION STUDIES SERIES, AND RELATED PUBLICATIONS

A. Asian Population Studies Series*

- No.1** *Administrative Aspects of Family Planning Programmes – Report of a Working Group* (E/CN.11/742; United Nations publication, Sales No. 66. II. F.10): 1966
- No.2** *Family Planning, Internal Migration and Urbanization in ECAFE Countries – A Bibliography of Available Materials* (E/CN.11/807; United Nations publication, Sales No. E.68.II.F.13): 1968
- No.3** *Communications in Family Planning – Report of a Working Group* (E/CN.11/830; United Nations publication, Sales No. E.68.II.F.17): 1968
- No.4** *Assessment of Acceptance and Effectiveness of Family Planning Methods – Report of an Expert Group* (E/CN.11/882; United Nations publication, Sales No. E.69.II.F.15): 1969
- No.5** *Evaluation of Family Planning Programmes – Report of a Regional Seminar* (E/CN.11/936; United Nations publication, Sales No.E.70.II.F.20): 1970
- No.6** *Fertility Studies in the ECAFE Region—A Bibliography of Books, Papers, and Reference Materials* (E/CN.11/992; United Nations publication, Sales No. E.72.II.F.3): 1971
- No.7** *Interrelation between Population and Manpower Problems – Report and Selected Papers of a Regional Seminar* (E/CN.11/1015): 1972
- No.8** *Research, Teaching and Training in Demography—A Directory of Institutions in the ECAFE Region* (E/CN.11/1007): 1972
 Supplement No.1 (E/CN.11/1007/Add.1): 1974
 Supplement No.2 (E/CN.11/1007/Add.2): 1974
 Supplement No.3 (E/CN.11/1007/Add.3): 1976
- No.9** *Report of the Working Group on Training of Personnel in Family Planning Programmes* (POP/TPFP/1; mimeographed): 1972
- No.10** *Report and Selected Papers of the Regional Seminar on Ecological Implications of Rural and Urban Population Growth* (E/CN.11/1043): 1973
- No.11** *Population Aspects of Social Development – Report of a Regional Seminar and Selected Papers* (E/CN.11/1049): 1972
- No.12** *Socio-economic Returns of Family Planning Programmes – Report of an Expert Group Meeting* (E/CN.11/1070): 1973
- No.13** *The Role of Voluntary Organizations in National Family Planning Programmes – Report of an Expert Group Meeting* (E/CN.11/1087): 1973
- No.14** *Comparative Study of Mortality Trends in ECAFE Countries* (E/CN.11/1108): 1973
- No.15** *A Comparative Study of Family Planning Service Statistics Systems in the ESCAP Region* (E/CN.11/1198): 1975
- No.16** *Husband-Wife Communication and the Practice of Family Planning* (E/CN.11/1212): 1975
- No.17** *Population Periodicals – A Directory of Serial Population Publications in the ESCAP Region* (E/CN.11/1176): 1974
- No.18** *Some Techniques for Measuring the Impact of Contraception* (E/CN.11/1119): 1974
- No.19-A** *Asian Resources for a Population Library Information Network – Report of a Working Meeting* (E/CN.11/1114): 1974
- No.19-B** *Establishment of a Population Library and Documentation Centre Information Network among the Countries of the ECAFE Region – Report of a Task Force Meeting* (mimeographed): 1974
- No.20-A** *Report of the Workshop of ECAFE Population Correspondents from Indonesia* (mimeographed): 1974
- No.20-B** *Report of the Workshop of ECAFE Population Correspondents from Thailand* (mimeographed): 1974
- No.20-C** *Report of the Workshop of ECAFE Population Correspondents from the Republic of Korea* (mimeographed): 1974
- No.20-D** *Report of the Workshop of ESCAP Population Correspondents from Pakistan* (mimeographed): 1975
- No.21 *Comparative Study of Interrelationship between Levels of Literacy and Skill and Fertility Trends* (mimeographed)
- No.22** *Report of the Expert Group on Developing Indices for Measuring the Impact of Training on Job Performance of Field-workers in Family Planning Programmes* (IX.ISSN.0066-8451; mimeographed): 1973
- No.23** *Comparative Study of Population Growth and Agricultural Change* (E/CN.11/1224), 1975, in five volumes:

- A: The Inter-country Report
- B: Case Study of Japan
- C: Case Study of India
- D: Case Study of Sri Lanka
- E: A Survey of the Philippines and Thailand Data

* No charge, but priority given to Governments and institutions.

ESCAP was previously named the Economic Commission for Asia and the Far East (ECAFE); hence, those titles published before 1975 make reference to ECAFE.

** Available in microfiche form.

ESCAP COUNTRY MONOGRAPH SERIES
No. 4



POPULATION OF SRI LANKA

ECONOMIC AND SOCIAL COMMISSION
FOR ASIA AND THE PACIFIC
BANGKOK, THAILAND
1976



UNITED NATIONS

312.935493
E/CN

The designations employed and the presentation of the material in this publication do not imply the expression of any opinion whatsoever on the part of the Secretariat of the United Nations concerning the legal status of any country, territory, city or area, or of its authorities, or concerning the delimitation of its frontiers or boundaries.

ST/ESCAP/30

PREFACE

As part of the work programme of the Economic and Social Commission for Asia and the Pacific (ESCAP), the secretariat's Population Division has undertaken the preparation and publication of a series of country monographs on the population situation of each interested country in the region. Each monograph is being prepared in close co-operation with country experts and with the financial support of the United Nations Fund for Population Activities (UNFPA). The present monograph on Sri Lanka is the fourth in the series. The first on Hong Kong, the second on the Republic of Korea and the third on Thailand have been published. Work is in progress on similar studies for the Philippines, Japan, Nepal and India. Monographs on other countries will be prepared as the resources of the secretariat permit.

The purpose of the monographs is to provide the countries of the ESCAP region with an understanding of existing population problems as well as with a scientific basis for decision-making, policy formulation and determination of development goals and targets. In addition to the analysis of trends in fertility, mortality, migration and over-all population growth, the scope of the monograph includes an examination of the relationship of population growth and development factors, particularly education, health, housing, food and nutrition, manpower and employment. The need to consider population policies and programmes as an integral part of socio-economic development planning is amplified by this analysis.

The present monograph was prepared in close collaboration with the Ministry of Health; the Department of Census and Statistics, Ministry of Planning and Economic Affairs; the Ministry of Education and the University of Sri Lanka. The timely production and availability of the 1970 population census data greatly facilitated the preparation of this monograph. The country experts collaborating in this study were:

Hon. (Mrs.) Siva Obeyesekere M.P.	Minister of Health
Mr. L.N. Perera.	Director, Department of Census and Statistics
Dr. T. Jogaratnam	Professor of Agricultural Economics, University of Sri Lanka
Mr. E.L. Wijemanne	Deputy Director-General (Planning) Ministry of Education
Dr. H.A. Jesudason	Deputy Director (Public Health) Ministry of Health
Dr. (Mrs.) Beatrice V. de Mel	Nutritionist, Medical Research Institute, Ministry of Health
Mr. D.F.S. Fernando	Assistant Director, Department of Census and Statistics
Mr. T. Nadarajah	Assistant Director, Department of Census and Statistics
Mr. V.S. Ratnasingham	Statistician, Department of Census and Statistics
Mr. P. Wilson	Lecturer in Demography, University of Sri Lanka
Mr. D.C. Jayasuriya	State Counsel, Attorney-General's Department
Miss Shanthi Dissanayake	Attorney-at-Law

The assistance of these experts and the co-operation of the Government of Sri Lanka are gratefully acknowledged.

Those chapters not prepared by the secretariat of ESCAP present the views of the respective authors and not necessarily those of the secretariat.

CONTENTS

	Page
INTRODUCTION	1
- ESCAP Secretariat	
A. Location and area	1
B. Physical features	1
C. Climate and rainfall	1
D. Historical sketch	5
E. People	6
F. Administrative system	7
G. Mineral resources	8
H. Transport and communications	8
I. The economy	9
I. SIZE AND GROWTH OF TOTAL POPULATION	12
- ESCAP Secretariat	
A. Population size	12
B. Population growth	17
II. GEOGRAPHICAL DISTRIBUTION AND GROWTH OF POPULATION	29
-ESCAP Secretariat	
A. Distribution by administrative divisions	29
B. Growth by administrative divisions	32
C. Rural — urban distribution	37
D. Distribution by climatic zones	40
E. Population density	40
III. INTERNAL MIGRATION	45
- V.S. Ratnasingham and P. Wilson	
A. Introduction	45
B. Intercensal period, 1946-1953	45
C. Intercensal period 1953-1963	49
D. Intercensal period 1963-1971	54
E. Lifetime migration	56
F. Migration during 1966-1971	56
G. Selectivity	58
H. Migration pattern in Colombo district	62
IV. URBANIZATION	64
- V.S. Ratnasingham	
A. Introduction	64
B. Problems in analysis	64
C. Levels and trends	65
D. Factors in urbanization	76
V. AGE AND SEX COMPOSITION	79
- ESCAP Secretariat	
A. Sex composition	79
B. Age composition	89
VI. ETHNICITY AND RELIGION	99
- ESCAP Secretariat	
A. Ethnic composition	99
B. Religious composition	104

	Page
VII. MARITAL STATUS	110
- ESCAP Secretariat	
A. Introduction	110
B. Marriage customs and laws	111
C. Changes in marital status	112
VIII. TRENDS AND DIFFERENTIALS IN MORTALITY	123
- T. Nadarajah	
A. Introduction	123
B. Crude death rates	123
C. Mortality by age and sex	130
D. Infant mortality	136
E. Maternal mortality	140
F. Mortality differentials	141
G. Causes of death	144
H. Life tables	147
I. Conclusions	153
IX. TRENDS AND DIFFERENTIALS IN FERTILITY	154
- D.F.S. Fernando	
A. Fertility trends	154
B. Cumulative and completed fertility	161
C. Fertility differentials	165
X. POPULATION POLICY AND FAMILY PLANNING	173
- Siva Obeyesekere	
A. Population policy	173
B. Family planning policy	176
C. Family planning programme activities	180
D. Conclusions	189
XI. POPULATION PROJECTIONS	191
- ESCAP Secretariat	
A. Introduction	191
B. Projections made in the 1950s	191
C. Projections made in the 1960s	193
D. Projections made in the 1970s	195
E. Detailed age-sex comparison	202
F. Age structure and functional groups	203
G. Role of projections in planning and policy formulation	205
H. Revision and review	206
XII. POPULATION GROWTH AND EDUCATIONAL DEVELOPMENT	208
- E.L. Wijemanne	
A. Introduction	208
B. Education system	208
C. Trends in educational enrolments	211
D. Retention and repetition rates	223
E. Literacy and educational attainments	226
F. Future Prospects	228
XIII. POPULATION GROWTH AND HEALTH NEEDS	234
- H.A. Jesudason	

	Page
A. Introduction	234
B. Incidence of morbidity	234
C. Medical care services	236
D. Public health services	242
E. Dental services	245
F. Health manpower	246
G. Health expenditure	249
XIV. ECONOMIC ACTIVITY OF THE POPULATION	252
- P. Wilson	
A. Introduction	252
B. Economically active population	252
C. Employed population	263
D. Unemployed population	275
E. Underemployment	281
XV. FAMILIES, HOUSEHOLDS AND HOUSING NEEDS	283
- L.N. Perera	
A. Introduction	283
B. Families and households	283
C. Housing conditions	289
D. Housing needs	298
XVI. POPULATION GROWTH, NUTRITION AND FOOD SUPPLIES	300
- T. Jogaratnam and Beatrice V. de Mel	
A. Introduction	300
B. Present food supply situation	300
C. Consumption estimates	302
D. Nutritional status	305
E. Future food requirements	310
F. Production trends and capabilities	314
G. Summary and conclusion	318
XVII. SOME ASPECTS OF LAW AND POPULATION DYNAMICS IN SRI LANKA	319
- D.C. Jayasuriya	
A. Introduction	319
B. Laws relating to family formation and family life	319
C. Measures affecting the quality of life	332
D. Direct fertility control measures	335
E. Laws relating to collection of demographic data	337
F. Other laws relevant to population dynamics	339
XVIII. POPULATION GROWTH AND THE STATUS OF WOMEN	343
- Shanthi Dissanayake	
A. Introduction	343
B. Demographic profile	343
C. Political rights	344
D. Rights to Education and training	346
E. Rights to employment and security	349
F. Rights under civil law	352
G. Summary	353

ANNEXES

I. SOURCES OF DEMOGRAPHIC DATA	354
- T. Nadarajah	
A. Introduction	354
B. Population and housing censuses	354
C. Civil registration	366
D. Sample surveys	372
E. International Migration	375
II. EVALUATION OF QUALITY OF DEMOGRAPHIC DATA	376
- T. Nadarajah	
A. Introduction	376
B. Direct checks on the accuracy of demographic data	377
C. Accuracy of age-sex data	380
D. Accuracy tests based on interrelation between census and registration data	383
III. STATISTICAL TABLES	390
- ESCAP Secretariat	

List of tables

		Page
Introduction		
Table	1. Annual rainfall, maximum and minimum temperatures at selected stations, Sri Lanka	4
	2. Provinces and administrative districts	7
	3. Gross domestic product by sectoral origin at current factor cost prices, selected years, 1959 to 1973	11
Chapter I		
Table	4. Population of countries in the ESCAP region, censuses between 1969 and 1974	17
	5. Population of Sri Lanka in census years 1871 to 1971, intercensal increase, percentage increase and average annual growth rates	19
	6. Intercensal increase, natural increase and migration increase, Sri Lanka, 1871-1971	19
	7. Sri Lanka born persons enumerated in the Federated Malay States, 1911	21
	8. Sri Lanka born persons enumerated in Malaya, 1947	21
	9. Number of Sri Lanka born persons enumerated in India, 1901-1971	22
	10. Number of Sri Lanka born persons enumerated in the Australian censuses, 1921-1971	22
	11. Average decennial birth rates, death rates and natural increase rates, 1871 to 1970	25
	12. Average annual rates of natural increase, migration increase and population increase, Sri Lanka, 1871 to 1971	27
Chapter II		
Table	13. Numerical distribution of the population by province and revenue district, Sri Lanka, 1871-1971	30
	14. Percentage distribution of the population by province and revenue district, Sri Lanka, 1871-1971	31
	15. Rank distribution of provinces by population size, Sri Lanka, 1871-1971	32
	16. Average annual rates of population growth by province and district, 1871 to 1971	33
	17. Population increase between 1946 and 1971 by district	35
	18. Crude death rates by district, Sri Lanka, selected years, 1930-1970	36

	Page
Table 19. Crude birth rates by district, Sri Lanka, selected years, 1930-1970	38
20. Distribution of the population by urban and rural areas, Sri Lanka, in censuses 1871 to 1971.....	39
21. Percentage urban population in selected ESCAP countries	39
22. Rural-urban distribution of the population by province, Sri Lanka, 1946, 1953 and 1971	39
23. Distribution of population by climatic zones, Sri Lanka, censuses 1871 to 1971	40
24. Density of population in selected ESCAP countries	40
25. Density of population by province and district, Sri Lanka, as in censuses 1871 to 1971	42
26. Density of population by climatic zone, 1871-1971	44
 Chapter III	
Table 27. Comparison of net migration 1946-1953 obtained by the three methods	46
28. Migration rates 1946-1953 by the three methods	46
29. Total population in in-migration and out-migration districts of Sri Lanka by age group and sex ratio (F.S.R. Method)	48
30. Rates of growth — district population, 1946-1953	49
31. Comparison of net migration 1953-1963 obtained by two methods of estimation	50
32. Streams of net intercensal migration between district, 1953-1963 (place of birth data)	51
33. Internal population movement, 1953-1963	52
34. Direction and intensity of interdistrict migration between 1953 and 1963	53
35. Population at 1963 and 1971 censuses, intercensal natural increase and net migration by district.....	55
36. Volume of net intercensal migration by sex, 1963-1971.....	56
37. Life time in- and out-migrants by district, 1971	57
38. In-migrants by districts of usual residence, out-migrants by districts of previous residence and net migration, Sri Lanka, 1966-1971	58
39. Percentage born in district of enumeration by sex and sector, Sri Lanka, 1971	59

	Page
Table 40. Sri Lanka born population - percentage born outside the district of enumeration, 1971 census.....	60
41. Sex ratios among migrants to urban areas by age group, 1971 census...	61
42. Sex ratios among migrants to rural areas by age group, 1971 census	62
43. Districts of origin and destination of the migrants, Colombo District, 1966-1971	63
44. Percentage distribution of in- and out-migrants, Colombo District, by age and sex, 1966-1971	63
 Chapter IV	
Table 45. Growth of the total and urban population, Sri Lanka, 1871-1971.....	65
46. Population of urban areas as variously defined, Sri Lanka, 1871-1971	66
47. Number of towns by size of population, Sri Lanka, adjusted data, 1946, 1953 and 1963.....	67
48. Distribution of urban population according to size of town, adjusted data, 1946, 1953, 1963 and 1971	67
49. Proportion of urban population (nationally defined) to total population in selected countries of the ESCAP region.....	68
50. Distribution of total and urban population by province and district, Sri Lanka, 1946, 1953, 1963 and 1971.....	69
51. Density of total population, and proportion of urban to total population by administrative district, Sri Lanka, 1946, 1953, 1963 and 1971	70
52. Average annual growth rates of total as well as urban population by district, Sri Lanka, inter-censal periods, 1946 to 1971.....	71
53. Distribution of urban population according to size of towns, Sri Lanka, 1871-1971.....	73
54. Population growth in large towns, Sri Lanka, 1946 to 1971.....	74
55. Alternate estimates of trends, Colombo metropolitan population, 1946-1971.....	75
 Chapter V	
Table 56. Population classified by sex, and masculinity proportion and masculinity ratio, Sri Lanka, 1871-1971.....	80
57. Average decennial sex ratios at birth based on registration data, Sri Lanka, 1871-1970.....	80
58. Proportion of infant deaths to 1,000 births in each sex, 1920-1970	81

	Page
Table 59. Masculinity ratios by race group, 1911-1971.....	82
60. Sri Lanka, masculinity ratios by province and district, 1871-1971	84
61. Masculinity ratios of Sri Lankan Tamils by district, 1911-1971	85
62. Masculinity ratios by rural-urban residence, Sri Lanka, 1881-1971	85
63. Age-specific masculinity ratios, Sri Lanka, 1881-1971.....	87
64. Masculinity proportions and masculinity ratios for selected ESCAP members and other countries, 1966-1974	89
65. Percentage distribution of the total population by five-year age group, Sri Lanka, census years 1881 to 1971	92
66. Percentage distribution of the male population by five-year age group, Sri Lanka, census years 1881 to 1971	92
67. Percentage distribution of the female population by five-year age group, Sri Lanka, census years 1881 to 1971	93
68. Intercensal percentage increase in population by age group, Sri Lanka, 1881 to 1971	95
69. Percentage distribution of the total population by broad age group, 1881-1971	95
70. Median age of the population, Sri Lanka, 1881-1971	96
71. Percentage distribution of population by broad age group and dependency ratio in selected countries and territories	97
 Chapter VI	
Table 72. Numerical and percentage distribution of population by race, 1881-1971	100
73. Percentage increase in population by race, 1911-1946 and 1946-1971	101
74. Numerical and percentage distribution of the races by province and district, 1971.....	102
75. Race composition of the population of province and district, 1971	103
76. Percentage distribution of races by sector, 1971.....	104
77. Numerical and percentage distribution of the population by religion, 1911-1971.....	105
78. Percentage increase in population by religion, 1911-1946 and 1946-1971	106

	Page
Table. 79. Numerical and percentage distribution of the religious groups by province and district, 1971	107
80. Religious composition of the population by province and district, 1971	108
 Chapter VII	
Table 81. Population, all ages, classified by marital status, Sri Lanka, census years 1901-1971	112
82. Married population 15 years of age and over by sex, Sri Lanka, census years 1901-1971	114
83. Age-sex specific proportions of married persons, Sri Lanka, census years 1946-1971	114
84. Mean age at marriage, selected years 1932-1973	115
85. Singulate mean age at marriage, census years 1901-1971	116
86. Singulate mean age at marriage for females by district, 1963 and 1971	116
87. Males per 100 females in various age groups, Sri Lanka, census years 1901 to 1971	117
88. Married population by type of marriages, Sri Lanka, census years 1946 to 1971	117
89. Age-sex specific proportions of unmarried persons, Sri Lanka, census years 1946-1971	118
90. Number of widowed persons and proportion widowed to population aged 15 years of age and over, 1946-1971	119
91. Age-sex specific proportions of widowed persons, Sri Lanka, census years 1946-1971	119
92. Divorced/separated persons 15 years of age and over, Sri Lanka, census years 1946 to 1971	120
93. Percentage distribution of total population by marital status and sex for Sri Lanka by urban and rural sectors, 1946 and 1971	120
94. Age-sex specific proportions of never-married and married persons by urban and rural sectors, Sri Lanka, 1971	121
 Chapter VIII	
Table 95. Annual average deaths and death rates for quinquennial periods, 1871-1974	123
96. Age-specific death rates of Sri Lanka and Sweden in 1971	131
97. Age specific death rates by sex, Sri Lanka, selected periods 1920-1922 to 1971	134

	Page
Table 98. Annual rates of decline in age-specific death rates during selected periods, Sri Lanka, 1920-1922 to 1971	134
99. Infant mortality in Sri Lanka, average rates for quinquennial periods, 1881 to 1974	136
100. Infant mortality rates by age at death, Sri Lanka 1921-1966	138
101. Death rates of infants per 1,000 live births by cause and age, and percentage distribution by cause, Sri Lanka, 1934-1965	139
102. Maternal death rates, Sri Lanka, 1921-1974	141
103. Age-specific maternal mortality rates, Sri Lanka, 1954-1972	142
104. Crude death rates by sex, Sri Lanka, 1938-1974	142
105. Mortality sex ratios at different ages, Sri Lanka, selected years 1952-1954 to 1971	142
106. Crude death rates and infant mortality rates by urban and rural sectors, 1952-1954 and 1962-1964	143
107. Crude death rates and infant mortality rates by ethnic group, Sri Lanka, 1962-1964	143
108. Crude death rates and infant mortality rates for districts, Sri Lanka, 1952-1954, 1962-1964 and 1970	144
109. Death rates per 100,000 population by causes of death, Sri Lanka, 1945-1965 and percentage of all deaths due to each cause, 1945 and 1965	145
110. Expectation of life at birth, Sri Lanka, 1900-1902 to 1971	148
111. Trends in life expectancy at birth by sex, Sri Lanka, 1921-1971, and rapidity of mortality decline by sex and stage, Sri Lanka and United States of America	149
112. Percentage of survivors from birth to various ages by sex, Sri Lanka, selected life tables, 1920-1922 to 1971	150
113. Phase-specific temporary expectation of life by sex, Sri Lanka, 1921-1971	151
114. Phase-specific temporary expectation of life by district, Sri Lanka, 1971	152

Chapter IX

Table 115. Quinquennial average crude birth rates and sex ratios of registered births, Sri Lanka, 1871-1974	154
116. Child-woman ratios, census years 1881 to 1971	155

	Page
Table 117. Number of deaths, births and marriages, 1907-1939.....	156
118. Age-specific fertility rates, Sri Lanka, 1952-1971	159
119. Age-specific marital fertility rates, Sri Lanka, 1963 and 1971	160
120. Number of children ever-born per mother, 1946	161
121. Average number of children per ever-married woman by conjugal condition, 1953 census (one per cent sample)	162
122. Average number of live births to mother aged 15-49 years currently in their first marriage by age, Sri Lanka, urban and rural sectors, 1971 census	163
123. Average number of children ever-born per mother completed fertility period, Sri Lanka	164
124. Crude birth rates by major ethnic group, Sri Lanka, 1946-1971	165
125. Crude birth rates, general fertility rates (15-44) and total fertility rates by zone, Sri Lanka, 1963 and 1971	166
126. Age-specific fertility rates by zone, Sri Lanka, 1963 and 1971.....	167
127. Age-specific marital fertility rates by zone, Sri Lanka, 1963 and 1971.....	168
128. Urban and rural fertility, 1946 census	169
129. Fertility differentials, urban, rural and estate sectors, 1953 census	170
130. Child-woman ratios, urban and rural sectors, Sri Lanka, census years 1946-1971	170
131. Educational attainment of women and average number of children born, 1953 census	171
132. Number of live-births born by ever-married woman according to age and educational attainment, Sri Lanka, 1971 census	171
133. Average number of children born alive per married fertile woman aged 45-49 years by ethnic group and socio-economic status, Sri Lanka, 1971	171
 Chapter X	
Table 134. Clinics conducted by the Family Planning Association, 1953/54 - 1965/66	176
135. Estimated Government contribution to family planning category of expenditure	186
136. Foreign contributions to family planning costs, 1953-1974	187

	Page
Table 137. Family Planning Methods — targets and achievements, Sri Lanka, 1966-1974	188
138. Percentage distribution of new acceptors recruited at government, municipality and Family Planning Association clinics by age and number of living children, Sri Lanka, 1968-1971	188
 Chapter XI	
Table 139. Important features of the various population projections for Sri Lanka	191
140. Population projections for Sri Lanka, 1951-1976	192
141. Three alternative series of population projections, Sri Lanka, 1955-1980	192
142. Projected population of Sri Lanka, 1955-1970	192
143. Projected total population of Sri Lanka, 1956-1981	193
144. Population projections for Sri Lanka, 1963-2003	194
145. Population projections for Sri Lanka, 1963-1978	195
146. Projected total population of Sri Lanka, 1963-1998	197
147. Projected population growth, Sri Lanka, 1968-1998	198
148. Projected total population of Sri Lanka, 1971-2001	199
149. Assumed birth, death and migration rates, 1971-1991	200
150. Alternative projections of population, 1971-1991	200
151. Total population and indexes of population size, Sri Lanka, 1970-2150	201
152. Comparison of projected 1971 population with actual 1971 midyear estimates (based on census) by age and sex, Sri Lanka	202
153. Projected population by functional age groups, Sri Lanka, High, Medium and Low projections, 1971-2001	203
154. Child dependency ratios, old-age dependency ratios and total dependency ratios according to three projections, Sri Lanka, 1971-2001	205
 Chapter XII	
Table 155. Growth in school enrolments, Sri Lanka, 1931-1975	211
156. Enrolment ratios for grade I, 1953-1971	213
157. Growth of enrolments in grade I, 1953-1969	214

	Page
Table 158. Enrolment ratios for first and second levels of general education, Sri Lanka, 1950-1969	214
159. Age-specific school participation rates, Sri Lanka, 1955-1974	215
160. Age-sex specific school participation rates by district, Sri Lanka, 1971	216
161. Schools per 1,000 school-age population by administrative district, Sri Lanka, 1971	217
162. Growth in university enrolments by sex, Sri Lanka, 1942-1972.....	219
163. Percentage distribution of university enrolments by courses of study, 1945-1970	221
164. Enrolment ratios for all levels of education in selected countries of the ESCAP region, 1950-1972	221
165. Retention rates, Sri Lanka, 1952-1971	222
166. Retention rates of cohorts enrolled in grade I in the years 1958-1962	224
167. Repetition rates in grades I to X, Sri Lanka, 1971-1973	225
168. Repetition rates, grades I to X by district, Sri Lanka, 1971	225
169. Percentage of literate persons aged 10 years and over, Sri Lanka, 1881-1971	226
170. Literacy rates by age and sex in Sri Lanka, urban and rural sectors, 1971	227
171. Percentage distribution of the population aged 15 years and over by level of education, age and sex, Sri Lanka, 1971	227
172. Projected growth of total and school-age population, Sri Lanka, 1963-1998	229
173. Index of growth rates of school enrolments, Sri Lanka, 1968-1998	231
174. Projected costs of primary and secondary education, Sri Lanka, 1969-1998, alternative assumptions	232
 Chapter XIII	
Table 175. Percentage of persons in each age-sex group reporting sick during a 14-day period in the urban, rural and estate sectors, Sri Lanka, 1969/70	235
176. Number and rate of cases of leading diseases treated at Government hospitals, Sri Lanka, 1951-1970	236

	Page
Table 177. Percentage distribution of sick persons by sources of medical treatment sought, Sri Lanka, 1969/70	238
178. Type of medical institutions in Sri Lanka, 1972	238
179. Actual and potential attendance at medical institutions, Sri Lanka, 1971-1973	239
180. Diseases in outpatients, Sri Lanka, 1972	241
181. Bed strength in Government medical institutions, Sri Lanka, 1970.....	241
182. Number of inpatients treated in Government medical institutions, Sri Lanka, 1961-1971.....	242
183. Number of new positive cases of malaria, Sri Lanka, 1961-1972.....	244
184. Health manpower in Sri Lanka, 1972	246
185. Doctor-population ratios by region, Sri Lanka, 1972	247
186. Nurse-population ratios (per 100,000) and nurse-doctor ratios in different Superintendent of Health Service (SHS) divisions, Sri Lanka, 1972	248
187. Distribution of <i>Ayurveda</i> practitioners by SHS divisions and the <i>Ayurveda</i> doctor-population ratios, 1973	249
188. Public expenditure on health services, Sri Lanka, 1955-1970	250

Chapter XIV

Table 189. Growth of total population and economically active population, Sri Lanka, census years 1946, 1953, 1963 and 1971	253
190. Growth of population and economically active population aged 15-59 years, Sri Lanka, census years 1946, 1953, 1963 and 1971	256
191. Age-specific activity rates by sex, Sri Lanka, 1946-1971	257
192. Age-sex specific activity rates in urban and rural areas, Sri Lanka, 1963 and 1971	261
193. Age and sex-specific economic activity rates for selected countries, censuses around 1970	262
194. Economically active population aged 10 years and over by sex and activity status, 1963 and 1971	264
195. Growth of employed population by sex, 1946-1971	265
196. Growth of employed population by rural and urban areas, 1953-1971	265

	Page
Table 197. Percentage distribution of employed population by age and sex, 1946-1971	266
198. Age-specific employment rates, 1963 and 1971	267
199. Percentage distribution of employed population by major industrial sector and sex, 1953-1971	268
200. Percentage distribution of employed population by major occupation and sex, 1953-1971	270
201. Distribution of the employed population by occupation and educational attainment, Sri Lanka, 1971	271
202. Percentage distribution of employed population by employment status and sex, 1953-1971	272
203. Employed population by employment status and major industrial sector, 1963 and 1971	274
204. Employed population by employment status and major occupation, 1963 and 1971.....	275
205. Unemployed population 1959/60, 1963, 1969/70 and 1971.....	276
206. Percentage distribution of unemployed persons by age and sex, urban and rural areas, Sri Lanka, 1971	276
207. Age-specific unemployment rates, urban and rural areas, Sri Lanka, 1971	278
208. Percentage distribution of unemployed persons by level of educational attainment and sex, 1971	278
209. Percentage distribution of unemployed persons by age, sex and level of educational attainment, 1971.....	279
210. Percentage distribution of the unemployed by those not actively seeking work and those actively seeking work in age and sex categories, 1971	280
211. Distribution of unemployed actively seeking work by period of which they were seeking work, age, sex, urban and rural areas, 1971	281
212. Percentage distribution of employed persons by number of hours worked, Sri Lanka, 1959/60 and 1968	282
 Chapter XV	
Table 213. Growth of population and households, by urban and rural sectors, Sri Lanka, 1953 and 1971	284
214. Growth of population and families by urban and rural sectors, Sri Lanka, 1963 and 1971	285
215. Projections of households, Sri Lanka, 1971-2001	286

	Page
Table 216. Average size of households, Sri Lanka, 1953-1973.....	286
217. Percentage distribution of households by size, Sri Lanka, 1953-1973	287
218. Percentage distribution of households by size in urban, rural and estate sectors, Sri Lanka, 1973	287
219. Average size of households, number of income receivers and dependants, Sri Lanka, 1953, 1963 and 1973	287
220. Estimates of average income of income receivers and spending units, Sri Lanka, 1953, 1963 and 1973	288
221. Percentage share of the income received by each tenth of ranked spending units, Sri Lanka, 1953, 1963 and 1973	288
222. Population growth and housing development by sector, Sri Lanka, 1953-1971	289
223. Percentage distribution of occupied housing units by number of occupants, Sri Lanka, 1953, 1963 and 1971	290
224. Occupied housing units classified by structural type, Sri Lanka, 1953-1971	291
225. Housing units classified by structural type and sector, Sri Lanka, 1971	292
226. Percentage distribution of housing units in the various sectors by type and period of construction, Sri Lanka, 1920 and earlier to 1971	292
227. Numerical and percentage distribution of occupied housing units by sector and number of rooms, Sri Lanka, 1971	294
228. Distribution of occupied housing units with average number of occupants less than, equal to, and greater than three persons per room in the urban, rural and estate sectors, Sri Lanka, 1971	294
229. Percentage distribution of housing units according to specified floor areas in the urban, rural and estate sectors, Sri Lanka, 1971.....	294
230. Percentage distribution of housing units according to number of resident families in the urban, rural and estate sectors, Sri Lanka, 1971	295
231. Percentage distribution of housing units by source of water supply in the urban, rural and estate sectors, Sri Lanka, 1971.....	296
232. Percentage distribution of housing units by type of toilet facilities in the urban, rural and estate sectors, Sri Lanka, 1971.....	296
233. Percentage distribution of occupied housing units by tenurial status and sector, Sri Lanka, 1971.....	297

	Page
Table 234. Percentage distribution of housing units of given tenurial status by sector, Sri Lanka, 1971.....	297
235. Trend in tenure of housing, 1953-1971	298

Chapter XVI

Table 236. Production, net trade and net supply of specified food commodities, annual averages 1968-1970 and 1971-1973	301
237. Relative contribution of domestic production and imports to total availabilities of selected food items, per head per year, Sri Lanka, 1948-1952, 1964-1968 and 1968-1969	302
238. Apparent availabilities of selected food items, by different source, and recommended allowances for Sri Lanka, 1968-1973.....	303
239. Percentage of adequacy of some nutrients, by income class, Sri Lanka	306
240. Apparent <i>per capita</i> daily nutrient availabilities, lowest income group by urban, rural and estate sectors, Sri Lanka, 1969/70.....	307
241. Some nutrition intakes <i>per capita</i> per day, rural low income, Sri Lanka, 1969-1971	307
242. Prevalence of protein-calorie malnutrition (PCM) in pre-school children, by district, 1974.....	308
243. Population projections for Sri Lanka, 1971-2001	311
244. Nutritional intakes and quantities of specified food crops consumed, by urban, rural and estate areas, Sri Lanka, 1969/70	311
245. Elasticity coefficients for selected food items, by different sources....	312
246. Projected <i>per capita</i> consumption and total requirements of specified food items in the year 2000, with 1970 estimates for comparison	314
247. Agricultural production and growth rates in Sri Lanka, 1949-2000.....	315

Chapter XVIII

Table 248. Projected population of Sri Lanka by sex, 1976-2001.....	344
249. Women contestants in local authority elections, Sri Lanka, 1960-1975	345
250. Distribution of pupils and teachers by sex and education district, Sri Lanka, 1974	348
251. Percentage of women students enrolled in the universities by faculty, Sri Lanka, 1966-1975.....	348

	Page
Table 252. Proportion of females among the employed persons in each major occupational group, Sri Lanka, 1963 and 1971	350
253. Projected labour force by sex, Sri Lanka, 1971-2001	351
Annex I	
Table 1. Topics included in the population schedule at the censuses in Sri Lanka, 1871-1971	356
2. Information on housing obtained at the censuses in Sri Lanka, 1946-1971	359
3. List of principal tabulations available from population censuses, Sri Lanka, 1871-1971	362
4. Information currently recorded in respect of vital events	369
5. Tabulations in respect of live births, deaths and marriages showing the geographic areas for which they are available	371
Annex II	
Table 1. Estimate of error per 1,000 persons enumerated at 1953 census	378
2. Percentage completeness of registration	378
3. Births and deaths registered, numbers recorded in the sample census block during the period 1 January - 31 March 1967 and percentage completeness of registration	379
4. Whipple's index of preference for digits 0 and 5, Sri Lanka, censuses of 1946-1971	382
5. Myer's index of digital preference for digits 0 to 9, Sri Lanka, censuses of 1946-1971	382
6. Myer's index of over-all digital preferences, Sri Lanka, censuses 1946-1971	383
7. Age accuracy index by the United Nations secretariat method, Sri Lanka, censuses of 1891, 1921, 1946, 1953, 1963 and 1971	383
8. Completeness of enumeration of children aged 0, 1, 2, 3, and 4 at the Sri Lanka censuses of 1946, 1953, 1963 and 1971	384
9. Comparison of 5-9 age group estimated from registered births and deaths with the population of the same age enumerated at the censuses of 1963 and 1971	385
10. Balancing equation components for total population, 1921-1971, and Sinhalese population, 1901-1971, Sri Lanka	387
11. Estimated intercensal increase on the basis of corrected births and deaths, Sri Lanka, 1946-1971	388
12. Estimated under or over-enumeration on the assumption that (a) 1946 enumeration is complete and (b) 1971 enumeration is complete	389

Annex III

Table	1. Estimated population, number of registered marriages, births and deaths, and crude birth rates, crude death rates and infant mortality rates, Sri Lanka, 1867-1975	390
	2. Deaths of children under one year by sex, 1947-1966	393
	3. Food balance sheet for Sri Lanka average, 1968-1970	393
	4. Food balance sheet for Sri Lanka average, 1971-1973	394
	5. Population, gross production of paddy, and imports of rice, wheat flour, sugar, pulses, fish and milk products, 1948-1974	395
	6. Population of Sri Lanka by single year of age and sex, 1946, 1953, 1963 and 1971	396

List of figures

		Page
Introduction		
Figure	1. Map of Sri Lanka showing land utilization	2
	2. Map of Sri Lanka showing contours	3
Chapter I		
Figure	3. Population growth in Sri Lanka, 1871-1971	18
	4. Trends in rates of total increase and natural increase of population, 1871-1971	23
	5. Birth rates and death rates, Sri Lanka, 1920-1974	24
Chapter II		
Figure	6. Sri Lanka, population density, 1971	43
Chapter V		
Figure	7. Masculinity ratios by age group for Sri Lanka, urban and rural, 1971	86
	8. Masculinity ratios by age group for total population, Sri Lanka, 1881, 1921 and 1971	88
	9. Age pyramids of the population, 1881, 1901, and 1946 to 1971	91
	10. Percentage distribution of the population by five-year age group for urban and rural, 1971	94
Chapter VIII		
Figure	11. Average crude death rates for quinquennial period, 1871-1974....	124
	12. Death rate and its trend, 1900-1950	128
	13. Age-specific death rates of Sri Lanka and Sweden in 1971 (male)	132
	14. Age-specific death rates of Sri Lanka and Sweden in 1971 (female)	133
	15. Infant mortality in Sri Lanka, average rates for quinquennial periods, 1881 to 1974	137
	16. Death rates per 100,000 population by major causes of death, 1945-1965	146
Chapter IX		
Figure	17. Trend in crude birth rates, Sri Lanka, 1953-1974	157
Chapter XI		
Figure	18. Assumed trends in the gross reproduction rate, Sri Lanka, 1968-1998	196
Chapter XIV		
Figure	19. Percentage of the total population in the labour force (crude activity rates), 1946-1971	254
	20. Pattern of labour force participation, male, 1946-1971	259
	21. Pattern of labour force participation, female, 1946-1971	260
Chapter XVI		
Figure	22. Caloric availability per head per day for specified items, three years moving average, 1948-1974	304
	23. The dimensions of Sri Lanka's foodgrain problem: projected rates of growth in rice requirements and domestic rice production, 1970-2000	316
Annex II		
Figure	1. Population for Sri Lanka by single year of age, 1946 and 1971 ...	381

INTRODUCTION

A. LOCATION AND AREA

The island republic of Sri Lanka (Ceylon)^{1/} is situated in the Indian Ocean between the northern latitudes $5^{\circ} 55'$ and $9^{\circ} 50'$ and the eastern longitudes $79^{\circ} 42'$ and $81^{\circ} 52'$. It is separated from the Indian sub-continent by a narrow strip of shallow water, the Palk Strait. Next to India, the nearest neighbours of Sri Lanka are the Maldiv Islands to the west, the Nicobar and Andaman Islands to the east and north-east respectively.

The island has a compact land area except for Mannar island in the northwest, and the Jaffna Peninsula with its cluster of smaller islands, the largest of which are Kayts and Delft, in the north. The country extends through its greatest length 270 miles from Point Palmyrah in the north to Dondra Head in the south. Its greatest width is 140 miles, from Colombo in the west to Sangamankande on the east coast. Sri Lanka has an area of 25,332 square miles or 16,212,480 acres of which about 370 square miles or 236,700 acres comprise large inland waters. Nearly 4 million acres or one-fourth the total area constitute developed agricultural land, of which tea, rubber and coconut form 2.4 million acres. Paddy forms 1.3 million acres. Shifting cultivation occupies 2.4 million acres while 7.2 million acres are under forest and forest reserves (figure 1).

B. PHYSICAL FEATURES

Generally speaking, the relief of the island may be said to constitute: (a) a mountainous area covering the south-central part averaging in elevation from 3,000 to 7,000 feet; (b) an upland belt at an elevation of about 1,000 to 3,000 feet surrounding the montane country; and (c) the flat coastal plain which occupies the rest of the island (figure 2).

The central highlands originally formed part of the great mountain system of the South Asian Peninsula. The essential framework of the hill country over 5,000 feet appears in the form of an inverted "T" or anchor with the central ridge forming the

shank on which are some of the highest peaks in the country - Pidurutalagala (8,281 feet), Kirigalpotta (7,857 feet), Totapalakanda (7,733 feet) - as well as the high plains such as Nuwara Eliya (over 6,000 feet), Elk Plains (6,000 feet) and Horton Plains (over 7,000 feet). At the base of the shank is Kirigalpotta from where one arm of the anchor extends westwards to terminate at the famous cone-shaped Adams Peak (7,341 feet) especially venerated by the Buddhists, while the eastern arm extends through Haputale to form Namunukula (6,679 feet). To the northwest of the shank are two plateaus, the Hatton Plateau to the west and the Welimada Plateau to the east, each averaging 4,000 feet in height. Forming a detached portion from the massif to the southwest lies the Rakwana hill country and the Bulutota massif averaging 3,000 feet.

The central mountains are surrounded by a coastal plain which is narrow on the west, east and south but broadens out to a vast tract in the north extending over half the length of the country. The Jaffna Peninsula and the island of Mannar are entirely featureless plains. The coastal plain does not drop abruptly but continues for a considerable distance out to sea (20 to 60 miles) as the continental shelf.

The hydrographic pattern is a function essentially of relief and structure. With the mountain mass in the centre, a radial pattern is clearly observed in Sri Lanka. Thus, the rivers rise from the mountains and flow in all directions. In this way almost every part of the island is served by rivers. The longest and most important river in Sri Lanka is the Mahaweli Ganga which flows to the northeast. The mean annual yield of the 103 river basins in the island is estimated at 27 million acre feet, of which 11 million acre feet flow through the dry zone.

C. CLIMATE AND RAINFALL

Given the country's proximity to the equator, the mean temperature on the plains ranges from 80° to 82° F. But since the maximum width of the island is only 140 miles, the oceanic effect helps to reduce the temperature in the plains while altitude modifies the temperature in the central highlands. In many parts of the country, there is only a small variation in the mean monthly temperatures throughout the year, varying in Colombo for instance by only 3° between the coolest and warmest months. The coolest period is from November to January.

^{1/} Sri Lanka has been known by many names down the years. The Asokan inscriptions referred to it as Tambapanni while the ancient Greeks and Romans (Strabo, Pliny, Ptolemy and others) described it as Taprobane. The Arab sailors called it Serendib or Saradip; the Portuguese and Dutch gave the names Ceilo and Ceylan while the British called it Ceylon. But to the people of this island it has always had one name - Sri Lanka or the Resplendent Isle.

80°

81°



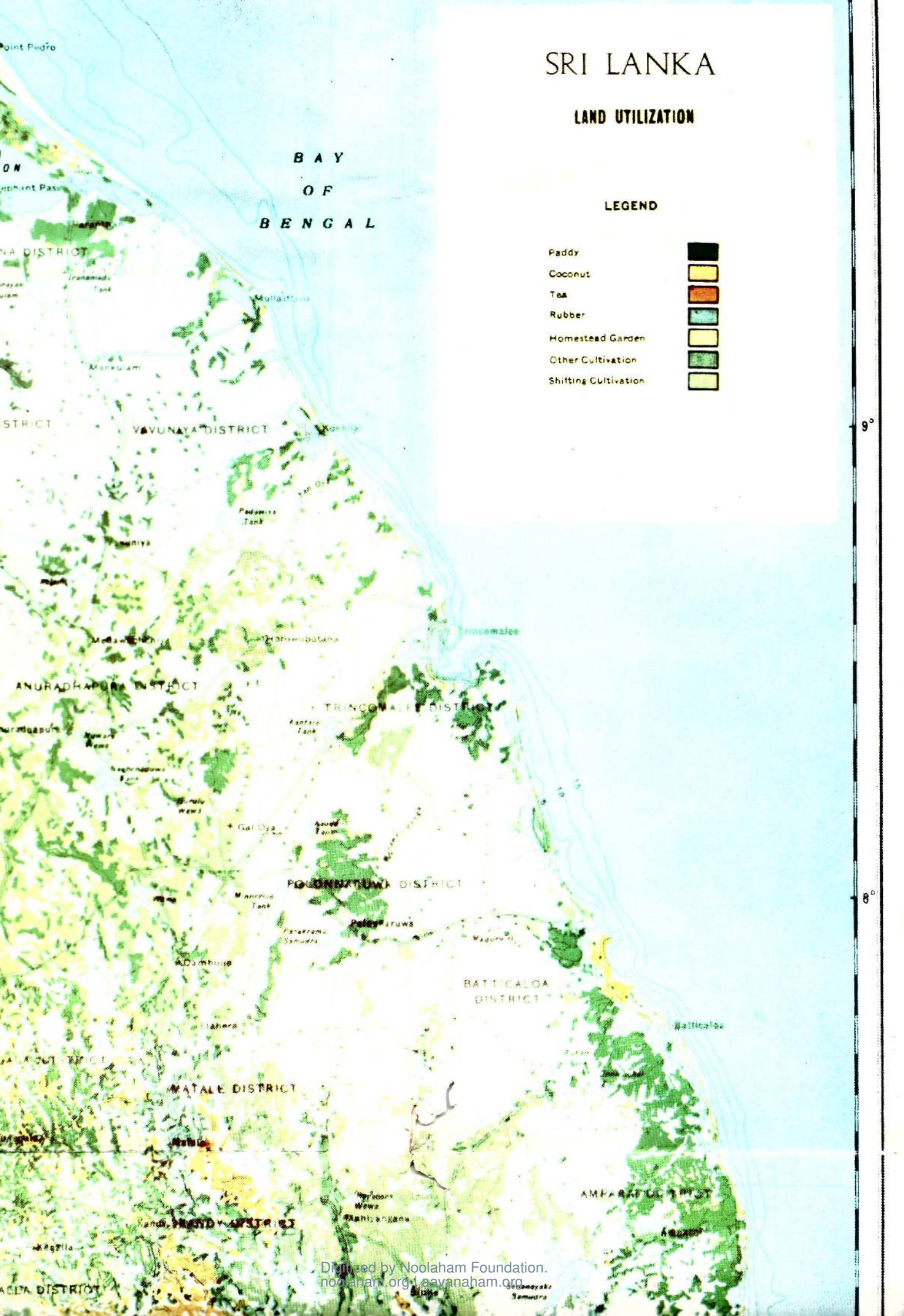
SRI LANKA

LAND UTILIZATION

BAY
OF
BENGAL

LEGEND

Paddy	
Coconut	
Tea	
Rubber	
Homestead Garden	
Other Cultivation	
Shifting Cultivation	



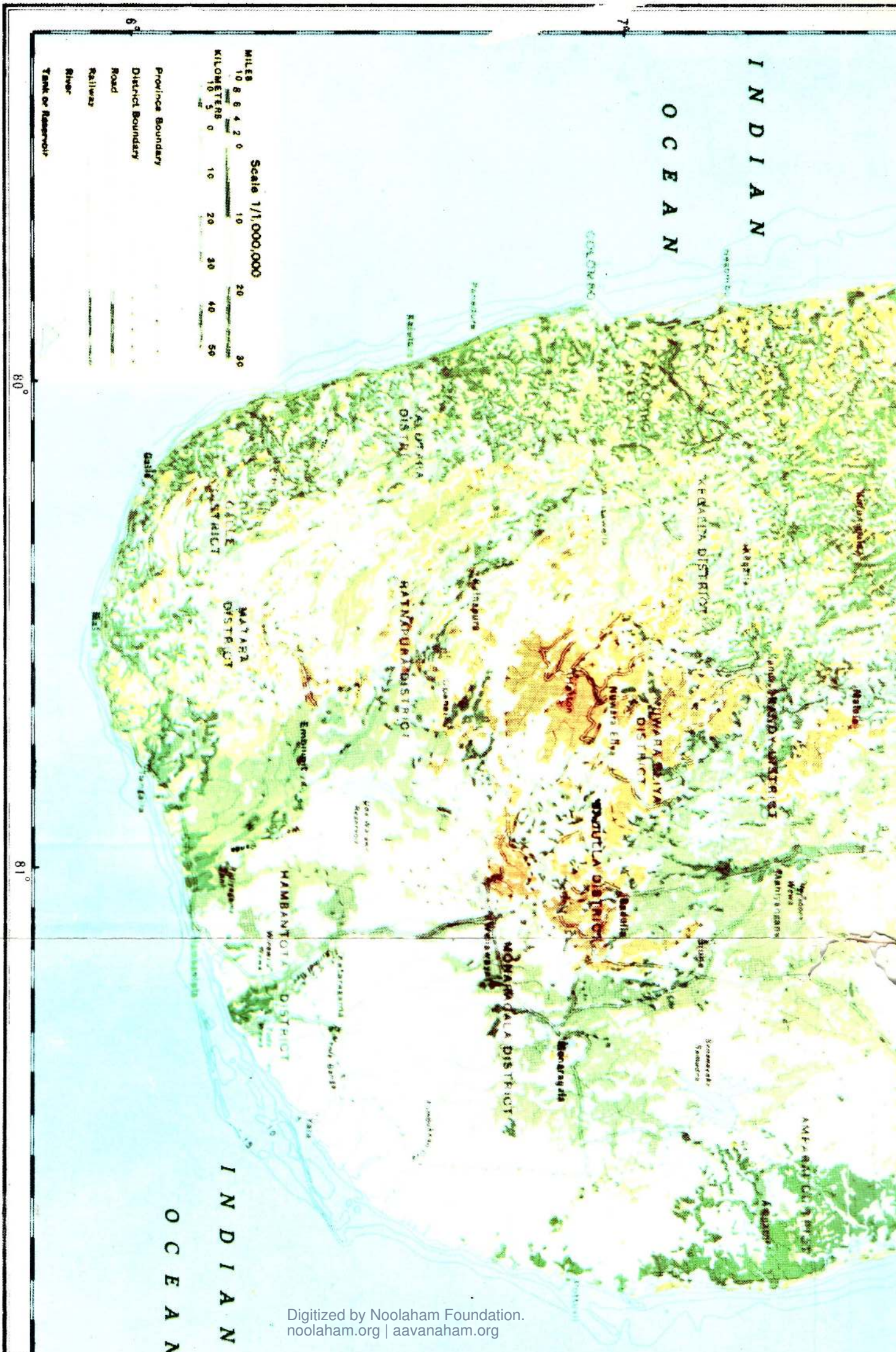
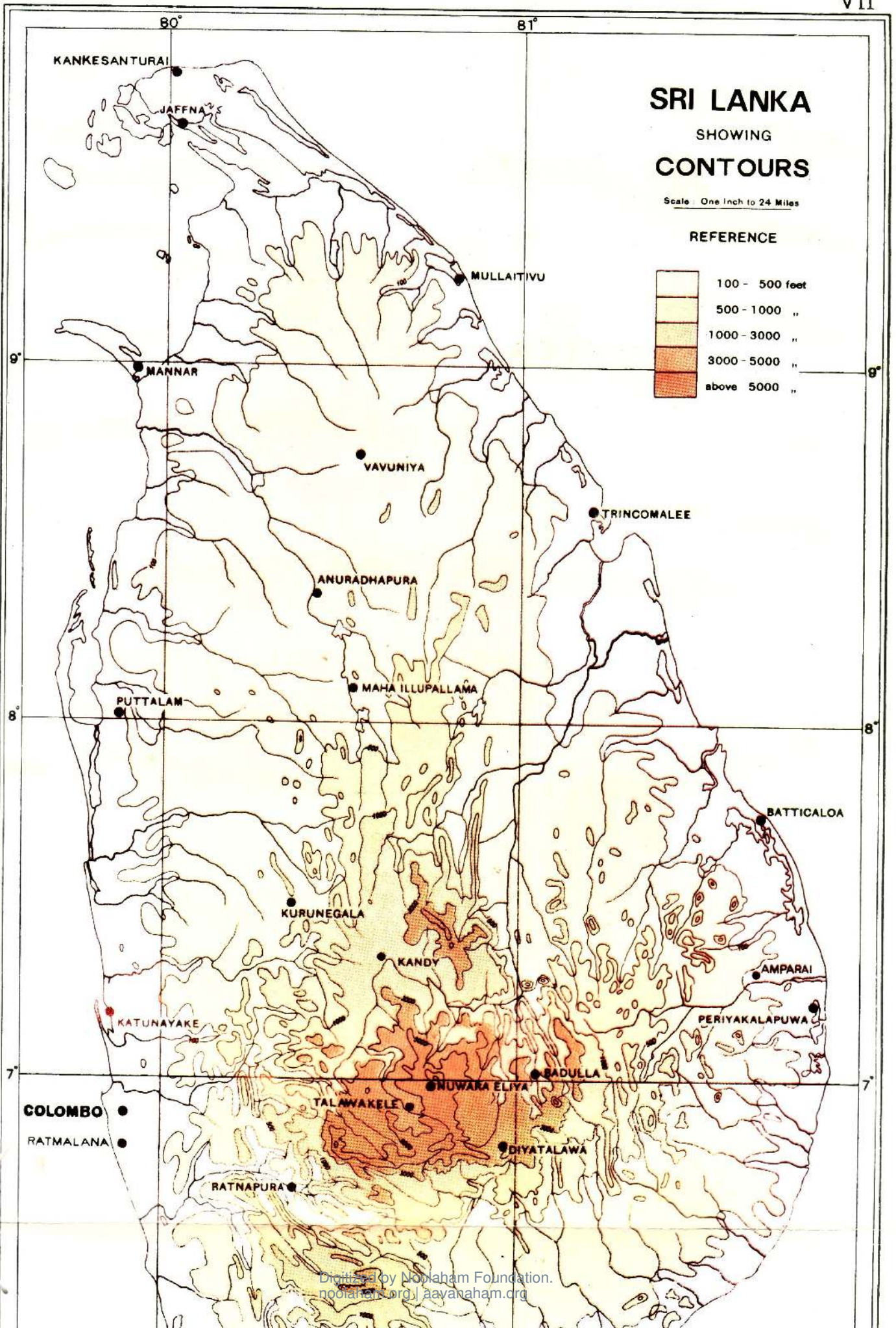


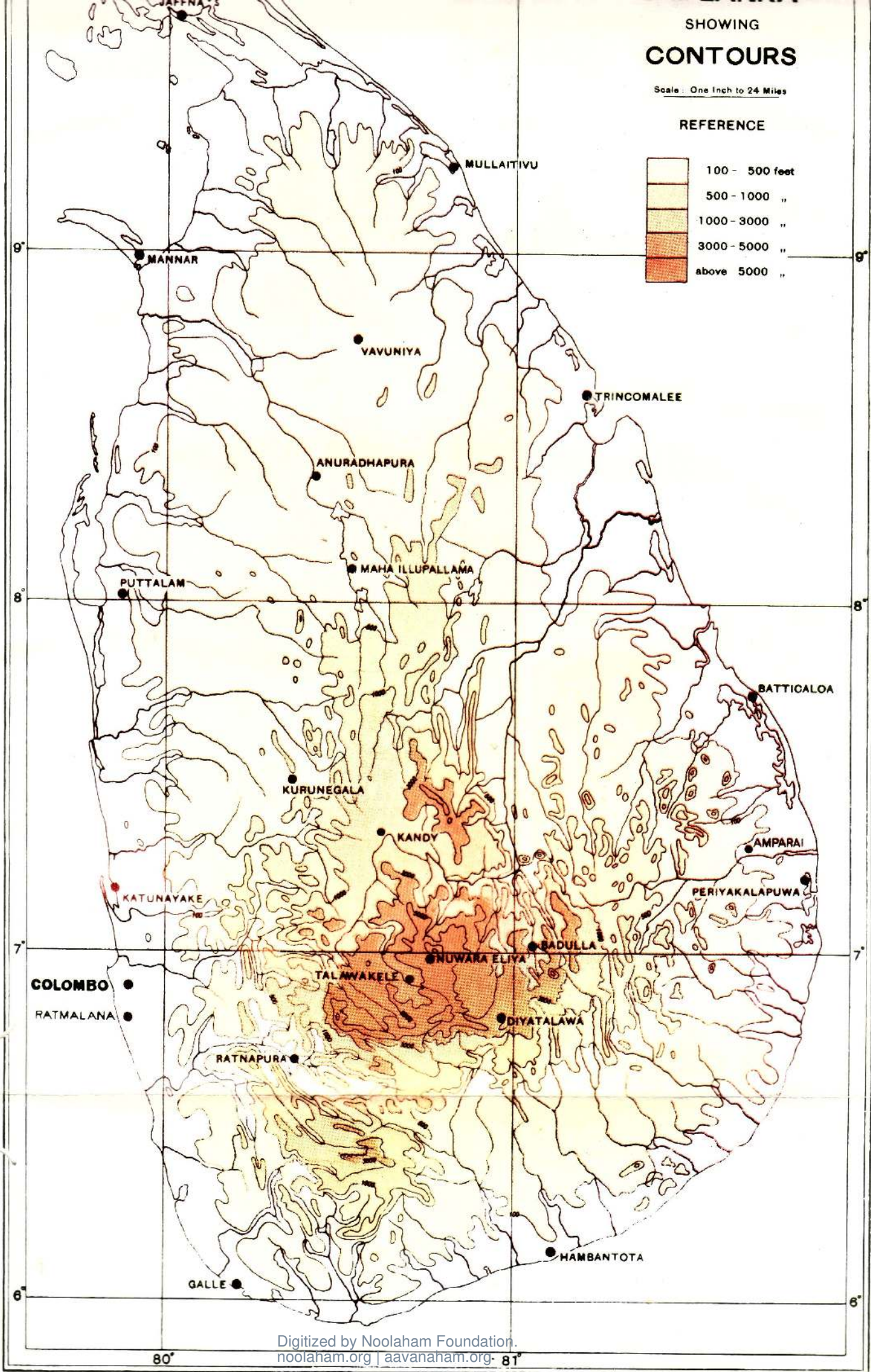
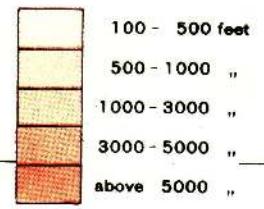
Figure 1. Map of Sri Lanka showing land utilization.



SHOWING CONTOURS

Scale: One Inch to 24 Miles

REFERENCE



The highest temperatures are experienced in districts to the north or north-west of the hills, and in the eastern and north-eastern low country, generally during March to June when, however, they rarely exceed 95° F. The temperature decreases with altitude and in the hill country it falls off at a steady rate of about 1° F for each 300 feet. Colombo, the country's capital at sea level, registers an average temperature of 80° F; Kandy at about 1,000 feet registers an average of 76° F; Diyatalawa at 4,100 feet experiences an average temperature of 68° F, while the average temperature in Nuwara Eliya at an altitude of 6,200 feet is 60° F.

Rainfall is of three types - monsoonal, convectional and depressional. Monsoon rain occurs during the two monsoons, southwest and northeast, and is responsible for a major part of the annual precipitation. The rains during both monsoons depend largely on the humidity and depth of the monsoon air masses which travel to Sri Lanka over long stretches of sea where they acquire their physical characteristics. Sri Lanka is directly in the path of the monsoon streams and such modifications in the characteristics of the monsoon streams as occur over land are caused mainly by the presence of the central hills.

The rainfall during the southwest monsoon period, May to September, is mostly confined to the south-

western parts. At the beginning it occurs in the southwestern low country but spreads gradually to the interior with very heavy rain in the hill country from June to August. The northwest monsoon period is from December to February but most of the rain occurs in December and January, the heaviest rain being experienced on the northeastern slopes of the hill. Convectional rain occurs during the intermonsoonal periods, mainly in the afternoon or evening, and can be experienced anywhere over the land. Depressional rain also occurs mainly during the intermonsoonal periods, particularly during October and November. A depression in the Bay of Bengal will cause rainfall in the eastern parts of the island, while one in the Arabian Sea results in rainfall in the western parts.

Though the country is conventionally divided into two climatic zones, the wet zone comprising the southwestern sections of the country, and the dry zone which is largely the northeastern section, no part of the country is completely dry. In the wet zone the average annual rainfall varies from 100 to 200 inches while in the dry zone it is below 50 inches. The dry zone experiences a prolonged period of drought during the southwest monsoon.

The annual rainfall as well as the maximum and minimum temperatures at selected stations are shown in table 1.

Table 1. Annual rainfall, maximum and minimum temperatures at selected stations, Sri Lanka

Station	Annual rainfall (inches)			Annual temperature (degree F)			
	Average 1931-1960	1969	1973	1931-1960		1973	
				Maximum	Minimum	Maximum	Minimum
Colombo	94.31	108.66	88.41	86.0	75.0	87.5	76.2
Jaffna	52.34	60.75	41.85	86.1	77.4	86.9	78.2
Trincomalee	67.98	69.29	66.68	87.8	76.9	89.1	77.9
Hambantota	42.34	54.84	44.03	86.3	75.2	87.1	76.1
Ratnapura	153.06	139.46	118.44	88.7	73.1	90.5	73.3
Anuradhapura	56.98	58.82	39.94	89.0	73.2	90.2	74.2
Kandy	79.70	69.89	57.28	83.8	68.0	84.8	68.8
Diyatalawa	68.10	68.53	53.96	76.3	60.4	77.0	60.8
Nuwara Eliya	85.15	78.66	52.00	68.1	51.3	69.5	53.4

Source: Government of Sri Lanka, *Statistical Pocket Book of Sri Lanka (Ceylon), 1973 and 1974* (Colombo, Department of Census and Statistics), tables 4 and 5.

D. HISTORICAL SKETCH

The strategic situation of Sri Lanka on the ocean highway between the west and the east has exposed it to frequent visits and invasions by foreigners. "Possessed of great natural wealth and endowed by the traditions of all Eastern races with fabulous treasures, Ceylon was bound to be the prey of the invader. Situated as the Island is in close proximity to India and a natural port of call for all voyagers to the Far East, it is not surprising that her history should be one long record of invasions from China, India and the Arabian coasts, and from the sixteenth century onwards from Europe."^{2/}

The island's close proximity to the South Asian sub-continent has had a very great influence in shaping her history. At various times, streams of immigrants, moving southwards along the east and west coasts of India met in Sri Lanka and have left their mark on the culture and civilization of the island. In fact, the civilizations of the Sinhalese and of the Tamils may be said to owe their origins to successive waves of Aryan and Dravidian migrants from India.

The earliest Indian tradition about Sri Lanka is recorded in the *Skanda Purana*, the story of the rise and fall of the mighty and wicked Titan, for whose overthrow Skanda or Kartikeya, the god of war and wisdom was incarnated.^{3/} The next Indian tradition, later by many centuries, is that of the ancient epic *Ramayana* which narrates the abduction of Sita, a north Indian princess by Ravana, King of Sri Lanka, and the invasion of Sri Lanka by her husband Rama and her recovery after a bloody battle. According to Sir William Jones, who has made a study of the *Ramayana*, the incidents of the legend date back to 1810 B.C.

The first historical event concerning Sri Lanka is recorded in the *Dipavamsa* and the *Mahawansa*, two ancient and erudite Buddhist chronicles. Accord-

^{2/} E.B. Denham, *Ceylon at the Census of 1911 - The Review of the Results of the Census of 1911*, (Colomb, Government Record Office, 1912), p. 2.

^{3/} It has been observed that "the echoes of that contest live in a remote forest shrine in the south-eastern corner of the Island, called after him, Kartikeya Grama or Kataragama, where after his victory he wooed and won a chieftain's daughter, who shares with him the worship of millions from Cashmere to Ceylon and with whom the Sinhalese priests (*Kapurallas*) of the shrine proudly claim kinship." in P. Arunachalam, *The Census of Ceylon, 1901*, vol. I (Colombo, Government Record Office, 1902), p.7.

ding to these chronicles, an errant Indian prince named Vijaya, exiled from his land, arrived on the north-western coast with his band of 700 men in the year 543 B.C. and colonized the island. The invaders soon established themselves in extensive settlements in the dry zone along the banks of the Malvatu Oya. The Sinhalese are reputed to have descended from Vijaya and his followers. The uncertainties of the weather and the effects of alternating drought and flood were eventually overcome by the Sinhalese kings through an ingenious irrigation system comprising an intricate network of tanks and reservoirs formed by dams constructed across rivers. The city of Anuradhapura grew up to be the capital of the island during that time. A landmark in the religious and social history of the country was the introduction of Buddhism in 247 B.C. by the venerable *bhikku*^{4/} Mahinda, son of the King Asoka, Emperor of India.

South Indian invasions were frequent and in the mid-second century B.C., a large part of northern Sri Lanka came under south Indian rule. The Sri Lankan Tamils owe their ethnic origin to these south Indians. In the fifth century A.D., Sigiriya became a royal city but in the eleventh century, the capital was established at Polonnaruwa. Invasions and dynastic strifes continued, however, and caused the capital to be moved to other sites such as Yapahuwa, Dambadeniya, Kurunegala, Gampola, Dedigama, Rayigama, Sitawaka and Kotte.

It was during the fifteenth century, when the capital was at Kotte, that the first European contact was felt. This was the beginning of the crucial changes that were to follow, eventually resulting in foreign domination which lasted for over four centuries. In 1505, the vagaries of the wind and weather accidentally brought the Portugese to Sri Lanka. The instability of the government caused by political intrigues and internal dissensions paved the way for the Portugese who, attracted by the prospects of a lucrative trade in spices, began to entertain territorial ambitions. Before long, a major part of the coastal belt of the island was conquered by them. The Portugese were the first to introduce Christianity into Sri Lanka. "It is a remarkable tribute to the Portugese genius for assimilation that no distinctive race-group with peculiar ethnic or social characteristics has come down to attest the one hundred and fifty years of Portugese authority in the country".^{5/}

^{4/} A *bhikku* is a member of the Buddhist order of monks.

^{5/} A.G. Ranasinha, *Census of Ceylon 1946, vol. 1, part I - General Report* (Colombo, Department of Census and Statistics, 1950), p.18.

The Portugese were ousted by the Dutch who ruled over their possessions in the island from A.D. 1640. The Dutch established trade and ruled the maritime provinces through a governor until 1796. The Dutch helped to develop the maritime provinces by fostering agriculture, especially the cultivation of paddy. New lands were brought under cultivation and new crops were introduced. Irrigation works were constructed or repaired and a system of law and justice provided security and order. "From the demographic angle, their main contribution lies in the addition to the permanent population of the Island, firstly, of a group of European descendants who have developed a common race-consciousness under the distinctive designation of 'Burghers', and secondly, of a yellowish-brown group of Javanese extraction whose ancestors were brought by them into Ceylon for military services or as political deportees, and who, though Muslim by religion, preserve a separate race-consciousness under the name of 'Malays'".^{6/}

In 1796, the British took over from the Dutch. All along, the Kandyan Kingdom with its capital in Kandy retained its independence defying repeated assaults by the foreign powers which ruled over the rest of the country. In 1815, however, the British annexed the Kandyan Kingdom and established their rule over the whole island. The era of the British rule witnessed important changes in the social and economic life of the people. The country was ruled by a governor appointed from England. New laws were introduced and European ways and beliefs came to influence the life-style of the leading groups of people within the Sri Lankan communities. Modern communications, western medical services, education in English as well as the plantation industry (first coffee, then tea, rubber and coconuts) developed during the British rule. "The country was opened up by an inflow of British capital and followed in the wake of British economic enterprise in a century unparalleled for an onward march towards prosperity. New elements were added to its population by immigration, particularly by the importation of South Indian Tamils for work on the large plantations in the hill country."^{7/}

Sri Lanka regained its independence in 1948 through a process of peaceful constitutional evolution and is today a free, sovereign and independent republic ruled by the elected representatives of the people.

^{6/} *Ibid.*, p. 23.

^{7/} *Ibid.*, p. 26.

E. PEOPLE

The term "friendly islanders" may well apply to the people of Sri Lanka who grew and multiplied in comparative peace and prosperity. According to the latest census, held in October 1971, the population of Sri Lanka was reckoned at 12,689,897 persons. The people of Sri Lanka are an interesting combination of various ethnic groups: Sinhalese (72.0 per cent); Sri Lankan Tamils (11.2 per cent) and Indian Tamils (9.3 per cent). Moors (Sri Lankan and Indian), Burghers, Malays and others make up the balance 7.5 per cent.

The numerically large Sinhalese population is mainly Buddhist while the majority of Sri Lankan and Indian Tamils are Hindus. The Sri Lankan Moors as well as the Malays are Muslims while it is noteworthy that Burghers as well as a number of Sinhalese and Tamils are Christians. Nearly 67.3 per cent of the people are Buddhists and 17.6 per cent are Hindus while Christians and Muslims form 7.9 per cent and 7.1 per cent respectively.

Language constitutes an important social and cultural factor in the life of the community. Sinhala, a language of Indo-Aryan origin is the language of the majority and the official language of the country. Tamil, which is of Dravidian origin, is an important minority language and is widely used in the northern and eastern parts and in the plantation areas. English is widely spoken in urban areas and is also fairly well known in rural areas.

"Ethnic origin, religion and language are inter-related aspects of the culture that co-exists in Ceylon, reputedly without significant merging over the centuries. Many facts attest the existence of change, sometimes tending toward further differentiation, sometimes toward integration. The diffusion of Christianity to include nine per cent of all the Island's people among its adherents, as well as the biological amalgamation and cultural assimilation that made the Veddahs a 'dying people', may be cited as illustrative. The major constituent groups reveal extra-ordinary stability, though, perhaps they are held together by many factors contributing to internal unity, and are separated from each other by the gulfs that divide the world's greatest religions".^{8/}

As elsewhere, people tend to live where the land is fertile and accessible. About 70 per cent of the

^{8/} Irene B. Taeuber, "Ceylon as a demographic laboratory - preface to analysis", *Population Index* (Princeton, NJ), vol. 15, No. 4, October 1949, p. 294.

island's population is found in what is known as the southwest wet zone region of the country. Most of the cultivated land and the majority of the country's industries are to be found here, though the dry zone offers the greatest potential for colonization and development in the future.

During the period immediately following the Second World War population growth has been extremely high. It averaged 2.8 per cent *per annum* during 1946-1953. This was due to the sharp decline in mortality following malaria control. Since 1960, however, there has been a slackening in the rate of population growth due largely to a decline in the birth rate. The rate of urbanization has been generally slow and only about 21 per cent of the population were found to be living in areas defined as urban at the 1971 census.

The level of literacy in Sri Lanka is relatively high compared with other developing countries. According to the census of 1971, nearly 85 per cent of the males and 71 per cent of the females were literate.

The 1971 census also showed that of a total population of 9,354,303 aged 10 years and over, 3,648,875 or 39.0 per cent were employed and 839,264 or 9.0 per cent were unemployed. The unemployed constituted 18.7 per cent of the labour force. Nearly 50 per cent of the employed persons were engaged in agriculture and allied industries while about 13 per cent were in manufacturing industries.

F. ADMINISTRATIVE SYSTEM

For convenience of administration, Sri Lanka has for long been divided into provinces and further sub-divided into revenue or administrative districts. The country was first divided into five provinces, the Northern, Southern, Eastern, Western and Central with capitals at Jaffna, Galle, Trincomalee^{9/}, Colombo and Kandy respectively. The North-Western Province was added in 1845; the North Central in 1873, Uva in 1886 and Sabaragamuva in 1889. Today, there are nine provinces and 22 administrative districts.^{10/} "The division of the country into provinces and districts is based primarily on the accessibility

^{9/} Batticaloa was made the capital of Eastern Province in 1870.

^{10/} The number of districts has also varied over the years. Chilaw District which came into existence about the time of the 1891 census was, after 1953, merged with Puttalam District. Between 1953 and 1963, the Batticaloa District was divided into Batticaloa and Amparai Districts; the Anuradhapura District into the Anuradhapura and Polonnaruwa Districts; and Badulla District into Badulla and Monaragala Districts.

of different parts to a central control station and the quantum of work that the administrative officers were called upon to do. Yet as natural resources play an important part in the distribution of a population, this division of the country into provinces and districts is not without demographic significance".^{11/}

At the head of each administrative district is the government agent who is a senior officer of the Sri Lanka Administrative Service. The government agent performs manifold functions. He is responsible for the general administration and development of the district and is entrusted with the collection of revenue, as well as with such varied tasks as the disposition of the State lands in accordance with government policy and the discharge of functions relating to agriculture and food production. The various provinces and districts and their areas are given in table 2.

Table 2. Provinces and administration districts

Province	District	Area (sq mi) (excluding large inland waters)	
Western	Colombo	792	1,412
	Kalutara	620	
Southern	Galle	646	2,128
	Matara	481	
	Hambantota	1,001	
Northern	Jaffna	965	3,355
	Mannar	958	
	Vavuniya	1,432	
Central	Kandy	914	2,158
	Matale	770	
	Nuwara Eliya	474	
Eastern	Batticaloa	952	3,116
	Trincomalee	1,011	
	Amparai	1,153	
North Central	Anuradhapura	2,753	4,067
	Polonnaruwa	1,314	
North Western	Kurunegala	1,843	2,992
	Puttalam	1,149	
Sabaragamuva	Kegalla	642	1,892
	Ratnapura	1,250	
Uva	Badulla	1,088	3,843
	Monaragala	2,755	

Source: Government of Sri Lanka, *Statistical Pocket Book of Sri Lanka (Ceylon) 1974*, (Colombo, Department of Census and Statistics, 1975), table 1.

^{11/} O.E.R. Abhayaratne and C.H.S. Jayewardene, *Fertility Trends in Ceylon* (Colombo, The Colombo Apothecaries Co., Ltd., 1967), p. 13.

G. MINERAL RESOURCES

Sri Lanka lacks deposits of mineral fuels, precious and base metals. However, its resources of titanium minerals, deposits of rare earth and graphite, resources of ceramic raw materials and gem bearing gravels are of sufficient size to play an important role in the country's economy.

The major economic minerals mined in Sri Lanka are graphite, gemstones, mineral sands (ilmenite, monazite, rutile, silica and small amounts of zircon), industrial clays, limestone, feldspar and quartz. Graphite mining is by far the largest and most important mining industry and almost the entire production of graphite comes from vein deposits occurring along certain well marked zones or belts in the southwest sector of the island. Except for the quantity used locally for the manufacture of pencils, the mined graphite after cleaning, dressing and grading is exported mainly to Japan, the United States of America and the United Kingdom. The total quantity of graphite exported in 1970 was 9,631 long tons.

A large variety of precious and semi-precious stones occur within layers of old alluvium and river gravels of quarternary age in the valleys of the Ratnapura District and also in Okkampitiya and Elaheera areas. The most important gemstones are the delicately coloured varieties such as sapphire, ruby, chrysoberyl, topaz, spinel, garnet, zircon and tourmaline. Moonstones are mined from pegmatites in the Ambalangoda area.

The minerals ilmenite, rutile, zircon, monazite and garnet occur in various proportions in the beach sands of the island. The first three are exploited from an extensive black sand deposit at Pulmoddai, north of Trincomalee. Monazite is obtained from the black sands of the southwest coast. Silica sands found in very large quantities in Marawila-Nattandiya-Madampe areas are mainly used in the manufacture of glass.

Alluvial clays used for the manufacture of bricks and tiles occur in the flood plains of all major rivers of the island, the most extensive deposits being found in the valleys of the Maha Oya, the Kelani Ganga and the Kalu Ganga. Extensive deposits of kaolin formed by the decomposition of feldspar-rich rocks are found in Boralesgamuwa and surrounding areas where it is exploited for use in the ceramic, paper and insecticide industries. A third type of industrial clay is that suitable for the manufacture of cement, large

deposits of which are found in Murunkan in Mannar District and in Ralmadu in Puttalam District.

Very large reserves of limestones both of the sedimentary and crystalline type occur in various parts of the island. The sedimentary limestones largely used as a raw material for the manufacture of cement are found in extensive quantities in the Jaffna Peninsula and north of Puttalam. The purer crystalline limestones are burnt extensively for the manufacture of lime, while the more dolomitic limestones are crushed and used with fertilizers to correct magnesia deficiency in soils. Coral limestones are burnt for lime in the southwestern coastal belt of the island and on the east coast. Pure feldspar and crystalline quartz are used in large quantities in the ceramics and glass industries.

Minerals found as deposits of economic potential but not being worked at present are iron ore, peat and garnet sand.

H. TRANSPORT AND COMMUNICATIONS

The inland transport system consists of a network of roads and railways. Though the rivers flow from the mountains to the sea, they have no navigational significance. The first modern road was built in 1821 when the British opened up the road from Colombo to Kandy. Railway development began in 1864. The roads and railways were both linked with the growth first of coffee plantations and much later with the development of tea and rubber plantation agriculture.

A number of factors have tended to favour road transport. First, Sri Lanka's topography, with the mountainous region in the centre surrounded by coastal plains all round is more suitable for road transport. Secondly, as mentioned earlier, the maximum length and width of the country are only 270 miles and 140 miles respectively. Thus population and economic centres are in most cases separated by only short distances, rendering road transport more expedient. There is also the fact that about three fifths of the country's population is concentrated in the wet zone. Finally, the nature and volume of economic activity is also relatively more favourable to road transport. Tea, rubber and coconuts which are Sri Lanka's main export crops are not significantly seasonal nor do they move in sufficiently large volumes to generate long distance rail movements. Domestic industry is also concentrated largely in Colombo and its environs and its products along with imported manufactures find a large part of their markets in the southwest. The distances to be covered are short and, the daily volumes of output not being very sub-

stantial, products are more easily carried by road than by rail.

It is therefore not surprising that in Sri Lanka, the ton-miles by road are about four times those by rail. At the same time, the Ceylon Transport Board, which operates all the bus services in the country, carries about nine times as many passengers for two and half times as many passenger miles as the Government Railway.

Compared with many developing countries, Sri Lanka has an extensive road network. There are about 13,000 miles of road of which 10,000 miles are motorable. Of them, nearly 2,200 miles are classified as national roads or trunk roads. The provincial roads or main roads total about 3,000 miles while the remaining are district roads which account for about 7,800 miles.

The railway system of the country may be grouped into those serving (a) the flat low country; (b) the central hill country areas, and (c) the Kelani Valley region. All sections of the railway, except the Kelani Valley Line, are of broad gauge. The total length of the railway line open for traffic is 953 miles of which 866 miles are broad-gauge and 87 miles are narrow-gauge. The railway in Sri Lanka is state-owned and -controlled, the management being vested in the Ceylon Government Railway Department.

Sri Lanka has three large ports, Colombo, Trincomalee and Galle, able to take in deep-sea vessels. Colombo has been of overwhelming importance as it lies on the main shipping lanes to east Asia, the Pacific and Australia and is also the centre of the country's economic life. Trincomalee is one of the best natural harbours in eastern Asia but traffic is low as it is remote from the main centres of economic activity.

There are two international airports - Ratmalana, 10 miles south of Colombo, and Katunayaka, 20 miles north of Colombo.

I. THE ECONOMY

For over a 100 years until 1950, the economy of Sri Lanka was a typical dual economy with a modern and a traditional sector existing side by side in virtual isolation from each other. The modern sector centred on the large commercial plantations - tea, rubber and coconuts. The traditional sector was characterized by the peasant cultivation of paddy and of other minor food crops. Foreign capital, mainly British, and Indian immigrant labour played a signifi-

cant role in the development of the plantation industry and the consequent development of a vast array of supporting financial and commercial establishments in Colombo and in ancillary towns in the wet zone. The traditional sector comprised essentially the rural areas (villages) in both the wet and dry zones, and its activities included traditional crafts and service occupations. The modern sector did not produce food for local consumption while the traditional subsistence sector did not cater for an organized domestic market. The two sectors differed radically from each other and there was hardly any economic interrelations between them.^{12/}

During British rule, "the agricultural policy of the Government was based on encouraging the growth of the plantations. These foreign-owned, foreign-managed enterprises produced agricultural commodities for export. Since the capital was mainly British, it was natural that these enterprises were favoured at that time. The economy as a whole, of course, benefited by their existence. The foreign trade increased. Government revenue rose. Ceylon became integrated into a world market economy. Hospitals, roads and schools were built. All these were the direct results of the plantations".^{13/}

These developments, however, had no impact on the traditional sector which, due to its semi-subsistence character, grew very slowly and in isolation from the modern sector. No concerted attempt was made by the government to encourage the peasant to produce a surplus for sale. The local rice grower was not given much opportunity to improve this cultivation. His yields were low and his production was just sufficient to meet his needs. Large quantities of food had therefore to be imported from abroad to meet the needs of the growing population.

Since achieving independence in 1948, the Government of Sri Lanka has played an active and important role in the country's development compared with the passive role of the colonial government. The chief objectives of economic planning in the country have been (a) the diversification to relieve the heavy dependence on plantation agriculture, and

^{12/} For detailed discussion see: Gamani Corea, *The Instability of an Export Economy*, (Colombo, Marga Institute, 1975); Donald R. Snodgrass, *Ceylon: An Export Economy in Transition*, (Homewood, IL, Richard D. Irwin, Inc. 1966); and P.J. Richards and E. Stowtjesdijk, *Agriculture in Ceylon until 1975*, (Paris, Development Centre, OECD, 1970).

^{13/} Government of Ceylon, *Six-Year Programme of Investment, 1954/55 to 1959/60*, (Colombo, Planning Secretariat, July 1955), p. 168.

(b) the integration of the economy to eliminate its dualism. To this end, emphasis has been increasingly placed on the development and expansion of the peasant sector and also on the promotion of industries in recent years.

The land policy of the Government has been directed towards the maximum utilization of available land resources in a manner that would increase the supplies of essential food items, expand employment opportunities and relieve rural landlessness. These objectives are being achieved through (a) the provision of irrigation facilities to lands not provided with water earlier and the colonization of such areas with peasants from the more over-crowded areas, and (b) alienation of land to middle-income citizens for speedier agricultural development. In addition to expansion of cultivable land, increased production is also being achieved by increasing yields per unit of cultivated land through the application of fertilizers, use of high yielding strains and adoption of modern cultural practices.

Industrialization is largely a post-independence phenomenon in Sri Lanka. The object of industrialization as mentioned earlier has been to diversify the economy in order to reduce the country's dependence on imports as well as to develop new lines of exports and to provide avenues of employment for the increasing workforce. The current industrial policy is thus designed to foster industrial growth in such a manner as to facilitate the maximum use of indigenous raw materials and to develop within the public sector such basic and heavy industries and also a suitably trained workforce as would give depth to industrial development and general growth in the economy. The State-sponsored industries are cement, ceramics, chemicals, paper, plywood, oils and fats, fertilizer, leather products, mineral sands, hardware, sugar, textiles and tyre. In May 1966, an Industrial Development Board was set up to provide necessary facilities and assist in the encouragement and development of industries in both the private and public sectors of the economy.

Despite these developments, agriculture continues to play a dominant role in the economy of the country. It is true that the proportionate share of agriculture in total gross domestic product has declined from 38.7 per cent in 1959 to 32.8 per cent in 1973 (table 3). Yet even today over 50 per cent of the workforce is engaged in agriculture and related occupations, while nearly 90 per cent of the country's export income is derived from the three major crops—tea, rubber and coconuts. There has, however, been

significant changes in the composition of the agricultural output over the past two decades. While the output of the plantation export sector has increased slowly, the output of paddy for domestic consumption has nearly doubled in the last decade. This has been followed by significant increases in the production of subsidiary food crops such as onions, chillies and potatoes, which had hitherto been mainly obtained through imports.

It is also evident from table 3 that in the past 15 years or so, industry has increased its share of the gross domestic product, but it still remains at around 13 per cent. The growth of the industrial sector has also been aided by restrictions imposed on imported industrial goods. In recent years, the very sharp increase in import prices adversely affected the industrial sector as a whole on account of its excessive dependence on imported raw materials. Several industries, particularly in the metals and chemicals groups, also experienced difficulties in getting adequate supplies of raw materials.

Sri Lanka is an open economy in which the dependence on foreign trade is very high. The value of imports and exports together constitute over 50 per cent of the country's gross national product. Imports have averaged Rs 2,100 million *per annum* during 1960-1970, and food imports which include rice, flour, sugar, milk products, fish and pulses, have accounted for about 40 to 45 per cent of all imports. In recent years there has been a decline in export earnings due to a sharp drop in the world market prices of tea and rubber. Since 1958 there has been a persistent deficit in the current account of the balance of payments.

The inadequate rate of economic growth (averaging about 4 per cent for the period 1960/1970), the low rate of domestic savings (about 12 per cent), the worsening balance of payments, an expanding population and a rapidly increasing workforce with a rate of unemployment as high as 18 per cent are the main problems challenging the development efforts of the country. The Government's Five-Year Plan^{14/} for the period 1972-1976 aimed at the diversification of agriculture with particular emphasis on peasant agriculture, the expansion of industry, the intensification of import substitution and the development of new exports, all of which would lay the basis for the desired structural changes in the economy.

^{14/} Government of Ceylon *The Five-Year Plan, 1972-1976*, (Colombo, Ministry of Planning and Employment, 1971).

Table 3. Gross domestic product by sectoral origin at current factor cost prices - selected years, 1959 to 1973

Sector	Composition in percentages											
	1959	1960	1961	1964	1966	1967	1968	1969	1970	1971	1972	1973
Agriculture, forestry and fishing	38.7	37.7	38.7	36.2	34.5	35.7	37.0	34.5	33.8	32.5	32.2	32.8
Mining and quarrying	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.6	0.7	0.7	0.7	2.1
Manufacturing	11.5	11.2	11.2	11.2	11.1	10.8	11.7	12.1	12.2	12.6	13.5	13.2
Construction	4.8	4.5	4.4	4.2	3.8	4.2	5.1	5.8	6.4	6.3	5.6	5.3
Electricity, gas and water	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3
Transport, storage and communications	9.1	9.3	9.1	9.6	10.7	10.5	9.1	9.8	9.8	10.1	10.4	10.0
Wholesale and retail trade	13.5	14.8	13.6	15.7	15.9	14.6	13.6	15.6	15.3	15.2	15.5	16.1
Banking and insurance	0.9	0.8	0.9	1.0	1.1	1.4	1.4	1.3	1.3	1.4	1.5	1.4
Ownership of dwellings	3.4	3.4	3.7	3.8	4.1	4.2	3.7	3.6	3.4	3.4	3.2	2.8
Public administration	5.1	5.0	5.1	5.0	5.2	5.0	4.7	4.3	4.4	4.6	4.5	4.3
Services	12.3	12.6	12.6	12.6	12.9	12.9	13.0	12.2	12.5	12.9	12.6	11.7
Total gross domestic product	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Computed from *Annual Report of the Monetary Board 1973* (Colombo, Central Bank of Ceylon, 1974), appendix III, table 4.

CHAPTER I

SIZE AND GROWTH OF TOTAL POPULATION

A. POPULATION SIZE

1. Population in ancient times

Estimates regarding the size, composition, growth and distribution of the population of Sri Lanka in ancient times are rendered suspect by the absence of any reliable data. Population censuses, as we understand them, were virtually non-existent.^{1/}

The administrative systems prevailing during the times of the ancient kings may have required the maintenance of statistical records for purposes of tax collection, recruitment into the army and labour force, or for the provision of various services etc. However, such records were not stored in any archives nor have they been used by contemporary writers. Under the circumstances, there has been much speculation regarding the number of people who inhabited the country prior to the era of modern scientific censuses. A former census superintendent observed that "In no particular is ancient history more inaccurate than in its statements as regards population. The absence of any reliable data led to theories of the superior populousness of antiquity, which have now been demonstrated to be baseless. It has been shown from the histories of the West as well as of the East that otherwise reliable chroniclers have been guilty of the grossest exaggeration in dealing with numbers".^{2/}

a. Evidence from chronicles

The belief that the population of Sri Lanka was very large during the period of the ancient kings stems from two sources: (a) the ancient chronicles of the country, and (b) ruined cities, monuments and irrigation works. The ancient chronicles contain very few references to the total number of people; but the occasional references in these records to the number of priests, soldiers, villages etc. have often formed the basis for the estimates regarding the total popu-

lation. Some of these references are listed below:

Source and approximate date	Statement
1. Mahawamsa X-91, 400 B.C.	1,000 sweepers (candalas) in the city of Anuradhapura
2. Mahawamsa XVII-61 300 B.C.	30,000 Buddhist priests
3. Mahawamsa XIV-2 300 B.C.	40,000 soldiers in King Devanampiya Tissa's army
4. Mahawamsa XXII-15 150 B.C.	100,000 Buddhist priests. 90,000 Buddhist priestesses.
5. Mahawamsa XXIV-32 150 B.C.	60,000-strong army of King Dutu Gammunnu
6. Pujavaliya, p.35 A.D. 1180	Parakrama Bahu's army for the invasion of India consisted of 2,125,000 warriors after selection of 10 out of every 100
7. Rajavaliya, p. 65 A.D. 1300	Number of villages stated to be 1,470,000
8. Rajaratnaciri, p. 112 Date not known	number of villages stated to be 1,541,000
9. Ancient ola manuscript, ^{3/} Date not known	400,000 villages to each of the three divisions and a total population of 70.5 million

The figures given in the various references certainly create an impression of splendour, power, opulence and a very large population. For instance, the reference in Pujavaliya that Parakramabahu's army, raised for the invasion of India, consisted of 2,125,000 warriors selected on the basis of 10 for every hundred, implies a total male population of over 21 million. Assuming an equal proportion of women, the total population at that time would have been over 40 million. It is highly probable that these figures were greatly exaggerated. On the basis of only a million villages, two houses per village and five persons per household, a former census superintendent estimated the population of Sri Lanka

^{1/} The 1901 census superintendent observed: "There is no evidence that the native rulers of Ceylon made a periodical enumeration of their subjects. A census was probably not known, nor the necessity for it felt." P. Arunachalam, *The Census of Ceylon 1901*, vol. I (Colombo, Government Record Office, 1902), p. 23.

^{2/} E.B. Denham, *Ceylon at the Census of 1911 Being the Review of the Results of the Census of 1911* (Colombo, Government Record Office, 1912), p. 8.

^{3/} Copied from a manuscript "kept in the temple town of Tissawa in Seven Korales" and cited by E.B. Denham, *op.cit.*, p. 9.

in early fourteenth century A.D. at 10 million.^{4/}

b. Arguments based on ruins

The vast irrigation works and the ruins of ancient cities have led many British writers to believe that the population of Sri Lanka at the height of its prosperity must have been many times as large as it was at the time they wrote. The best well-known estimate is that of Tennent who estimated that the population of ancient Sri Lanka must have been at least 17 million. "The labour necessary to construct one of these gigantic irrigation works is in itself an evidence of local density of population; but their multiplication by successive kings, and the constantly recurring records of district after district brought under cultivation in each successive reign, demonstrate the steady increase of inhabitants and the multitude of husbandmen whose combined and sustained toil was indispensable to keep these prodigious structures in productive activity.....No one who has visited these regions, now silent and deserted, once homes of millions, can hesitate to believe that when the Island was in the zenith of its prosperity, the population of Ceylon must of necessity have been at least ten times as great as it is at present day".^{5/}

An earlier and more cautious estimate is that made by Forbes. He wrote "... but let those who doubt that an immense population formerly existed in Ceylon compare the prodigious bulk of the ancient monuments of Anuradhapura, Mayam and Polonnaruwa, with those erected by the later kings of the Island; then let them compare singly the remains of Kalaa tank, the Kaudela tank, or many others, with any or all public works accomplished in Ceylon for the last five hundred years". He further observed "I think no one who examines the great and general remains that evince the extent of the population once scattered over Ceylon will be inclined to reckon that the number that must have been at that time in the Island at less than 5 million people".^{6/}

4/ P. Arunachalam, *op.cit.*, p. 23. He argued that his estimate "can hardly be deemed an extravagant estimate". He pointed out that the decline in the population "was due to the troublous times of foreign war and internecine strife that preceded the establishment of the British dominion. How rapidly a population may decline was illustrated by Germany during the Thirty Years' War (1618-1648). The population fell from twenty to less than ten million in that period".

5/ J.E. Tennent, *Ceylon*, vol. 1, part IV (London, Longmans Green, 1859) p. 421, quoted in N.K. Sarkar, *The Demography of Ceylon* (Colombo, Ceylon Government Press, 1957), p. 7.

6/ Jonathan Forbes, *Eleven Years in Ceylon*, vol. I (London, 1840), p. 237, quoted in N.K. Sarkar, *op.cit.*, p. 8.

Several others have also attempted to estimate the population in ancient Sri Lanka on similar lines. For instance, Knighton estimated the population at 7.5 million while Pridham put it at 6 million. However, the various estimates have been dismissed by Denham as "pure guess work, based only on the extent of the country and the signs of its ancient population, and little better than the Emperor Heliogabalus' estimate of the greatness of Rome from 10,000 pounds of cobwebs having been found in the city".^{7/}

c. Limitations

Estimates of Sri Lanka's ancient population, based on the evidence of ruins, suffer from severe limitations. In the first instance, it must be noted that the country was not evenly populated at any period. When "mighty kingdoms" existed at Anuradhapura and Polonnaruwa, the coastal districts were almost unpopulated, and it will therefore not be correct to assume that other parts of the country were as densely populated as the area round Anuradhapura and Polonnaruwa. Secondly, as pointed out by Denham, "If ancient Anuradhapura was reconstructed from the ruined city one views today, the extent within the city walls is undoubtedly considerable, but so is the amount of space which would be taken up by religious buildings, temples, shrines, monasteries, sacred *pokunas*, baths, lakes etc.. The space actually occupied by streets of shops and inhabited buildings, must have been comparatively small."^{8/} Thirdly, while it is admitted that a wealthy civilization existed in Anuradhapura, the buildings were erected over a period of at least 1,300 years. Further, there is no evidence that they were all in use at the same time. Fourthly, "the Mahavansa and other religious documents are not good evidence about the condition of the people, for they necessarily tell a one-sided story".^{9/}

7/ E.B. Denham, *op.cit.*, p. 9. However, the 1946 census superintendent considered this to be an unfair remark because "the foolish frolicsomeness of a dissolute Roman Emperor, who had more rational means at hand to assess the populousness of his Imperial city if only he had been minded to use them, could hardly be placed with justice on the same level as the reasoned general conclusions of these writers as regards the extent of the population in those ancient times based as they are on the best evidence available", A.G. Ranasinha, *Census of Ceylon 1946, vol. I, part I, General Report* (Colombo, Department of Census and Statistics, 1950), p. 54.

8/ E.B. Denham, *op.cit.*, p. 9.

9/ Sir Ivor Jennings, "The general report of the census", *The University of Ceylon Review* (Colombo), October 1950, p. 210; quoted in N.K. Sarkar, *op.cit.*, p. 9.

The conclusions drawn from the irrigation works are more rhetorical than reasoned. Any population estimates based on irrigation works must take into consideration "the number of labourers employed at any given time (that is a list would be necessary of works going on at that time and the number of men employed on each), the proportion of local population available for labour; the quantity of imported labour; while among other points, the question of the food supply of the labour force would require investigation."^{10/} Further, there is no evidence that any of the major irrigation works were constructed under one king or at one time, and that they were all in use at the same time. It is also likely that as bigger tanks were constructed and used, the smaller ones were deprived of their water supply and were allowed to silt up. Thus in the absence of any evidence regarding the period over which the tanks were constructed, the type of labour used and the technology employed, estimates of the population of ancient Sri Lanka have to be given little weight. Nevertheless, "the subject is full of interest and deserves detailed research, particularly as regards the sources of food supply and the industrial activities of the people, but it is doubtful whether the data for such an investigation would be found to be available".^{11/}

d. Sarkar's estimates

A recent attempt to estimate the ancient population of Sri Lanka is that made by Sarkar,^{12/} who prepared two estimates, labelled maximum and moderate, on the basis of the country's capacity for food production. It was assumed that rice was the staple diet of the people then as it is today, and that the country was self-sufficient in this commodity. Assumptions were also made in regard to the possible extent of land brought under paddy cultivation, the average yield per unit of cultivated land, the quantum of paddy set apart for seed purposes and the *per capita* consumption of rice.

The maximum population estimate was based on the following assumptions:

(a) The entire area available for paddy was in fact cultivated. This extent was estimated as 2,329

thousand acres of which 1,527 thousand acres were irrigated while 802 thousand acres were in the wet zone;

(b) There were no substantial changes in techniques of paddy cultivation, and changes that have occurred have tended to offset one another, some tending to increase yield and other tending to decrease it;

(c) The average yield per acre then was the same as in the 1940s, that is, 20 bushels per acre;

(d) The proportion set apart for seed purposes was 1/13th part of the total paddy production; and

(e) *Per capita* consumption of rice was 5.07 bushels *per annum*.

It was thus estimated that the irrigated paddy area would support a population of 5.56 million and the wet zone paddy area would support 2.91 million and thus the total maximum population was placed at 8.47 million.

For the moderate estimate, it was assumed that since all the irrigation tanks would not be functioning at the same time, only 75 per cent of the available area in the irrigated region was actually cultivated. The acreage in the wet zone was not affected by this assumption. The assumptions regarding yield and *per capita* consumption were the same as those for the maximum estimate. On the basis of the alternate assumption, it was estimated that the irrigated area would support 4.17 million persons and the wet zone 2.91 million persons giving a total estimated population of 7.08 million.

The estimation procedure adopted by Sarkar is more systematic and reasoned than that of earlier writers. Though assumptions had to be made by him in regard to yield per acre, *per capita* food consumption etc. the resultant estimates are better than those discussed earlier. "There are, of course, a variety of sets of assumptions, no less valid than those advanced here, from which alternative estimates of the population of ancient Ceylon could be derived, but their iteration would serve no useful purpose. The significant conclusion is that, from the availability of cultivable paddy land, a population of some 7 or 8 millions at most could have been supported in ancient Ceylon".^{13/}

^{10/} L.J.B. Turner, *Report of the Census of Ceylon 1921*, vol. I, part I (Colombo, Government Record Office, 1923), p. 4.

^{11/} *Ibid.*, p. 4.

^{12/} N.K. Sarkar, *op.cit.*, pp. 11-18.

^{13/} *Ibid.*, p. 18.

e. Summary

The various estimates relating to the population of Sri Lanka in ancient times are as follows :

Author	Estimated population (millions)
Tennent	17.5
Knighton	7.5
Pridham	6.0
Forbes	5.0
Arunachalam	10.0
Sarkar	8.47
	7.08

2. Population in modern era

a. Portugese and Dutch period (1505-1796)

It would appear that during the Portugese period (1505-1640) no censuses were carried out in Sri Lanka, nor were any estimates of the population made. The Dutch who seized power from the Portugese regarded censuses as merely useful for taxation purposes.^{14/}

The first enumeration of the population of Sri Lanka was undertaken in 1789 on the orders of Governor Van der Graff. This census, which was confined to the inhabitants of the maritime provinces of the Dutch East India Company, gave a total of 817,000 persons. It is suspected that there was serious under-enumeration as the count was made for purposes of taxation. The population of the country as a whole was commonly believed to be approximately 2 million at that time, but a Dutch officer, Bournard, believed that the population was about 1.5 million while Bertollacci estimated it to be a little less.^{15/}

b. British period (1796-1948)

The chief source of data on the population of Sri

^{14/} On the basis of a translation of the relevant documents, Denham says "In the instructions from the Governor General and Council of India to the Governor of Ceylon (1656-1665) it is stated that the general lists furnished by the Desaves have become unreliable and a new census of the people is under consideration — against the name of each individual may be added the present value of his estate, so that each person may be charged accordingly. This census does not appear to have been taken". E.E. Denham, *op.cit.* pp. 10-11.

^{15/} Anthony Bertolacci, *A View of the Agricultural, Commercial and Financial Interests of Ceylon* (London, 1817), p.62. Bertolacci held high offices in Ceylon under the British Government from 1800 to 1816 and obtained the information as to the census from an old resident, Mr. Bournard, an officer of the Dutch Government who passed into the British Service.

Lanka in the early British period is the Ceylon Blue Book, copies of which are available since 1821. Till 1862, when it first appeared as a printed volume, the Blue Book contained monthly establishment returns, and statements of revenue and expenditure. The Blue Books since 1863 give a tabular statement of the annual population, generally from 1823. It would appear that the population figures up to 1826 were obtained by adding the population of the maritime provinces obtained at a census in 1814 to those for the Kandyan provinces obtained in the 1821 census,^{16/} and then adding to this total the number of king's troops as known in the year of record. The 1827 Blue Book gives the estimates of the population published in that year,^{17/} and thereafter for several years the population data was based on the returns of the collectors or government agents.

The population as enumerated at the three censuses are as follows:

Year	Area covered	Total	Male	Female
1814	Maritime provinces	492,083	250,542	241,541
1821	Kandyan provinces	256,835	138,121	118,714
1827	Ceylon	885,574	474,898	410,676
	Maritime provinces	595,105	316,059	279,046
	Kandyan provinces	290,469	158,839	131,630

Source: L.J.B. Turner, *Report of the Census of Ceylon 1921*, vol. I, part I (Colombo, Government Record Office, 1923), p. 6.

It is not known to what degree reliance could be placed on the censuses of 1814, 1821 and 1827. In regard to the 1827 census, Sarkar observed, "The results of this census are unlikely to be accurate as it followed a rebellion, only suppressed with extreme barbarity and in which innumerable villages in the Kandyan provinces were devastated. The method and the exact date or dates of enumeration are not known".^{18/}

There is no indication that any actual census was taken between 1821 and 1871 — the date of the first

^{16/} As noted earlier, the Kandyan provinces did not form part of the British possessions until 1815.

^{17/} According to the 1901 census superintendent, "The earliest enumeration of Ceylon of which there is record was made in 1824 during the administration of Sir Edward Barnes, who directed that a return be prepared of the population of each district on the lines laid down by Sir Robert Brownrigg but with additional information as to the number of slaves. This return which took three years to prepare was published in 1827", P. Arunachalam, *op.cit.*, p. 23.

^{18/} N.K. Sarkar, *op.cit.*, p. 19.

census proper. However, as mentioned earlier, annual estimates were made from the returns of the government agents and published in the Blue Book. In 1835, a detailed statement prepared on the orders of the then governor, Sir Robert Wilmot Horton, gave the total population of the island as 1,241,825. The population in 1847 was estimated to be about 1.5 million. In 1857, Sir Emerson Tennent estimated the population at 1,697,975, exclusive of the military and their families. "The method of compiling the returns varied from district to district and depended on the whims of the agents. In most cases, the returns were based on data supplied by the village headman; although occasional efforts to take a sample census were made in a few villages. Governor Torrington attempted to collect exact information for the Blue Book but his efforts caused considerable dissatisfaction among the people and were mentioned by Tennent in his evidence before the Select Committee as being one of the causes of the 1848 revolt. The Blue Book figures thus remained in most cases mere guesses."^{19/}

However, a systematic and scientific basis for enumerating the country's population was laid down in 1869 with the passing of the Census Ordinance (Ordinance No. 5 of 1869)^{20/} which provided for the taking of a census from time to time when the Governor should deem necessary. The first census, in terms of this Ordinance, taken in 1871 showed a population of about 2.4 million. Though this census count was subject to many defects,^{21/} it smoothed the way for the subsequent censuses. Since 1871, censuses were taken during the British period at regular intervals of 10 years until 1931. The census scheduled for 1941 was, due to the intervention of the Second World War, taken in 1946. The census of 1881 showed a population of 2.8 million while about 3 million persons were enumerated in the census of 1891. According to the census of 1901, the population of Sri Lanka (exclusive of military and shipping) had grown to 3.6 million. The population enumerated in the 1911 census was 4.1 million and the 1921 census recorded a population of 4.5 million.

As elsewhere, the economic depression of the late 1920s and early 1930s restricted the scope of

^{19/} *Ibid.*

^{20/} Since then a number of amending ordinances have been passed. For details see chapter XVII.

^{21/} For detailed discussion see annex II.

administration, and the census of 1931 was limited to a detailed enumeration of the city of Colombo and a head count only of the remainder of the island's population. The population recorded at this census numbered 5.3 million. The population increased to 6.7 million according to the 1946 census.^{22/}

c. Post-independence period (after 1948)

In the first census of independent Sri Lanka, carried out in 1953, a population of 8.1 million was recorded. The next census taken 10 years later showed a population of 10.6 million. The latest census was taken in October 1971 and the population recorded numbered 12.7 million.

Annual estimates of the total population have also been prepared during the intercensal periods based on the census data and the vital statistics of the subsequent years (see annex III, table 1).

d. International comparison

The populations of ESCAP countries according to the censuses taken around 1971 are shown in table 4. In terms of numbers, the 1971 population of Sri Lanka was about 93 times the population of Brunei; over thrice the population of Hong Kong; nearly 1.1 million more than the population of Nepal and almost approximated the population of Australia in that year. On the other hand, the 1970 population of the Republic of Korea was about two and a half times the population of Sri Lanka and the 1971 Indian population was over 43 times larger.

The estimates of total population for 163 countries as of mid-1973^{23/} show that Sri Lanka, with an estimated population of 13.5 million, ranked eighteenth among the Asian countries and thirteenth among countries constituting the ESCAP region. The population of China, estimated at 799.3 million in 1973, was about sixty-three times that of Sri Lanka. On a global basis, there are only two countries, viz. Australia (13.3 million) and Netherlands (13.4 million), whose total population almost equalled that of Sri Lanka. The estimated population of the United Republic of Tanzania (14.3 million) in East Africa and of Peru (14.9 million) in tropical South America, however, were only slightly larger.

^{22/} Exact census counts are shown in table 5.

^{23/} *1973 World Population Data Sheet*, (Washington D.C., Population Reference Bureau Inc., 1973).

Table 4. Population of countries in the ESCAP region, censuses between 1969 and 1974

Country	Census year	Enumerated population
Australia	1971	12,755,638
Bangladesh	1974 ^{a/}	71,479,071
Brunei	1971	136,256
Cook Islands	1971	21,317 ^{b/}
Hong Kong	1971	3,948,179
India	1971	547,949,809
Indonesia	1971	118,309,059 ^{b/}
Japan	1970	104,665,171
Malaysia	1970	10,319,324 ^{c/}
Mongolia	1969	1,197,600
Nepal	1971 ^{a/}	11,555,983
New Zealand	1971	2,862,631
Pakistan	1972	64,892,000 ^{b/}
Papua New Guinea	1971	2,489,936 ^{b/}
Philippines	1970	36,684,486 ^{d/}
Republic of Korea	1970	31,465,654 ^{e/}
Samoa	1971	143,547
Singapore	1970	2,074,507 ^{f/}
Solomon Islands	1970	160,998
Sri Lanka	1971	12,689,897
Thailand	1970 ^{a/g/}	34,397,374

Sources: Figures for Sri Lanka from *Census of Population 1971* (Colombo, Department of Census and Statistics, 1975), table 1; Bangladesh, Cook Islands, Hong Kong and Pakistan from *World Population 1975*, (Washington D.C., U.S. Department of Commerce, Bureau of the Census, June 1976); others from United Nations, *Demographic Yearbook 1974* (Sales No. E/F.75.XIII.1), table 6.

Notes: a/ *De jure* population.

b/ Provisional estimates.

c/ Excludes transients afloat and persons in institutions.

d/ Excludes population in institutions.

e/ Excludes foreigners and diplomatic personnel of the Republic of Korea and their dependants stationed outside the country.

f/ Excludes transient afloat and non-locally domiciled military and civilian services personnel and their dependants.

g/ Excludes adjustment for underenumeration at latest census.

B. POPULATION GROWTH

1. Growth rates

The interesting feature about Sri Lanka's demographic situation is not so much the size of the population as the changes that have characterized the rates as well as the components of population growth over the past 100 years. Between 1871 and 1971, the country's population increased by about 10.3 million

or by about 430 per cent. However, the population did not grow at a uniform rate throughout this period. The percentage increase as well as the average annual rates of growth, has shown appreciable variations from one intercensal period to another, as is evident from table 5.

During the 60-year period 1871-1931, when censuses were held at regular intervals of 10 years, the intercensal percentage increase in population had ranged from a low of 9.0 per cent during the years 1881-1891 to a high of 18.6 per cent in the subsequent decade. The highest intercensal increase, 30.7 per cent, was, however, recorded for the 10-year period 1953-1963. Since the time intervals of the various intercensal periods have not been equal, the intercensal percentage increases do not give a correct picture of the trends in Sri Lanka's population growth. A more accurate measure, however, is the average annual growth rate calculated in respect of each intercensal period. According to these rates (table 5), the increase in Sri Lanka's population has varied from less than 1.0 per cent *per annum* during the decades 1881-1891 and 1911-1921 to an all-time high of 2.8 per cent during the seven-year period 1946-1953.

It will be seen that the average annual rates of population growth since 1946 have been substantially higher than the rates for the intercensal periods prior to 1946, "The significance of these rates will be readily appreciated when one realises the fact that it took 75 years for our population to increase by about 4 million between 1871 and 1946, but it took only 17 years for the population to increase by another about 4 millions between 1946 and 1963."^{24/} Figure 3 illustrates the pattern of population growth in Sri Lanka from 1871 to 1971.

2. Growth factors

The growth of Sri Lanka's population over the years has been influenced by two factors, viz. natural increase (excess of births over deaths) and net migration (difference between the number of immigrants and emigrants). However, the relative importance of these two components has varied over time. This is illustrated by table 6 which shows the proportionate contribution of natural increase and net

^{24/} S. Selvaratnam "The demographic revolution in Ceylon", Presidential Address, Social Sciences Section, Ceylon Association for the Advancement of Science, 1970, in *Proceedings of the Twenty-Sixth Annual Sessions of the Ceylon Association for the Advancement of Science* (Colombo, The Ceylon University Press, 1971), p. 257.

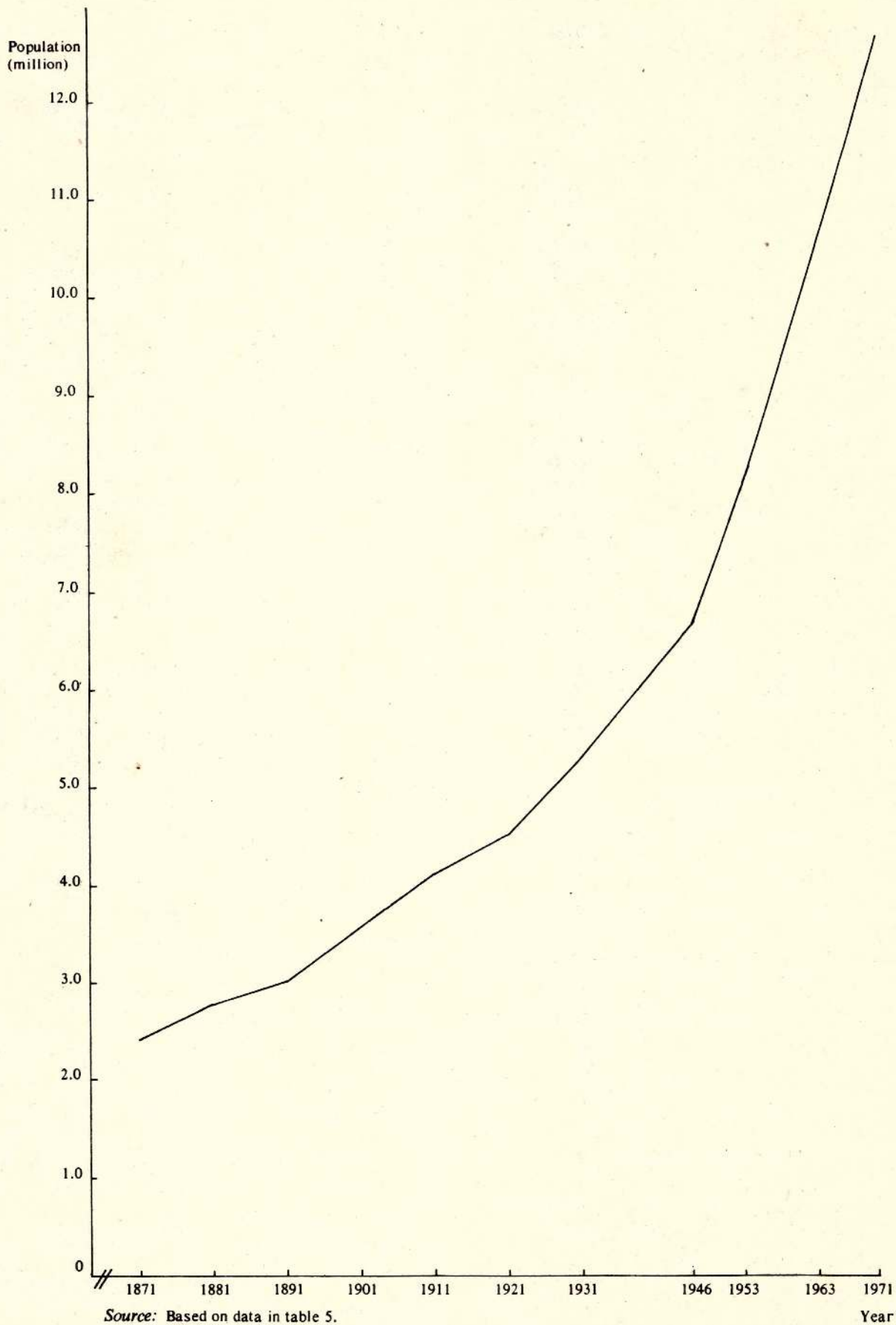


Figure 3. Population growth in Sri Lanka, 1871-1971

Table 5. Population of Sri Lanka in census years 1871 to 1971, intercensal increase, percentage increase and average annual growth rates

Year and date of population census	Enumerated population	Intercensal increase	Percentage increase	Average annual growth rates (percentage)
1871 March 27	2,400,380	-	-	-
1881 February 17	2,759,738	359,358	15.0	1.42
1891 February 26	3,007,789	248,051	9.0	0.86
1901 March 1	3,565,954	558,165	18.6	1.72
1911 March 10	4,106,350	540,396	15.2	1.42
1921 March 18	4,497,854	391,504	9.5	0.91
1931 February 26	5,306,863	809,009	18.0	1.68
1946 March 19	6,657,339	1,350,476	25.4	1.52
1953 March 20	8,097,895	1,440,556	21.6	2.84
1963 July 8	10,582,064	2,484,169	30.7	2.65
1971 October 9	12,689,897	2,107,833	19.9	2.20

Source: Government of Sri Lanka, *Census of Population 1971, vol. II, All Island Tables, part I, General Characteristics of the Population* (Colombo, Department of Census and Statistics, 1975), table 1.

Table 6. Intercensal increase, natural increase and migration increase, Sri Lanka, 1871-1971

Period	Total intercensal increase	Natural increase		Migration increase	
		Number	Percentage of total increase	Number	Percentage of total increase
1871-1881	359,358	119,792	33.3	239,566	66.7
1881-1891	248,051	144,260	58.2	103,791	41.8
1891-1901	558,165	225,406	40.4	332,759	59.6
1901-1911	540,396	356,147	65.9	184,249	34.1
1911-1921	391,504	319,410	81.6	72,094	18.4
1921-1931	809,009	656,990	81.2	152,019	18.8
1931-1946	1,350,476	1,280,916	94.8	69,560	5.2
1946-1953	1,440,556	1,363,175	94.6	77,381	5.4
1953-1963	2,484,169	2,513,248	101.2	-29,079	-1.2
1963-1971	2,107,833	2,208,061	104.8	-100,228	-4.8

Sources: A.G. Ranasinha, *Census of Ceylon 1946, vol. I, part I, General Report* (Colombo, Department of Census and Statistics, 1950), table 5; H.E. Peries, *Census of Ceylon 1953, vol. I, General Report* (Colombo, Department of Census and Statistics, 1957) table 2; CICRED, *The Population of Sri Lanka* (Colombo, Department of Census and Statistics, 1974), table 1.2; Government of Sri Lanka, *Census of Population 1971, vol. II, All Island Tables, part I, General Characteristics of the Population* (Colombo, Department of Census and Statistics, 1975), table 1.

Note: Net migration was assumed to be the difference between intercensal increase and natural increase.

migration to population growth during the various intercensal periods from 1871. It must be noted that these proportions, particularly for earlier periods, cannot be deemed to be very accurate since natural increase was estimated on the basis of registered births and deaths and net migration was assumed to be the difference between intercensal increase and natural increase. As discussed elsewhere ^{25/}, registration of births and deaths was imperfect in the early years of civil registration, improving gra-

dually especially after 1887, when it was decided to institute prosecutions under the law for negligence in registering vital events.

It is clear from table 6 that net migration contributed the greater share of the increase in the population between 1871 and 1901. Thereafter, natural increase has been the major determinant of population growth. Between 1901 and 1953, the contribution of migration has been gradually declining while that of natural increase has been gradually increasing. In recent years migration has had a negative effect on the growth of Sri Lanka's population.

^{25/} See annex II.

a. International migration

(i) Immigration

Migration into Sri Lanka on a large scale and on a systematic basis began in the early 1830s with the opening up of the hill-country areas for coffee plantations. The reluctance of the indigenous labour to accept employment on the newly opened estates resulted in a regular recruitment by the European planters of large numbers of indentured labourers from South India.^{26/} For a long time, the flow of migrant labour into the country was to a large extent determined by the prosperity of the plantation industry. In the post-independence era particularly, migration policy came to be influenced more by political considerations. The fluctuations in the number of immigrants between 1871 and 1946 have been explained by Ranasinha as follows:

“... it was in 1871-1881 that the prosperity of the coffee plantation was at its highest and much labour was brought in from India, but in the next decade the estates were developing a leaf disease and were being abandoned. In 1891-1901 tea was rising, phoenix-like over the coffee, and was enjoying a period of extraordinary boom. In the succeeding decade, it was becoming stabilized, rubber and coconut were expanding but the latter part of the decade of 1911-1921 saw the severe rubber slump, causing a reduction of labour on the estates. From the middle of 1924, however, rubber recovered, but the effects of the world-wide economic depression were beginning to be felt towards the end of the decade and continued well into the early years of the 1931-1946 period. The adoption of a definite policy by the Ceylonese Government of discouragement of non-Ceylonese labour was followed in 1939 by the imposition of a ban on emigration from India which, although it caused some hardship to employers and Indian workers alike, has resulted in giving the smallest addition to the population of this country by immigration that it has had at any intercensal period during the last seventy-five years.”^{27/}

There were also other causes for the fall in the number of immigrant labourers, particularly between 1901 and 1911. The most important was the

^{26/} For further discussion on this aspect, see N.K. Sarkar, *op.cit.* pp. 174-178, and Sir Edward St. J. Jackson, *Report of a Commission on Immigration into Ceylon*, Sessional Paper III of 1938 (Colombo, April 1938).

^{27/} A.G. Ranasinha, *op.cit.*, pp. 59-60.

fact that improved methods of cultivation enabled many estates to reduce the number of their labourers, and spare them for work connected with the opening up of new land in tea and rubber in other districts. A further and far-reaching influence affecting labour has been the very large employment of Sinhalese labour which was being attracted to work on the new and expanding rubber estates. It was also found that international competition for Indian labour greatly increased during this decade, the new rivals being South Africa and other countries better able to compete in attractions than Sri Lanka.^{28/}

As stated earlier, Sri Lanka achieved political independence in 1948. In the same year, the Immigrants and Emigrants Act was enacted for purposes of controlling the entry of non-citizens into the country. The passage of this Act “introduced for the first time a framework for the implementation of a national policy for the control of immigration.”^{29/} In terms of the provisions of this Act, any non-citizen desiring entry into the country should possess a valid passport and if required a visa or resident permit. The Citizenship Act of 1948 and the Indian and Pakistani Residents (Citizenship) Act of 1949 clearly defined the terms and conditions under which non-citizens could obtain citizenship of Sri Lanka. With the gradual enforcement of these Acts and other restrictive measures adopted after 1948, migration virtually ceased to make any positive contribution to the growth of population in subsequent years. In point of fact, during the past two decades there has been a net outflow of migrants from the country, the largest number leaving the country between 1963 and 1971. Of special importance in this regard has been the Agreement concluded in October 1964 between the Government of Sri Lanka and the Government of India in regard to the status of all persons of Indian origin in Sri Lanka.^{30/} Under the terms of this Agreement, 300,000 of these persons together with their natural increase will be granted Sri Lanka citizenship while 525,000 with their natural increase will be repatriated to India, both processes to take place simultaneously over a period of 15 years. It is to be expected that net out-migration will continue until the completion of the implementation of this agreement.

^{28/} E.B. Denham, *op.cit.*, p. 41.

^{29/} S.U. Kodikara *Indo-Ceylon Relations Since Independence* (Colombo, 1965), p. 147.

^{30/} This Agreement, commonly referred to as the Srimavo-Shastri Pact, is contained in “Exchange of letters between the Government of Ceylon and the Government of India relating to the status and future of persons of Indian origin in Ceylon” *Government of Ceylon Treaty Series No. 5 of 1964* (Colombo, 1964).

(ii) Emigration

In the past, while Sri Lanka had been receiving a large number of immigrants, the number of nationals emigrating from the country had been negligible. "None of the indigenous communities are migratory in character. They are attached to their land, and have had better fortune with it than have the South Indian peasants. The system of land tenure is not as cruel and burdensome as that of South India, nor is the crop failure so frequent. In Ceylon, the population pressure in relation to agricultural production has been much less than in South India, and so far there has been no economic necessity for the agricultural population to migrate".^{31/}

The limited emigration that has taken place in the past had largely been to the Straits Settlements and the Federated Malay States (Singapore and Malaysia) and India. A small number of persons also emigrated to Burma. The bulk of the migrants were Sri Lankan Tamils, particularly from the Jaffna District and the emigration was largely for white-collar jobs or skilled work.^{32/}

Reliable data relating to emigration on an annual basis are unfortunately not available. However, on the basis of the place of birth data obtained in the *1911 Census of Straits Settlements and Federated Malay States*, the extent of Sri Lankan emigration

^{31/} N.K. Sarkar, *op.cit.*, p.187.

^{32/} E.B. Denham, *op.cit.* states "... the only emigration which is taking place to any considerable extent is that of the Jaffnese to the Straits Settlements and Federated Malay States." (p. 274), "Kuala Lumpur, the principal town in the Federated Malay States has been called the little Jaffna." (p. 68); "The new element which has encouraged emigration is education. The Jaffnese do not emigrate as pioneers, cultivators, settlers but as passed candidates and examination successes" (p. 69). Also, the 1931 census superintendent of British Malayan states, "The Sinhalese belong mainly to the shop keeping class, while the bulk of the Ceylon Tamils follow clerical occupations. The Ceylon Tamil population of the clerical staff of the Railway Department, and to a lesser extent, other Government Departments, is composed of Jaffna Tamils". C.A. Vlieland, *British Malaya—A Report on the 1931 Census* (London, the Crown Agents for the Colonies, 1932), p. 87.

to those countries has been estimated as follows:

Table 7. Sri Lanka born persons enumerated in the Federated Malay States, 1911

	Total	Male	Female
Number of persons born in Sri Lanka enumerated in:			
(a) Strait Settlements	2,121	1,843	278
(b) Federated Malay States	7,249	5,975	1,274
Total	9,370	7,818	1,552
The Sri Lankans in the Federated Malay States comprised:			
(a) Tamils or "other Indians"	6,003	5,096	907
(b) Sinhalese	739	578	161
(c) Others	507	301	206

Source: E.B. Denham, *Ceylon at the Census of 1911 Being the Review of the Results of the Census of 1911* (Colombo, Government Record Office, 1912), p. 274.

According to the 1947 Malayan Census,^{33/} the number of Sri Lankans enumerated in Malaya and Singapore was 22,762. Their classification by ethnic groups and sex is shown in table 8. The number of Sri Lankans enumerated in Malaya in 1931 was 18,490. Thus between 1931 and 1947, the Sri Lankans in Malaya have increased by 23.1 per cent. This increase might have been larger but for the fact that there was a tendency for a large number of emigrants to return home.^{34/}

Table 8. Sri Lanka born persons enumerated in Malaya, 1947

Ethnic group	Total	Male	Female
Tamils	16,783	9,452	7,331
Sinhalese	2,946	1,692	1,254
Others	3,033	1,734	1,299
Total	22,762	12,878	9,884

Source: M.V. Del Tufo, *Malaya—A Report on the 1947 Census of Population* (Kuala Lumpur, The Government Printer, 1949), table 40.

^{33/} In the subsequent Malayan censuses, Sri Lankans were classified along with Indians.

^{34/} E.B. Denham, *op.cit.* observes "While the Jaffnese emigrate in such large numbers to distant lands, they do not desire to settle down anywhere else than Jaffna. The one object of their desires, the Mecca which they all hope to arrive at before they die, is Jaffna" p. 68.

During the early part of this century, a number of Sri Lankans emigrated to India for employment particularly in Madras State.^{35/} It is evident from table 9 which shows the number of Sri Lanka born persons enumerated in India, that there has been a steady increase in this number over the years, remarkable increases being recorded since 1951. The sharp increase since 1951 may be attributed to the enactment in Sri Lanka of the Citizenship Act of 1948 and of the Indian and Pakistani Residents (Citizenship) Act of 1949. The record number of Sri Lanka born persons enumerated in the 1971 Indian census has largely to be attributed to the repatriation from Sri Lanka of many persons of Indian origin in terms of the 1964 Agreement between the two Governments referred to earlier.^{36/}

Table 9. Number of Sri Lanka-born persons enumerated in India, 1901-1971

Census year	Total	Male	Female
1901	5,273	3,236	2,037
1911	6,174	3,783	2,391
1921	7,562	4,734	2,828
1931	8,366	4,851	3,515
1951	16,269	8,421	7,848
1961	28,627	14,326	14,301
1971	37,800	19,700	18,100

Sources: E.B. Denham, *Ceylon at the Census of 1911 Being the Review of the Results of the Census of 1911* (Colombo, Government Record Office, 1912), table A, Ceylon-born persons enumerated in each Province or State by India in 1901 and 1911, p. 275; *Census of India 1921*, India, part 2, (Tables) vol. I; *Census of India 1931*, vol. I, India part II; *Census of India 1951*, vol. I, India, part II-A, Demographic Tables; *Census of India 1961*, vol. I, part II (iii); G.K. Mehrotra, "Birth place migration in India", *Census of India 1971, Special Monograph No. 1* (New Delhi, Office of the Registrar-General, India).

^{35/} Nearly 70 per cent of the Sri Lankans enumerated in Indian Census of 1901 and 1911 were residing in Madras Province.

^{36/} This is evident from the fact that of the Sri Lanka born persons enumerated in the 1971 *Census of India*, about 85 per cent were enumerated in the Madras State.

The number of Sri Lankans who were enumerated as such in Australian censuses is shown in table 10.

Table 10. Number of Sri Lanka-born persons enumerated in the Australian censuses, 1921-1971

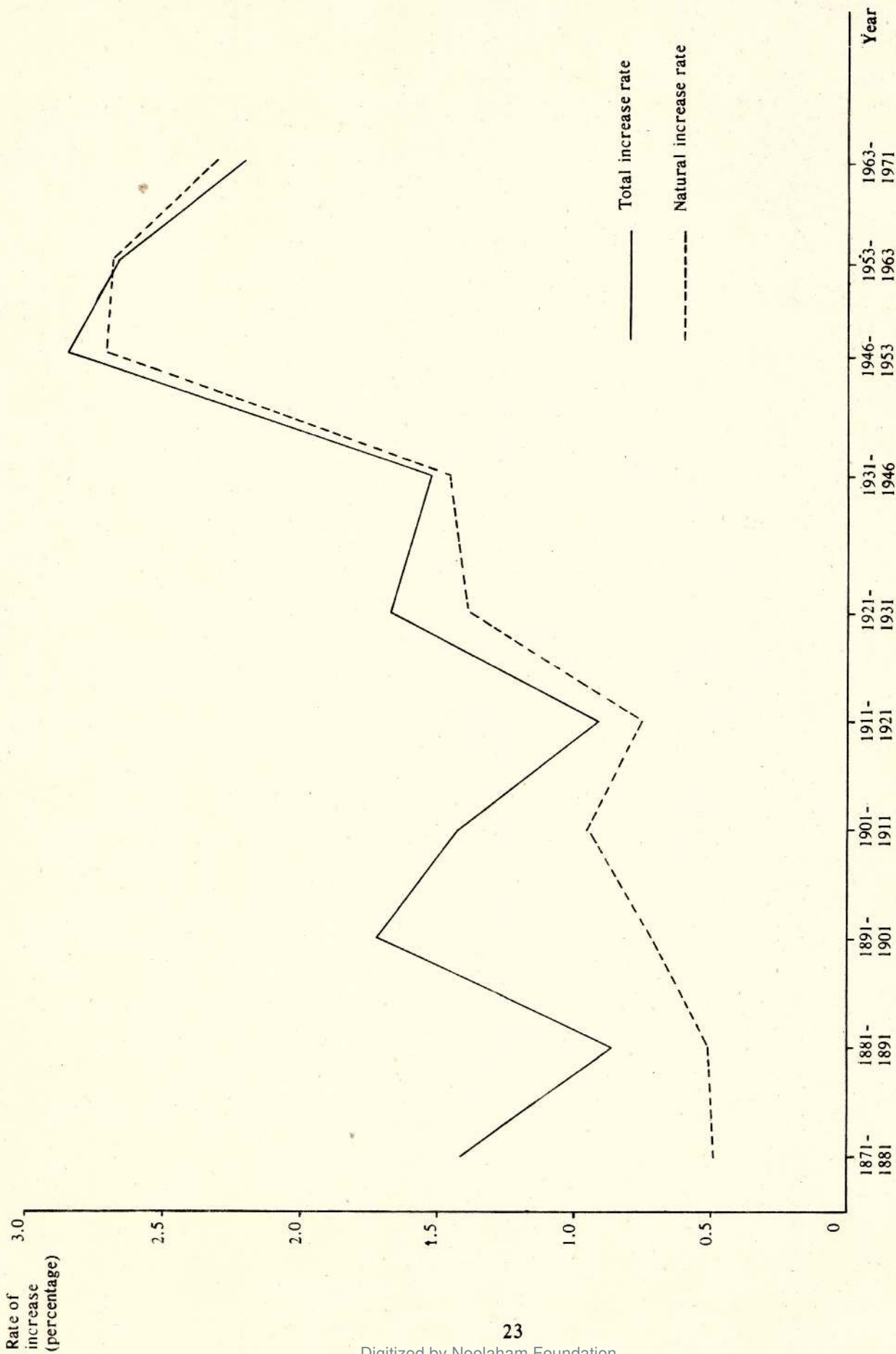
Census year	Total	Male	Female
1921	380	293	87
1933	350	235	115
1947	254	148	106
1961	3,433	1,840	1,593
1966	5,562	2,927	2,635
1971	9,091	4,723	4,368

Source: Compiled from the census reports of Australia.

It will be observed that in recent decades, the number of Sri Lankan emigrants to Australia has been on the increase. In the past, on account of the "White Australia" policy, most migrants from Sri Lanka were Burghers (the descendents of the Dutch). However, with the liberalization of the Australian immigration policy, other Sri Lankans have also been migrating to Australia in recent years.

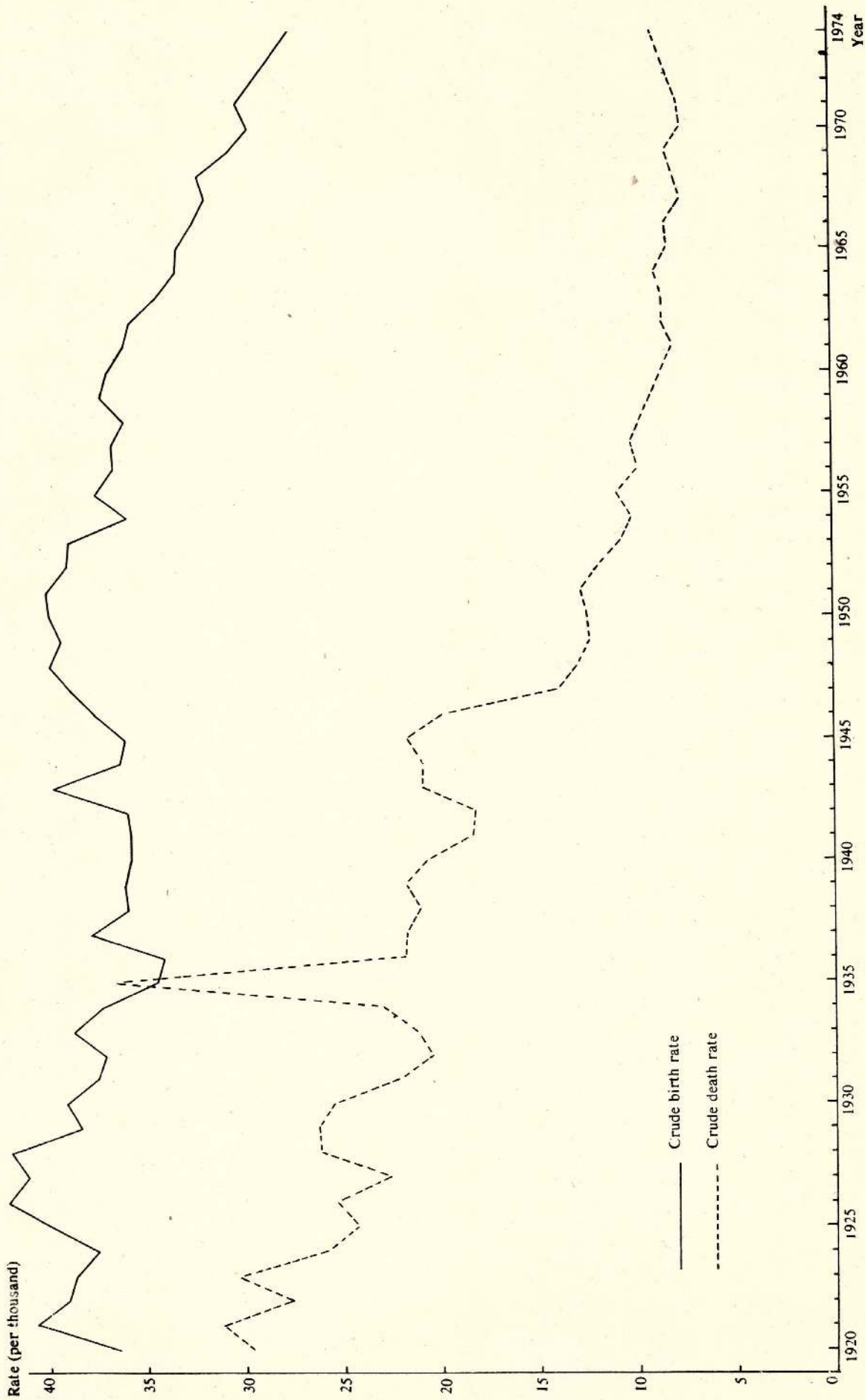
b. Natural increase

It was observed earlier that natural increase played a more significant role in the growth of Sri Lanka's population during the twentieth century. While in the first decade of the century, this factor accounted for about 66 per cent of the increase in the population, currently it appears to be the sole determinant of population trends in the country. The growing importance of the natural increase factor has been due to two reasons. In the first place, as noted earlier, the proportionate share of net migration in the total population increase has been gradually diminishing due to various economic and political developments. Secondly, the rate of natural increase itself has been increasing over the years due to the widening gap between the birth rates and the death rates as is evident from table 11 and figures 4 and 5.



Source: Derived from tables 5 and 6.

Figure 4. Trends in rates of total increase and natural increase of population, 1871-1971



Source: Table 1 of annex III.

Figure 5. Birth rate and death rate, Sri Lanka, 1920-1974

Table 11. Average decennial birth rates, death rates and natural increase rates, 1871 to 1970

Period	Birth rate (per thousand)	Death rate (per thousand)	Natural increase rate (percentage)
1871-1880	27.4	22.7	0.47
1881-1890	29.4	24.3	0.51
1891-1900	34.4	27.6	0.68
1901-1910	38.1	28.8	0.93
1911-1920	37.6	30.4	0.72
1921-1930	39.8	26.5	1.33
1931-1940	36.8	23.0	1.38
1941-1950	37.7	17.1	2.06
1951-1960	37.3	10.4	2.69
1961-1970	32.7	8.2	2.45

Source: Computed from the data published in the Registrar-General's Reports on Vital statistics.

(i) Mortality

Until about the early 1920s, crude death rates in Sri Lanka remained at very high levels.^{37/} This was due to a variety of reasons such as widespread prevalence of epidemic and endemic diseases, inadequate curative and preventive health services, low standards of living, high illiteracy rates and ignorance of simple health rules among the mass of the people. But developments in the fields of medical and sanitary services, organized campaigns against infectious diseases and improvements in the levels of living and literacy of the people, have resulted in declines in the levels of mortality in Sri Lanka. The crude death rates which fluctuated violently around a level of 30 per thousand of the population during the first two decades of this century, gradually declined to an average of about 23 in 1930s.^{38/} This decline continued into the 1940s culminating in a sharp decline from about 20 in 1946 to about 14 in 1947. The precipitous decline in mortality between 1946 and 1947 coincided with the vigorous and intensive DDT campaign against malaria, a disease which until 1946 has been the chief cause of morbidity and

^{37/} The decennial average birth rates and death rates shown in table 11 are based on registration data. Since vital registration was not performed with much care in the early years, the rates particularly for the period 1871 to 1900, should be higher than those shown in the table. The registered birth and death rates for all years from 1871 to 1971 are given in annex III, table 1.

^{38/} In 1935, however, the crude death rate increased sharply to 36.5 on account of a very severe malaria epidemic.

mortality in the country.^{39/} Since 1947, there has been a slow but almost steady decline in the death rate, reaching a level of 8.0 in 1961 and 7.7 in 1971.

(ii) Fertility

According to estimates based on registration data, the birth rates in Sri Lanka at the beginning of this century averaged about 38 per thousand of the population. By global standards this was a very high rate but was typical of contemporary agrarian societies experiencing high death rates. High fertility served as an insurance against high mortality, particularly high infant mortality. More children also meant an assured supply of labour to operate the family farms in addition to providing support to the parents in their old-age. Social values and norms in the past were therefore designed to elicit high birth rates. Though in the course of time there were considerable changes in the conditions that warranted high fertility, the crude birth rates in Sri Lanka continued to remain at high levels until about 1960. As Selvaratnam has noted:

“The remarkable reduction in mortality that was achieved after 1946 was not accompanied or even followed by a comparative or significant reduction in fertility which for long continued to remain almost unchanged at traditionally high levels. For five decades from 1900 to 1950, the crude birth rate of Ceylon had remained fairly steady around 38 per thousand of the population, although the rate was subject to some fluctuations. The sharp decline in morbidity and mortality since 1946 helped to increase the fertility somewhat in the late 1940s. The birth rate which was 37.4 in 1946 increased to 39.7 in 1948 and remained at that level until 1951. During the 1950s the birth rate showed signs of decline interrupted in 1955 and again in 1959. The crude birth rate in 1963, however, was 34.4 and this was in comparison to a large number of countries, a very high birth rate. It will therefore be seen that while the death rate dropped from 20.3 in 1946 to 8.5 in 1963, the birth rate declined from 37.4 to only 34.4 during the same period. Rapidly falling death rates and almost static birth rates resulted in very high rates of population growth since 1946.”^{40/}

^{39/} The factors contributing to the dramatic decline in mortality during the post-war period are discussed in great detail in chapter VIII.

^{40/} S.Selvaratnam, *loc.cit.*, pp. 258-259.

According to Peter Newman, the malaria eradication programme played a major role in accelerating the rate of increase in population after the Second World War not only by reducing the death rate but also by increasing the birth rate. His estimates show that the anti-malaria campaign was responsible for about 60 per cent of the increase in population growth rate during the period resulting in a population size that was 1 million larger than it otherwise would have been by the end of 1960. "In the absence of the anti-malaria drive, Ceylon would not have achieved its end-1960 population until the middle of 1966 so that the eradication programme cut 27% from the time that would have been needed to achieve the ten million mark, starting at the end of 1945."^{41/}

The 1960s, however, witnessed a steady decline in Sri Lanka's fertility rate. The crude birth rate, estimated at 36.6 in 1960, recorded a gradual and almost uninterrupted decline to about 29.4 in 1970. It rose to a level of 30.1 in 1971, and has since continued to decline, falling to 29.7 in 1972 and to 27.8 in 1973.^{42/} Thus over a period of 14 years from 1960 to 1973, the birth rate declined by about 24 per cent, largely accounting for the fall in the average annual growth rate of the population observed between 1963 and 1971.

3. Phases of growth

On the basis of the variations in the average annual growth rates as well as in the relative influence of the two growth components, it is possible to identify three distinct phases of population growth in Sri Lanka during the 100 years, 1871-1971. The first phase covers the 30-year period 1871-1901. During this period, the population grew rather slowly, the rate of growth averaging about 1.3 per cent *per annum*. The birth rates as well as the death rates were high and consequently the rate of natural increase was low, the annual average being only 0.52 per cent. The major factor in the growth of the population during this period was the heavy inflow of migrants from abroad. Estimates indicate that nearly 58 per cent of the total increase in population was due to net migration.

^{41/} Peter Newman, *Malaria Eradication and Population Growth with Special Reference to Ceylon and British Guiana* (Ann Arbor, School of Public Health, The University of Michigan, 1965), pp. 68-69.

^{42/} For discussion on the causes of the recent fertility decline, see chapter IX.

The second phase relates to the 45-year period 1901-1946. The average annual rate of growth of the population, viz. 1.40 per cent, was only slightly higher than the average rate for the preceding 30-year period. It was during this period that natural increase began to assume relatively greater importance in the growth of the country's population. Birth rates continued to remain at traditionally high levels while death rates gradually declined resulting in an increase in the rate of natural increase to an average of about 1.16 per cent *per annum*. At the same time there was a steady decline in the flow of migrants into the country. It is estimated that about 85 per cent of the over-all increase in population during this period was due to excess of births over deaths and only about 15 per cent was due to international migration.

The third phase covers the 25-year period 1946-1971. During this period, international migration ceased to make any contribution to population growth. Since 1953, it exerted a negative influence. Yet the annual rate of population growth averaged about 2.56 per cent or almost double the rates experienced during the two preceding phases. This was because high birth rates were experienced during the major part of this phase while death rates recorded drastic reductions from the beginning. As noted by Jones and Selvaratnam:

"Post-war population trends in Ceylon have been subjected to intensive academic scrutiny and not without reason. Ceylon is the example *par excellence* of a set of circumstances that have boosted population growth rates throughout the developing world and lent popularity to the term population explosion. Because of a precipitate decline in mortality in the early post-war years, unaccompanied by any fall in fertility (indeed the mortality decline almost certainly contributed to the observed increase in the birth rate in the late 1940's) the rate of population growth accelerated sharply. Since that time (around 1947), the death rate has continued to fall and the rate of population growth remained high, although growth has slowed somewhat during the 1960's because the birth rate has been declining faster than the death rate."^{43/}

The widening gap between birth rates and death rates pushed up the rates of natural increase to an

^{43/} Gavin W. Jones and S. Selvaratnam, *Population Growth and Economic Development in Ceylon* (Colombo, Hansa Publishers, 1972), p.20.

unprecedented level of 2.57 per cent *per annum* between 1946 and 1971 as is evident from table 12.

Table 12. Average annual rates of natural increase, migration increase and population increase, Sri Lanka, 1871 to 1971

Period	Average annual rates of increase		
	Natural increase	Migration increase	Population increase
1871-1901	0.52	0.81	1.33
1901-1946	1.16	0.24	1.40
1946-1971	2.57	-0.01	2.56

Source: Computed from the data in tables 5 and 6.

4. Demographic transition

The demographic trends observed in Sri Lanka during the past century conform more or less to the pattern of population growth outlined in the theory of demographic transition.^{44/} According to this theory, which was put forth to explain the rapid population increase in many western developed nations, there were three stages or phases in the growth of the population of most developed countries. The first phase related to the pre-modern period when both the birth rates and the death rates were high, about 30 per thousand or higher, and both were uncontrolled. The rate of population growth was thus kept at levels of less than 1 per cent *per annum*. The second stage, was the transitional phase marked by a progressive reduction in the death rate, a continuance of traditionally high birth rates, and consequently of an increase in the rate of population growth ranging from 1 to 1.5 per cent *per annum*. The third stage is the modern phase of low birth rate and low death rate and therefore of a low rate of population growth averaging about 1 or less than 1 per cent *per annum*.

In Sri Lanka, the years prior to 1920, when both birth and death rates were high, correspond to the pre-modern phase referred to earlier, while the 40-year period, 1920-1960, corresponds to the

transition period of continuing high birth rates and declining death rates. The post-1960 period of low death rates and declining birth rates more or less approximates the 'modern' phase of the western developed countries.

Evidently, the first step in the transition, that of a movement from high to low death rates, has been completed in Sri Lanka and her current death rates are as low as, if not lower than, those obtaining in many of the western industrialized countries. But what distinguishes Sri Lanka's experience in this regard is the time taken to pass through this phase and the manner in which the reduction in mortality was achieved.^{45/} The decline in the death rate from the "primitive" high to the "modern" low levels in the western countries was spread over a period of 50 to 100 years and was dependent in the early stages on the direct effects of economic development. The agricultural and industrial revolutions helped to improve the standards of living of the people and their nutritional levels, in addition to making possible the provision of more improved and greatly expanded health and sanitation facilities. These developments were largely responsible for the gradual decline in mortality and consequent increase in population over an extended time period. By contrast, an unprecedented decline in the death rate from about 20 to 14 per thousand of the population was accomplished in Sri Lanka in a matter of two years between 1946 and 1947 and a low rate of 8 per thousand was reached within the next 14 years. What is more, this decline was not brought about by any radical alteration in the economic structure, but took place under the impact of modern medicine during the very early stages of the country's economic development.

The other distinguishing feature of Sri Lanka's population growth is in regard to the decline in the birth rate during the third phase of the transition. In the western developed countries, the decline in the death rate was followed by a fall in the birth rate after a lapse of about 100 years. Starting from 1875, the birth rates in these countries declined gradually and by 1930 had "bottomed out" at a level of 18 per thousand of the population, the rate of decline averaging about 1.2 per cent *per annum*. In Sri Lanka, as was observed earlier, the birth rate started on a path of steady decline since 1960 and by 1973 it has come down to about

44/ For full discussion regarding this theory, see Warren Thompson, *Population and Peace in the Pacific* (Chicago, 1946) pp. 22-35; C.P. Blacker, "Stages in population growth", *Economic Review*, vol. 39, No. 3 (October, 1947), pp. 81-102; Kingsley Davis, *Human Society* (New York, 1949) pp. 603-608; Frank W. Notestein, "Economics of population and food supplies", *Proceedings of the Eighth International Conference of Agricultural Economists*, (London, 1953) pp. 15-31.

45/ For detailed discussion on this aspect, see Government of Ceylon, *The Ten-Year Plan*, (Colombo, National Planning Council, 1959), pp. 7-13.

28 per thousand of the population. The average annual rate of decline in the birth rate during this period was 1.8 per cent. Thus not only has the time lag between mortality decline and fertility decline been shorter than in the west, but the average annual rate of decline in the birth rate has also been higher in Sri Lanka. Further, unlike in western developed countries, the recent fertility decline in Sri Lanka has not been dependent on conditions resulting from high levels of economic development. As will be discussed in chapter IX, there were a number of other factors which brought about the social environment conducive to fertility reduction. If the present declining trends were to continue, the birth rate in Sri Lanka would reach a level of 18 per thousand of the population by 1990s, thus completing the final phase in the demographic transition.

The demographic experience of Sri Lanka in

recent decades has clearly shown that a high level of economic development is a sufficient but not a necessary condition for bringing about radical changes in the mortality and fertility patterns of a people. Of course Sri Lanka's experience, particularly in respect to mortality decline, is being repeated in many other developing countries which have entered the first phase of the demographic transition. In these countries, the new and improved medical and public innovations have been responsible for a substantial lowering in the death rates. However, "the magnitudes involved and the radical nature of the changes wrought make the case of Ceylon one of the most sensational examples of the global trend" ^{46/}

^{46/} D.R. Snodgrass, *Ceylon: An Export Economy in Transition*, (Homewood, Illinois, Richard D. Irwin, Inc., 1966), p. 83.

CHAPTER II

GEOGRAPHICAL DISTRIBUTION AND GROWTH OF POPULATION

In Sri Lanka, as in any other country, the population is not uniformly distributed over the country's land area. Some regions and districts within the country are very densely populated while others are less populous. This uneven distribution is partly due to geographical factors such as climate, terrain, soils, natural resources etc. which have largely been responsible for the great differences in opportunities for economic activities in the various areas. Over the years, a variety of social, cultural and demographic factors have also combined to determine the prevailing pattern of population distribution in the country.

A. DISTRIBUTION BY ADMINISTRATIVE DIVISIONS

It has been customary in Sri Lanka to study the geographic distribution of the population by the nine provinces and the several districts^{1/} into which the country has been divided for administrative purposes. Table 13 gives the enumerated population of each province and district as at the dates of the various censuses held from 1871 to 1971. The percentage distribution of the population by provinces and districts for various census years are given in table 14 and the ranking of the provinces according to population size at various censuses is indicated in table 15. Some of the important features of population distribution evident from these tables are:

(a) Throughout the 100-year period, 1871-1971, the Western Province, the smallest in area, has maintained its predominant position as the province with the largest population in the country. Nearly 27 per cent of the country's population is at present settled in this province which contains only about 6 per cent of the total land area;

(b) The second most thickly populated province is the Central Province which contains over 15 per cent of the total population in 8.5 per cent of the total land area;

(c) Three provinces, Western, Central and Southern, which together occupy only about 23 per cent of the total land area contained among them over 55 per cent of the total population in all the years. In 1931 and 1946, the combined population of these three pro-

vinces formed about 60 per cent of the country's population in these years;

(d) In area, the North Central Province is the largest province in Sri Lanka, but its population is less than that of any other province in the country;

(e) There have been changes in the relative share of each of the nine provinces between 1871 and 1971. For instance, the share of the Western Province steadily increased from 24.0 per cent in 1871 to 28.2 per cent in 1946, and thereafter gradually declined to 26.8 per cent in 1971. An almost similar trend is noticeable in respect of the Central Province, but the share of the Southern Province recorded a steady decline from 16.6 per cent in 1871 to 13.1 per cent in 1971. The largest reduction in the proportionate share appears to be in regard to the Northern Province, viz., from 11.7 per cent in 1871 to 6.9 per cent in 1971, while the share of the North Central Province registered a marked increase during this period;

(f) Four provinces, namely Western, Uva, Eastern and North-Central occupied the first, seventh, eighth and ninth positions respectively in regard to population size at all censuses. There have however, been changes in the relative positions of the other provinces. In 1871, Southern Province ranked second and Central Province third; in 1971 they had exchanged their positions. Northern Province, which occupied the fourth place in 1871, now occupies the sixth position, while North-Western and Sabaragamuva Provinces have improved their relative positions over the years;

(g) The most even distribution of population to area is found in the North-Western Province which contains 11.9 per cent of the total land area and 11.1 per cent of the country's population;

(h) Apart from the inter-provincial disparity in regard to population size, there is also an uneven spread between districts within each province. For example, in 1971, the population of the Colombo District was more than treble the population of Kalutara District in the Western Province. Similarly, the population of Jaffna District in the Northern Province was about four times more than the combined population of the other two districts, Mannar and Vavuniya. It is only in the Sabaragamuva Province that both districts had an almost equal number of persons in 1971,

^{1/} At present there are 22 administrative districts, but as noted earlier, the number of districts has varied between 1871 and 1971.

Table 13. Numerical distribution of the population by province and revenue district^{a/}, Sri Lanka, 1871-1971

Province and revenue district	1871	1881	1891	1901	1911	1921	1931	1946	1953	1963	1971
Sri Lanka	2,400,380	2,759,738	3,007,789	3,565,954	4,106,350	4,497,854 ^{b/}	5,306,863	6,657,339	8,097,895	10,582,064	12,689,897
Western Province	575,721	671,500	762,533	920,683	1,106,321	1,246,847	1,445,034	1,876,904	2,232,276	2,838,877	3,401,779
Colombo	429,980	506,479	578,901	690,826	826,828	923,143	1,081,249	1,420,332	1,708,726	2,207,420	2,672,265
Kalutara	145,741	165,021	183,632	229,857	279,493	323,704	363,785	456,572	523,550	631,457	729,514
Central Province	365,559	473,669	474,487	622,832	672,258	717,739	953,388	1,135,290	1,366,685	1,697,018	1,953,044
Kandy	232,156	288,332	288,353	377,591	408,429	433,993	587,916	711,449	840,382	1,043,632	1,187,925
Matale	75,199	86,655	76,514	92,203	108,367	116,584	129,697	155,720	201,049	255,630	314,841
Nuwara Eliya	58,204	98,682	109,620	153,038	155,462	167,162	235,775	268,121	325,254	397,756	450,278
Southern Province	398,604	433,520	489,799	566,736	628,817	671,234	771,204	961,418	1,129,308	1,430,740	1,661,870
Galle	194,417	209,680	222,895	258,116	291,001	313,118	363,553	459,785	524,369	641,474	735,173
Matara	143,336	151,923	177,586	203,750	227,308	238,509	283,292	351,947	413,431	514,969	586,443
Hambantota	60,851	71,917	89,318	104,870	110,508	119,607	124,359	149,686	191,508	274,297	340,254
Northern Province	281,666	302,500	319,296	340,936	369,651	374,829	398,874	479,572	570,650	741,341	874,626
Jaffna	246,063	265,583	279,284	300,851	326,712	330,541	355,425	424,788	491,849	612,596	701,603
Mannar	20,258	21,348	24,511	24,926	25,603	25,582	25,137	31,538	43,689	60,124	77,780
Vavuniya	15,345	15,569	15,501	15,159	17,336	18,706	18,312	23,246	35,112	68,621	95,243
Eastern Province	112,569	127,555	148,444	173,602	183,698	192,821	212,421	279,112	354,410	546,474	717,571
Batticaloa	93,120	105,358	122,699	145,161	153,943	158,709	174,929	203,186	270,493	411,732	556,721
Amparai	19,449	22,197	25,745	28,441	29,755	34,112	37,492	75,926	83,917	138,553	188,245
Trincomalee	276,052	293,327	320,070	353,626	434,116	492,181	546,966	667,889	855,228	1,155,207	1,404,063
North-Western Province	207,942	215,173	230,187	249,429	306,807	354,197	397,239	485,042	626,336	852,661	1,025,633
Kurunegala	68,110	78,154	26,652	29,779	39,665	35,610	35,087	43,083	58,820	302,546	378,430
Puttalam	63,231	74,418	63,231	74,418	87,644	102,374	114,640	139,764	170,072		
Chilaw	63,743	66,146	75,333	79,110	86,276	96,525	97,365	139,534	229,282	393,759	552,423
North-Central Province	63,743	66,146	75,333	79,110	86,276	96,525	97,365	139,534	229,282	279,788	388,770
Anuradhapura	128,981	165,692	159,201	186,674	216,692	233,864	303,243	372,238	466,896	654,105	808,425
Polonnaruwa	128,981	165,692	159,201	186,674	216,692	233,864	303,243	372,238	466,896	521,845	615,405
Province of Uva	197,485	225,829	258,626	321,755	408,521	471,814	578,368	745,382	893,160	1,124,543	1,316,096
Badulla	92,219	105,874	107,999	132,964	165,992	202,975	263,801	343,620	421,555	546,037	661,344
Monaragala	105,266	119,955	150,627	188,791	242,529	268,839	314,567	401,762	471,605	578,506	654,752
Province of Sabaragamuwa	197,485	225,829	258,626	321,755	408,521	471,814	578,368	745,382	893,160	1,124,543	1,316,096
Ratnapura	92,219	105,874	107,999	132,964	165,992	202,975	263,801	343,620	421,555	546,037	661,344
Kegalla	105,266	119,955	150,627	188,791	242,529	268,839	314,567	401,762	471,605	578,506	654,752

Source: Reports relating the relevant censuses.

Notes: a/ Between 1871 and 1971, there have been changes in the number of districts. The Chilaw District in the North-Western Province which was created about the time of the 1891 census was after 1953 merged with the Puttalam District in the same province. Between 1953 and 1963 censuses the Batticaloa District in the Eastern Province was divided into the Batticaloa and Amparai Districts; the Anuradhapura District in the North-Central Province into the Anuradhapura and Polonnaruwa Districts; and the Badulla District in the Province of Uva into the Badulla and Monaragala Districts.

b/ Excludes a miscellaneous population of 751 not distributed among districts.

Table 14. Percentage distribution of the population by province and revenue district. a/ Sri Lanka, 1871-1971

Province and revenue district	1871	1881	1891	1901	1911	1921	1931	1946	1953	1963	1971	Area 1971 (percentage)
Sri Lanka	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Western Province	24.0	24.3	25.4	25.8	26.9	27.7	27.2	28.2	27.6	26.8	26.8	5.7
Colombo	17.9	18.3	19.2	19.4	20.1	20.5	20.4	21.3	21.1	20.8	21.1	3.2
Kalutara	6.1	6.0	6.2	6.4	6.8	7.2	6.8	6.9	6.5	6.0	5.7	2.5
Central Province	15.2	17.2	15.8	17.5	16.4	16.0	18.0	17.0	16.9	16.0	15.4	8.5
Kandy	9.7	10.5	9.6	10.6	10.0	9.7	11.1	10.7	10.4	9.9	9.4	3.6
Matale	3.1	3.1	2.6	2.6	2.6	2.6	2.4	2.3	2.5	2.4	2.5	3.0
Nuwara Eliya	2.4	3.6	3.6	4.3	3.8	3.7	4.5	4.0	4.0	3.7	3.5	1.9
Southern Province	16.6	15.7	16.3	15.9	15.3	14.9	14.5	14.4	14.0	13.5	13.1	8.5
Galle	8.1	7.6	7.4	7.2	7.1	7.0	6.9	6.9	6.5	6.0	5.8	2.6
Matara	6.0	5.5	5.9	5.7	5.5	5.3	5.3	5.3	5.1	4.9	4.6	1.9
Hambantota	2.5	2.6	3.0	3.0	2.7	2.6	2.3	2.2	2.4	2.6	2.7	4.0
Northern Province	11.7	11.0	10.6	9.6	9.0	8.3	7.5	7.2	7.0	7.0	6.9	13.5
Jaffna	10.3	9.6	9.3	8.4	8.0	7.3	6.7	6.4	6.1	5.8	5.5	3.9
Mannar	0.8	0.8	0.8	0.8	0.6	0.6	0.5	0.5	0.5	0.6	0.6	3.8
Vavuniya	0.6	0.6	0.5	0.4	0.4	0.4	0.3	0.3	0.4	0.6	0.8	5.8
Eastern Province	4.7	4.6	4.9	4.9	4.5	4.3	4.0	4.2	4.4	5.2	5.7	12.8
Batticaloa	3.9	3.8	4.1	4.1	3.8	3.5	3.3	3.1	3.3	1.9	2.0	4.0
Amparai	0.8	0.8	0.8	0.8	0.7	0.8	0.7	1.1	1.1	2.0	2.1	4.6
Trincomalee										1.3	1.5	4.2
North-Western Province	11.5	10.6	10.6	9.9	10.6	11.0	10.4	10.0	10.5	10.9	11.1	11.9
Kurunegala	8.7	7.8	7.6	7.0	7.5	7.9	7.5	7.3	7.7	8.1	8.1	7.3
Puttalam					1.0	0.8	0.7	0.6	0.7			
Chilaw	2.8	2.8	2.1	2.1	2.1	2.3	2.2	2.1	2.1	2.8	3.0	4.6
North-Central Province	2.7	2.4	2.5	2.2	2.1	2.1	1.8	2.1	2.8	3.7	4.4	16.3
Anuradhapura										2.6	3.1	11.1
Polonnaruwa										1.1	1.3	5.2
Province of Uva	5.4	6.0	5.3	5.2	5.3	5.2	5.7	5.6	5.8	6.2	6.4	15.3
Badulla										4.9	4.8	4.3
Monaragala										1.3	1.5	11.0
Province of Sabaragamuwa	8.2	8.2	8.6	9.0	9.9	10.5	10.9	11.2	11.0	10.7	10.4	7.5
Ratnapura	3.8	3.8	3.6	3.7	4.0	4.5	5.0	5.2	5.2	5.2	5.2	4.9
Kagalla	4.4	4.4	5.0	5.3	5.9	6.0	5.9	6.0	5.8	5.5	5.2	2.6

Source: Computed on the basis of the data in table 13.

Note: a/ Between 1871 and 1971, there have been changes in the number of districts. Chilaw District in the North-Western Province, which was created about the time of the 1891 census was, after 1953, merged with the Puttalam District in the same Province. Between 1953 and 1963 censuses, the Batticaloa District in the Eastern Province was divided into the Batticaloa and Amparai Districts; the Anuradhapura District in the North Central Province into the Anuradhapura and Polonnaruwa Districts; and Badulla District in the Province of Uva into Badulla and Monaragala Districts.

Table 15. Rank distribution of provinces by population size, Sri Lanka, 1871-1971

Province	1871	1881	1891	1901	1911	1921	1931	1946	1953	1963	1971
Western Province	1	1	1	1	1	1	1	1	1	1	1
Central Province	3	2	3	2	2	2	2	2	2	2	2
Southern Province	2	3	2	3	3	3	3	3	3	3	3
Northern Province	4	4	5	5	6	6	6	6	6	6	6
Eastern Province	8	8	8	8	8	8	8	8	8	8	8
North-Western Province	5	5	4	4	4	4	5	5	5	4	4
North-Central Province	9	9	9	9	9	9	9	9	9	9	9
Province of Uva	7	7	7	7	7	7	7	7	7	7	7
Sabaragamuva Province	6	6	6	6	5	5	4	4	4	5	5

Source: Computed on the basis of the data in table 13.

though in earlier years their relative proportions have not been equal.

(i) The most populous district in the island is the Colombo District, next comes the Kandy District. In 1971, the only other district with population of over a million was Kurunegala District. The district with the smallest population is the Mannar District.

B. GROWTH BY ADMINISTRATIVE DIVISIONS

Apart from the unequal sizes of their population, the various provinces and districts also experienced different rates of population growth between 1871 and 1971. These differing rates of growth have also been responsible in part for the uneven distribution of the population within the country. Table 16 gives the average annual rates of population growth in the various provinces and districts for the three periods, 1871 to 1901, 1901 to 1946 and 1946 to 1971.

1871 to 1901

During the 30 years 1871 to 1901, while the population of the country as a whole increased at an average annual rate of 1.33 per cent, the rates of population growth in eight districts (Colombo, Kalutara, Kandy, Nuwara Eliya, Hambantota, Batticaloa, Puttalam and Kegalla) were higher, and the rates in the other districts lower, than the national average. Nuwara Eliya District in the Central Province and Kegalla District in the Sabaragamuva Province expe-

rienced rates of increase that were substantially higher than the rate for the country — about two and half times and one and half times the national rate respectively. The phenomenal increase in the population of Nuwara Eliya District was largely due to international migration which, as noted in chapter I, played a very dominant role in the growth of Sri Lanka's population during this period. A substantial proportion of the Indian labour that moved into the country was settled on estates in the Nuwara Eliya District, the only district where Indian Tamils have outnumbered the indigenous races. The higher rate of population increase in the Kegalla District was due to the development of tea, rubber and plumbago industries.

The comparatively low rate of population growth observed in the Trincomalee District was due to out-migration from the district following the collapse between 1891 and 1901 of the tobacco industry, which in earlier decades had attracted a large number of migrants into the district. There were seven districts (Matale, Galle, Jaffna, Mannar, ^{2/} Vavuniya,

^{2/} It was observed that: "Mannar has always had the reputation of being one of the most malarial Districts in the Island. Its population suffered severely from cholera until the closing of the North road in 1899, and though there has been no outbreak of cholera since then, the District still presents the worst bill of health of any District in Ceylon". See E.B. Denham, *Ceylon at the Census of 1911. Being The Review of the Results of the Census of 1911*, (Colombo, Government Record Office, 1912), p. 73.

Table 16. Average annual rates of population growth by province and district, 1871 to 1971

Province/district	1871-1901	1901-1946	1946-1971	1871-1971
Sri Lanka	1.33	1.40	2.56	1.67
Western Province	1.58	1.59	2.35	1.78
Colombo	1.60	1.61	2.50	1.83
Kalutara	1.53	1.54	1.85	1.61
Central Province	1.80	1.34	2.15	1.68
Kandy	1.64	1.42	2.03	1.64
Matale	0.68	1.17	2.79	1.43
Nuwara Eliya	3.28	1.25	2.05	2.06
Southern Province	1.18	1.18	2.16	1.43
Galle	0.95	1.29	1.85	1.33
Matara	1.18	1.22	2.02	1.41
Hambantota	1.84	0.79	3.27	1.73
Northern Province	0.64	0.76	2.38	1.13
Jaffna	0.67	0.77	1.98	1.05
Mannar	0.70	0.52	3.60	1.35
Vavuniya	-0.04	0.75	5.67	1.83
Eastern Province ^{a/}	1.46	1.06	3.76	1.86
Batticaloa	1.49	0.75	3.82	1.74
Trincomalee	1.28	2.20	3.62	2.28
North-Western Province	0.83	1.42	2.95	1.63
Kurunegala	0.61	1.49	2.97	1.60
Puttalam ^{b/}	1.43	1.26	2.89	1.72
North Central Province	0.72	1.27	5.53	2.17
Anuradhapura ^{c/}	0.72	1.27	5.53	2.17
Uva Province ^{d/}	1.24	1.54	3.08	1.84
Badulla	1.24	1.54	3.08	1.84
Sabaragamuva Province	1.64	1.88	2.25	1.90
Ratnapura	1.23	2.13	2.60	1.98
Kegalla	1.97	1.69	1.93	1.83

Source: Based on data in table 13.

Notes: ^{a/} Includes present Amparai District.

^{b/} Includes former Chilaw District.

^{c/} Includes present Polonnaruwa District.

^{d/} Includes present Monaragala District.

Kurunegala and Anuradhapura) which had rates of population growth averaging less than 1 per cent *per annum*. Most of these districts were subject to severe epidemics of malaria and other infectious diseases during this period, while some of them like Galle and Jaffna, which were relatively health, were out-migration districts.

1901-1946

During this period, in seven districts (Colombo, Kalutara, Trincomalee, Kurunegala, Badulla, Ratnapura and Kegalla) the average annual rates of population increase were higher than the average rate of 1.40 per cent for the country as a whole. All the other districts had rates of population increase lower than the national average, and in five of them (Hambantota, Jaffna, Mannar, Vavuniya and Batticaloa) the rates averaged less than 1 per cent *per annum*. In 12 districts (Colombo, Kalutara, Matale, Galle, Matara, Jaffna, Vavuniya, Trincomalee, Kurunegala, Anuradhapura, Badulla and Ratnapura) the average rates of growth increased over the respective rates for previous period while in the other seven districts the rates decreased. The significant decline in the average annual rate of growth of the population in Nuwara Eliya District from 3.28 per cent during 1871 - 1901 to 1.25 during 1901 - 1946 was entirely due to the decrease in the immigrant Indian population which formed so large and important a portion of the population of this district.^{3/}

The population of Kurunegala District in the North-Western Province, of Trincomalee District in the Eastern Province and of Ratnapura District in the Sabaragamuwa Province increased substantially during this period. The average growth rate of 1.49 for Kurunegala was over twice, and the rates of 2.20 for Trincomalee and 2.13 for Ratnapura were over one and half times their respective rates during the earlier 30-year period. Though in earlier years, Kurunegala District had a reputation for ill-health notably the prevalence of malaria, "it will be observed that there has been a rapid growth in the population of the district since 1901. This must be attributed to the development of the district since the opening of the railway in 1894, and the planting up of extensive acreages of land in coconuts and rubber. In fact, the trend has been to attract immi-

grants into the district since the beginning of the century."^{4/} The restoration and construction of irrigation works and the establishment of dispensaries well-equipped with quinine did much to provide this improved condition during this period.

The high rate of population increase in the Trincomalee District during this 45-year period has to be attributed largely to internal migration, particularly between 1931 and 1946. The history of the district has largely been the history of the Trincomalee town. There was a large inflow of people into this district during the years of the Second World War, when the natural harbour of Trincomalee served as a base for naval operations. The opening of the railway in 1933 may also to some extent have contributed to this growth.

The population of Ratnapura District grew not only by a steady natural increase but also by immigration from other districts. The remarkable development of the plantation industry, particularly tea and rubber resulted in an influx of Indian immigrant labour. The Indian Tamil population increased almost threefold from 25,898 in 1911 to 70,829 in 1946. Of equal significance was the in-migration of low country Sinhalese most of whom found employment in the business and service sectors, which started expanding on account of the rubber boom. The number of low country Sinhalese in the district increased from 11,961 in 1901 to 19,026 in 1911 and to 52,386 in 1946.^{5/}

1946 to 1971

The pattern of population growth by districts during the 25-year period 1946-1971 was different from the patterns observed during the two preceding periods. Between 1946 and 1971 the population of the entire country increased at an average annual rate of 2.56 per cent, which, as observed earlier, was almost double the rates of 1.33 per cent and 1.40 per cent experienced during the two preceding periods. In all districts the average annual rates of population growth between 1946 and 1971 not only recorded substantial increases over the 1901-1946 period, but also exceeded 1.8 per cent *per annum*. There was a

^{4/} A.G. Ranasinha, *Census of Ceylon 1946, vol. 1, part 1, General Report*, (Colombo, Department of Census and Statistics, 1950), p. 118.

^{5/} E.B. Denham, *op.cit.* p. 199, "The District is now undergoing a third invasion - that of Low-countryman. Though a peaceful one, it is nonetheless profoundly affecting the manners and customs of the inhabitants of the District."

^{3/} In addition to the decline in the actual number of Indian immigrants, the competition from other districts where large areas had been newly opened had a tendency to reduce the number of immigrant labourers employed on estates in fully planted districts such as Nuwara Eliya and Kandy.

doubling or more than doubling in these rates for 10 districts, viz., Matale, Hambantota, Jaffna, Mannar, Vavuniya, Batticaloa, Kurunegala, Puttalam, Anuradhapura, and Badulla. It will be noted that with the exception of two of these districts (Kurunegala and Badulla), the rates of growth in the other eight districts during the previous period were less than the rate for the country as a whole. In all but one of these 10 districts (Jaffna) the growth rates exceeded the national average between 1946 and 1971. What is more, all these 10 districts fall within the area defined as dry zone. The rate of growth of the only other dry zone district, Trincomalee District, was nearly one and half times its 1901-1946 rate and was higher than the 1946-1971 national average. The other eight districts together constitute the wet zone, and with the exception of Ratnapura District, their average rates of population growth between 1946 and 1971 were below the average rate for the country as a whole (table 17).

The fundamental factor responsible for the spectacular increase in the population of the dry zone districts between 1946 and 1971 was the successful era-

dication of malaria during the late 1940s. Except for Jaffna District, the other 10 districts in the dry zone had long been classified as areas greater portions of which were endemic or hyper-endemic to malaria. The districts in the wet zone were either healthy or moderately endemic. The eradication of malaria stimulated the growth of the population of the dry zone districts by reducing mortality and increasing fertility and in-migration.

Until about 1946, the crude death rates in the dry zone districts were much higher, and the crude birth rates generally lower, than in the districts of the wet zone. Between 1946 and 1947 the mortality rates in practically all dry zone districts registered much sharper declines compared with the rates of the wet zone districts. For example, as is evident from table 18, the crude death rate in the Kurunegala District dropped by 15 points, almost halving itself during the two years, while in the Mannar District it dropped by about 14 points, in Batticaloa District by about 13 points and in Hambantota District by 9 points. Since 1947, the crude death rates in most of the dry

Table 17. Population increase between 1946 and 1971 by district

District	Increase in population between 1946 and 1971		
	Percentage Increase	Compound annual growth rate (percentage)	Percentage difference between national and district annual growth rates
All districts	90.6	2.56	
Wet zone			
Kalutara	59.8	1.85	-27.7
Galle	59.9	1.85	-27.7
Kegalla	63.0	1.93	-24.6
Kandy	67.0	2.03	-20.7
Matara	66.6	2.02	-21.1
Nuwara Eliya	67.9	2.05	-19.9
Colombo	88.1	2.50	- 2.3
Ratnapura	92.5	2.60	+ 1.6
Dry zone			
Jaffna	65.2	1.98	-22.7
Matale	102.2	2.79	+ 9.0
Puttalam	107.0	2.89	+12.9
Kurunegala	111.5	2.97	+16.0
Badulla	117.2	3.08	+20.3
Hambantota	127.3	3.27	+27.7
Mannar	146.6	3.60	+40.6
Trincomalee	147.9	3.62	+41.4
Batticaloa	160.5	3.82	+49.2
Anuradhapura	295.9	5.53	+116.0
Vavuniya	309.7	5.67	+121.5

Source: Based on data in tables 13 and 16.

Table 18. Crude death rates by district, Sri Lanka, selected years, 1930-1970
(per thousand population at midyear)

District ^{a/}	1930	1935	1940	1945	1946	1947	1950	1960	1970	Average 1930-1945	Average 1946-1960
Group A ^{b/}											
Kalutara	21.2	17.9	14.4	16.1	14.4	12.4	11.1	7.6	7.0	16.0	10.0
Galle	22.2	20.1	19.4	18.6	17.0	14.0	13.3	8.2	7.3	19.3	11.8
Group B ^{c/}											
Colombo	21.9	24.6	17.4	20.5	18.2	14.6	14.3	8.6	7.8	19.0	12.3
Kandy	21.6	49.1	18.0	20.4	18.4	13.8	13.7	10.3	8.2	21.4	12.6
Nuwara Eliya	19.3	30.3	19.8	18.5	15.7	13.1	12.7	10.7	9.9	21.2	12.6
Matara	24.7	24.2	25.7	16.4	17.3	11.3	11.5	7.5	6.5	20.6	10.2
Jaffna	26.8	22.7	20.8	22.0	16.7	15.1	12.5	9.5	7.5	22.8	11.8
Ratnapura	28.6	32.3	20.2	18.9	17.9	12.7	12.4	9.4	8.9	20.0	11.9
Kegalla	18.9	58.8	14.5	20.6	16.7	11.0	10.7	7.3	6.5	18.5	10.1
Group C ^{d/}											
Matale	33.4	62.2	19.5	27.9	28.9	16.8	13.0	9.8	7.6	27.0	13.5
Hambantota	49.3	43.9	37.7	26.4	27.4	18.2	11.4	6.6	5.7	35.8	11.5
Mannar	41.4	35.2	25.3	30.3	31.2	17.4	12.5	10.5	8.1	31.8	13.1
Vavuniya	39.4	42.1	26.7	33.6	21.6	17.3	11.9	9.1	6.3	32.5	11.6
Batticaloa	33.8	31.1	29.5	25.4	30.2	17.5	15.0	11.3	10.4	29.7	14.5
Trincomalee	29.3	34.8	23.3	23.6	25.1	17.0	11.2	9.6	6.1	26.4	11.9
Kurunegala	29.9	70.4	24.9	31.5	31.3	16.0	10.0	7.0	6.4	28.2	11.3
Puttalam	35.2	41.9	27.0	34.8	24.1	19.1	11.9	8.0	7.6	32.7	11.9
Anuradhapura	39.0	54.5	29.0	31.6	26.6	18.2	10.1	6.6	6.0	34.2	11.0
Badulla	25.4	33.4	21.9	21.1	17.2	13.4	12.4	9.1	6.4	23.6	12.1
Sri Lanka	24.8	35.7	20.1	21.5	19.8	14.0	12.4	8.6	7.5	21.8	11.7

Sources: Rates for the years 1930 to 1960 are from Peter Newman, *Malaria Eradication and Population Growth with Special Reference to Ceylon and British Guiana*, (Ann Arbor, School of Public Health, The University of Michigan, 1965), appendix table A3; rates for 1970 from *Bulletin of Vital Statistics 1974* (Colombo, Department of Census and Statistics), table XVII.

Notes: ^{a/} The 19 revenue districts are classified from the point of view of pre-1946 malaria endemicity and epidemicity into three groups, A, B and C. All districts in group A and B, except Jaffna, fall within the wet zone. The districts in group C together with the Jaffna District constitute the dry zone.

^{b/} Group A consists of two districts which were not subject either to endemic malaria or regional epidemics. Small localized epidemics have been recorded occasionally in certain parts of these districts, but these were due to local disturbances and did not affect the health of the district as a whole.

^{c/} Group B districts have had small sub-districts which were moderately endemic while the greater portions were ordinarily healthy.

^{d/} Group C consists of districts where greater portions were endemic or even hyper-endemic to malaria with only a few localities here and there which were considered healthy.

zone districts have declined faster than in the wet zone districts and the present level of death rates in many dry zone districts is lower than the rate for the country as a whole.

The crude birth rates in almost all dry zone districts registered substantial increases after 1947^{6/} and by the early 1950s reached levels very much higher than the wet zone districts and the national average (table 19). This increase in fertility was due in part to the fact that malaria eradication by lowering mortality enabled more mothers to live through their full reproductive period; in part to the in-migration of young families at their period of maximum fertility into previously malarial areas; in part to a change in the age structure of the dry zone population resulting in a heavy concentration in the early reproductive age groups; and possibly to a decline in the number of malaria-related pregnancy wastages^{7/} and increase in the incidence of marital coitus in a population no longer weakened by endemic malaria. Though since 1960, the birth rates of the dry zone districts have declined gradually in conformity with the national pattern, their present rates are higher than those in the wet zone districts and the country as a whole. Thus the sharp decline in the death rates coupled with increases in the birth rates resulted in increases in the rates of natural increase of the population in the dry zone districts during the post-1946 period.

Prior to 1946, most dry zone districts were sparsely populated and the vast extent of fertile land in these districts remained uncultivated. Malaria was undoubtedly one of the key factors in the depopulation of the dry zone and it had for long defied all efforts at resettlement of that area. The eradication of malaria made these districts healthy and habitable and rendered easy the many and varied operations connected with land development and cultivation. The government-sponsored and government-aided settlement schemes therefore came to be situated in the

6/ This trend has been confirmed by an independent study of fertility trends based on 1946 census data and the vital statistics for the subsequent six years. "But perhaps, the most significant trend in fertility has developed in the 'ex-malarial' regions where the spectacular drop in the death rate has been followed by an almost equally spectacular rise in birth rate". See, R. Raja Indra, *Fertility Trends in Ceylon*, Monograph No. 3, (Colombo, Department of Census and Statistics, 1954), p. 4.

7/ This is to a certain extent borne out by the fact that the total number of births in Sri Lanka during the worst malarial years, 1935 and 1936 were 192,755 and 192,060 respectively compared to 206,512 in 1934 and 216,072 in 1937.

dry zone districts.^{8/} Over the years there was a steady flow of migrants into these districts, particularly from the more densely-populated wet zone districts, to be settled in the new colonization schemes as well as to engage in the expanding service occupations. Thus, internal migration also contributed largely to the accelerated increase in population of the dry zones between 1946 and 1971.

It may be noted that in the Jaffna District, the most northerly in Sri Lanka, the average annual rates of population growth have been very low, lower than the national average, during all three periods between 1871 and 1971. Though relatively free from epidemic and endemic diseases most of the time, Jaffna has nevertheless been a population-losing district. Because of the unfavourable climatic and soil conditions, a large number of Jaffnese have been moving out of the district annually in search of economic opportunities in the more favourable areas of the country. As noted in chapter I, a number of Jaffnese migrated to the Federated Malay States for white-collar jobs during the first half of this century. Hence the low rates of population growth observed in respect of this district.

C. RURAL-URBAN DISTRIBUTION

A rural-urban classification of the population was regularly carried out in Sri Lanka from the first census of 1871. In spite of the significant differences between the population living in rural villages and those living in urban cities, it is not always possible to distinguish for statistical purposes, a 'rural area' from an 'urban area'. Some cities and towns contain within their limits irrigation tanks, paddy fields and even forests, while some of the larger villages are more densely populated than certain areas considered as urban. "Size, compactness and certain architectural or industrial features enter into the definition of a town. There are also certain social characteristics to be considered"^{9/}. Nevertheless, the urban population has been defined to include those persons living within municipal, urban council and town council limits.

8/ For detailed discussion on this aspect, see ESCAP, *Comparative Study of Population Growth and Agricultural Change - Case Study of Sri Lanka*, Asian Population Studies Series No. 23D (Bangkok, 1975).

9/ P. Arunachalam, *The Census of Ceylon 1901*, vol. I, (Colombo, Government Printer, 1902), p. 45. Also see chapter IV for discussion on the definition of urban areas in Sri Lanka.

Table 19. Crude birth rates by district, Sri Lanka, selected years, 1930-1970
(per thousand population at midyear)

District ^{a/}	1930	1935	1940	1945	1946	1947	1950	1960	1970	Average 1930-1945	Average 1946-1960
Group A ^{b/}											
Kalutara	35.1	30.9	32.0	31.6	37.4	32.5	33.2	28.1	26.7	31.9	31.6
Galle	42.3	36.5	34.7	33.1	41.0	36.0	36.1	32.0	26.2	36.1	34.4
Group B ^{c/}											
Colombo	31.8	26.5	30.4	30.7	38.4	35.5	36.8	34.4	27.9	29.8	35.4
Kandy	39.6	36.6	40.6	40.0	42.1	42.8	40.0	38.9	28.8	39.6	39.5
Nuwara Eliya	37.1	30.3	43.8	40.5	40.2	43.0	41.7	37.5	27.6	43.3	39.4
Matara	43.8	41.7	31.7	37.3	39.8	38.8	39.7	35.9	28.2	38.5	39.0
Jaffna	33.7	31.9	32.2	31.6	34.5	36.5	37.7	32.1	28.8	32.3	34.2
Ratnapura	40.1	37.2	36.9	38.4	40.7	41.0	42.7	36.4	31.1	38.4	39.4
Kegalla	43.0	28.9	34.4	36.5	34.4	39.8	36.9	32.4	24.0	36.6	35.6
Group C ^{d/}											
Matale	39.7	34.5	40.1	42.6	37.3	48.0	46.1	42.2	32.0	41.3	43.7
Hambantota	42.0	39.4	33.0	40.5	35.4	40.2	50.3	43.0	29.7	39.4	45.9
Mannar	34.2	29.6	36.2	31.5	29.3	33.8	42.0	40.8	36.1	33.0	29.3
Vavuniya	37.2	29.1	35.9	34.1	36.0	39.1	44.8	57.3	37.0	33.6	47.0
Batticaloa	42.9	42.0	41.6	42.6	41.0	40.9	43.5	49.5	40.0	40.6	43.7
Trincomalee	40.6	32.8	38.2	28.9	31.1	29.5	40.5	46.0	38.1	34.4	40.7
Kurunegala	40.5	29.2	35.3	38.2	29.4	42.6	47.7	37.8	27.2	39.5	41.3
Puttalam	31.0	28.4	24.8	32.5	37.7	41.8	48.7	42.1	31.3	33.7	43.9
Anuradhapura	38.6	36.3	36.0	29.0	38.1	38.6	44.6	47.9	36.5	36.7	44.2
Badulla	42.6	44.1	39.8	44.9	38.8	39.7	42.7	42.2	32.7	43.5	41.8
Sri Lanka	38.1	33.6	34.9	35.9	37.5	38.5	39.7	36.6	29.4	36.0	37.8

Sources: Rates for the years 1930 to 1960 are from Peter Newman, *Malaria Eradication and Population Growth with Special Reference to Ceylon and British Guiana*, (Ann Arbor, School of Public Health, The University of Michigan, 1965), appendix table A2; rates for 1970 from *Bulletin of Vital Statistics 1974* (Colombo, Department of Census and Statistics), table IX.

Notes: Same as table 18.

Table 20 gives the rural-urban distribution of the population in all census years from 1871 to 1971

It is evident from the table that while between 1871 and 1971, the total population increased by over 5 times and the urban population by over 10 times, the proportion of urban population to total population has only a little more than doubled itself. About 22 per cent of Sri Lanka's population today live in urban areas. Although this proportion is higher than the corresponding proportions for Afghanistan, India, Indonesia, Lao Peoples' Democratic Republic, Nepal and Thailand, it is still lower than the proportions ob-

taining in many other ESCAP countries as is evident from table 21.

The urban-rural ratio also varies from province to province, some provinces having a greater proportion of their population living in urban areas than the others as is clear from the data in table 22. In 1971 while about 22 per cent of the country's total population lived in areas classed as urban, in three provinces, viz., Western, Northern and Eastern, the urban proportions have been very much higher. Between 1946 and 1971, there have been changes in the rural-urban ratios of the population living in each of the provinces, the changes being more marked in some

Table 20. Distribution of the population by urban and rural areas, Sri Lanka, in censuses 1871 to 1971

Census year	Total population	Urban population	Rural population	Percentage of urban	Percentage of rural
1871	2,400,380	260,376	2,140,004	10.8	89.2
1881	2,759,738	281,065	2,478,673	10.2	89.8
1891	3,007,789	321,413	2,686,376	10.7	89.3
1901	3,565,954	414,025	3,151,929	11.6	88.4
1911	4,106,350	542,945	3,563,405	13.2	86.8
1921	4,498,605 ^{a/}	637,870	3,860,735	14.2	85.8
1931	5,306,863	737,272	4,569,591	13.9	86.1
1946	6,657,339	1,023,042	5,634,297	15.4	84.6
1953	8,097,895	1,239,133	6,858,762	15.3	84.7
1963	10,582,064	2,016,285	8,565,779	19.1	80.9
1971	12,689,897	2,848,116	9,841,781	22.4	77.6

Sources: A.G. Ranasinha, *Census of Ceylon 1946, vol. I, part II, Statistical Digest* (Colombo, Department of Census and Statistics, 1950), table 6a; H.E. Peries *Census of Ceylon 1953, vol. I. General Report* (Colombo, Department of Census and Statistics, 1957), tables 7 and 9; Government of Sri Lanka, *Census of Population 1971, vol. II, All Island Tables, part I, General Characteristics of the Population* (Colombo, Department of Census and Statistics, 1975), table 4.

Note: a/ Includes a miscellaneous population of 751 not distributed among the zones.

Table 21. Percentage urban population in selected ESCAP countries

Country	Year	Percentage urban population
Afghanistan	1971	15.00
Australia	1971	85.56
Brunei	1971	63.63
India	1971	19.91
Indonesia	1971	17.42
Iran	1971	41.32
Japan	1970	72.17
Lao People's Democratic Republic	1970	14.99
Malaysia	1970	27.88
Mongolia	1969	44.04
Nepal	1971	4.00
New Zealand	1971	81.35
Philippines	1970	31.74
Republic of Korea	1970	41.17
Sri Lanka	1971	22.36
Thailand	1970	13.24

Source: United Nations, *Demographic Yearbook 1973* (Sales No. E/F. 73. XIII. 1), table 5.

than in others. In all years, the proportion of urban population to total population in the Western Province has been more than twice that for the country as a whole. Today nearly 48 per cent of the population of Western Province live in urban areas. This is understandable since it contains the largest number of the country's urban areas including the capital city of Colombo. In 1971, nearly 57 per cent of Sri Lanka's urban population was concentrated in the Western Province alone.

In 1946 and 1953, the percentage of the population living in the urban areas in the Northern Province was lower than the national proportion. But in 1971, the urban proportion of Northern Province was significantly higher than that of the whole country, having more than doubled itself in about 18 years. The North-Western, North-Central, Uva and Sabaragamuwa Provinces appear to be the least urbanized with less than 10 per cent of the population of these provinces living in urban areas.

Table 22. Rural-urban distribution of the population by province, Sri Lanka, 1946, 1953 and 1971 (percentage)

Province	1946		1953		1971	
	Urban	Rural	Urban	Rural	Urban	Rural
Sri Lanka	15.37	84.63	15.30	84.70	22.44	77.56
Western Province	33.51	66.49	34.38	65.62	48.08	51.92
Central Province	8.87	91.13	9.18	90.82	10.88	89.12
Southern Province	10.88	89.12	10.45	89.55	15.30	84.70
Northern Province	13.04	86.96	13.53	86.47	30.37	69.63
Eastern Province	16.32	83.68	12.36	87.64	24.21	75.79
North-Western Province	4.86	95.14	4.93	95.07	6.74	93.26
North-Central Province	8.82	91.18	8.02	91.98	9.98	90.02
Uva Province	4.39	95.61	4.73	95.27	7.48	92.52
Sabaragamuwa Province	2.61	97.39	2.75	97.25	7.30	92.70

Source: Based on the data of 1946, 1953 and 1971 censuses, Department of Census and Statistics.

D. DISTRIBUTION BY CLIMATIC ZONES

In the context of development policies in Sri Lanka, a more meaningful picture is obtained by analysing the distribution of population by the two major agro-climatic zones, viz., wet zone and dry zone. As noted earlier, the wet zone consists of eight districts (Colombo, Kalutara, Kandy, Nuwara Eliya, Galle, Matara, Ratnapura and Kegalla) while the dry zone comprises the other 11 districts^{10/} (Matale, Hambantota, Jaffna, Mannar, Vavuniya, Batticaloa, Trincomalee, Kurunegala, Puttalam, Anuradhapura and Badulla). The distribution of the population by these two zones in all census years from 1871 to 1971 are shown in table 23.

Table 23. Distribution of population by climatic zones, Sri Lanka, censuses 1871 to 1971

Census year	Total population		Wet zone population		Dry zone population	
	Number	Percentage	Number	Percentage	Number	Percentage
1871	2,400,380	100.0	1,401,319	58.4	999,061	41.6
1881	2,759,738	100.0	1,645,946	59.6	1,113,792	40.4
1891	3,007,789	100.0	1,819,613	60.5	1,188,176	39.5
1901	3,565,954	100.0	2,234,933	62.7	1,331,021	37.3
1911	4,106,350	100.0	2,597,042	63.2	1,509,308	36.8
1921	4,497,854 ^{a/}	100.0	2,871,443	63.8	1,626,411	36.2
1931	5,306,863	100.0	3,493,938	65.8	1,812,925	34.2
1946	6,657,339	100.0	4,413,588	66.3	2,243,751	33.7
1953	8,097,895	100.0	5,228,872	64.6	2,869,023	35.4
1963	10,582,064	100.0	6,561,251	62.0	4,020,813	38.0
1971	12,689,897	100.0	7,677,694	60.5	5,012,203	39.5

Source: Same as table 22.

Note: a/ Excludes a miscellaneous population of 751 not distributed among the zones.

Throughout the 100-year period, 1871 to 1971, over 58 per cent of the population lived in the wet zone areas which together constitute only 23.1 per cent of the total land area. There was a gradual increase in this proportion from 58.4 per cent in 1871 to 66.3 per cent in 1946, and consequently a decline in the proportion of persons living in the dry zone areas, caused mainly by the prevalence of malaria in most parts of the dry zone. As noted earlier, the reduction in mortality through malaria control, the increase in fertility and large scale immigration effected through a deliberate policy of in-migration effected through a deliberate policy of rapid increase in the population of the dry zone areas between 1946 and 1971. Though the proportion of population living in dry zone areas increased after 1946, even today these areas contain only about 40 per cent of the country's total population.

^{10/} Batticaloa, Anuradhapura and Badulla Districts also include the present Amparai, Polonnaruwa and Monaragala Districts respectively.

E. POPULATION DENSITY

The area of Sri Lanka, including its inland waters, is about 25,332 square miles. As noted in chapter I, the enumerated population in 1971 was 12,689,897 persons. If the people of Sri Lanka were equally distributed over this area, there would have been 501 persons on every square mile in 1971 compared with about 95 persons in 1871. It has, however, to be noted that the over-all density figures are rather meaningless because of the heavy concentration of people in limited areas within the country. Table 24 gives the density of population in selected ESCAP members. It will be seen that Sri Lanka is the fifth most densely populated surpassed only by

Table 24. Density of population in selected ESCAP countries

Country	Year	Density of population (number of persons per sq mi)
Afghanistan	1971	69.9
Australia	1971	4.3
Burma	1970	105.4
China	1970	205.8
Hong Kong	1971	986.6
India	1971	434.2
Indonesia	1971	205.4
Iran	1971	47.4
Japan	1970	726.2
Malaysia	1970	73.6
Nepal	1971	212.6
New Zealand	1971	275.9
Philippines	1970	316.7
Republic of Korea	1970	826.4
Singapore	1970	926.1
Sri Lanka	1971	500.9
Thailand	1970	173.3

Source: Computed on the basis of information published in the United Nations, *Demographic Yearbook*, 1971.

Hong Kong, Singapore, the Republic of Korea and Japan.

Table 25 gives the density of population by provinces and districts for all census years from 1871 to 1971. Because of the differences in their areas as well as in the sizes and rates of growth of their population, the various provinces and districts have differing densities. The Western Province which in all years contained the largest share of the total population was also the most densely populated province. The urban industrial development centering around Colombo and the intensive utilization of lands in rice and estate crops has resulted in a total density of 2,376 persons per square mile in 1971. The density of the Western Province has always been over four times the average national density and, in almost all years, over two and a half times the density of the Central Province, the second most densely populated. North-Central Province which has the largest share of the total land area, has been the most sparsely populated in all years. In 1931 its density was about one-ninth the national density while in 1971 it was about one-fourth. The density of Western Province today is about 18 times that of North-Central Province.

The most densely populated district is the Colombo District in the Western Province. Its density in 1971 was over 6.5 times that of the national density, about 2.5 times the second most densely populated Kandy District and about 51 times the density of the most sparsely populated, Vavuniya District in the Northern Province.

The density of population also varies from one district to another within the same province. For instance, the density of Colombo District is about three times that of Kalutara, while that of Kandy is over two times that of Matale and about 1.5 times that of Nuwara Eliya. Similarly in the Southern Province, the Matara District has a density which is over 3.5 times the density of the Hambantota District. It is in the Northern and the Uva Provinces that disparities in District densities are more marked. In 1971, the density of Jaffna District was nearly 11 times the density of Vavuniya District and nine times that of the Mannar District, while Badulla District had a density which was also about nine times the density of Monaragala District.

On the basis of the 1971 census data, the various districts could be classified into the following density groups:

Density group	District
Below 200 persons per sq mi.	Mannar, Vavuniya, Anuradhapura, Polonnaruwa, Trincomalee, Monaragala
200-400 persons per sq mi.	Puttalam, Chilaw, Batticaloa, Amparai, Hambantota,
400-800 persons per sq mi	Jaffna, Kurunegala, Matara, Badulla, Ratnapura
800-1000 persons per sq mi	Nuwara Eliya
1,000-2,000 persons per sq mi	Kalutara, Kandy, Galle, Matara, Kegalla
2,000 and over	Colombo

Low density of population, below 400 persons per square mile, is observed in 10 districts, all of which before 1946 were malarial and therefore experienced high death rates. Furthermore, the topography and low rainfall was not favourable to plantation agriculture which in some other districts was the main cause of in-migration. The resource base for industrial development is also poor thus accounting for the low population density.

Intermediate density of population, 400 to 1,000 persons per square mile, is found in six districts. Some of these districts are in the intermediate zone (partially wet zone and partially dry zone) adjoining the high density districts while others are in the plantation areas with a substantial proportion of immigrant labour. Jaffna district, which is an exception, has highly intensive agricultural sector.

High densities (over 1,000 persons per square mile) are observed in the other six districts - Colombo, Kalutara, Kandy, Galle, Matara and Kegalla. These districts are more urbanized than the others, and were free from malaria. There is an intensive utilization of agricultural land and many rural people engage in non-agricultural occupations. On the whole, adequate rainfall, alternating broad alluvial valleys, cash crops and a highly developed system of communications and health services over a longer period of time has ensured a high density of population in these districts. Figure 6 which shows the population density in 1971 corresponds closely to a map of agricultural utilization, rainfall or topography.

Table 25. Density a/ of population by province and district b/ Sri Lanka, as in censuses 1871 to 1971
(per square mile)

Province/district	1871	1881	1891	1901	1911	1921	1931	1946	1953	1963	1971
Sri Lanka	94.8	108.9	118.7	140.8	162.1	177.6	209.5	262.8	319.7	417.7	500.9
Western province	402.0	468.9	532.5	642.9	772.6	870.7	1,009.1	1,310.7	1,558.9	1,982.4	2,375.5
Colombo	532.0	626.6	716.2	854.7	1,023.0	1,142.2	1,337.8	1,757.3	2,114.1	2,731.1	3,306.2
Kalutara	233.7	264.6	294.4	368.5	448.1	519.0	583.2	732.0	839.4	1,012.4	1,169.6
Central Province	159.6	206.8	207.2	272.0	293.5	313.4	416.3	495.7	596.8	786.4	905.0
Kandy	254.0	315.5	315.5	413.2	446.9	474.9	643.4	778.5	919.6	1,142.0	1,299.9
Matale <u>c/</u>	83.3	96.0	84.8	102.2	120.1	129.2	143.7	172.6	222.8	331.9	408.7
Nuwara Eliya	122.8	208.2	231.3	323.0	328.1	352.8	497.5	565.8	686.4	839.4	950.2
Southern province	185.7	202.0	228.2	264.1	293.0	312.7	359.3	447.9	526.2	666.6	774.3
Galle	298.1	321.4	341.7	395.7	446.1	480.1	557.4	704.9	803.9	983.4	1,127.1
Matara	297.8	315.7	369.0	423.4	472.3	495.6	588.7	731.3	859.1	1,070.1	1,218.6
Hambantota	60.1	71.0	88.2	103.5	109.1	118.1	122.8	147.8	189.1	270.8	336.0
Northern province	82.1	88.2	93.1	99.4	107.8	109.3	116.3	139.8	166.4	216.2	255.0
Jaffna	246.4	265.9	279.7	301.3	327.2	331.0	355.9	425.4	492.5	613.4	702.6
Mannar	21.0	22.1	25.4	25.9	26.6	26.5	26.1	32.7	45.3	62.4	80.7
Vavuniya	10.5	10.6	10.6	10.3	11.8	12.8	12.5	15.9	23.9	46.8	64.9
Eastern province	29.3	33.2	38.7	45.2	47.8	50.2	55.3	72.7	92.3	168.5	221.3
Batticaloa <u>c/</u>	33.4	37.7	43.9	52.0	55.1	56.8	62.7	72.8	96.9	193.0	252.5
Amparai	18.6	21.2	24.6	27.1	28.4	32.5	35.8	72.4	80.1	179.8	231.5
Trincomalee	91.5	97.3	106.1	117.3	143.9	163.2	181.4	221.4	283.6	383.0	465.6
North-Western province	112.8	116.7	124.8	135.3	166.4	192.1	215.4	263.1	339.7	462.4	556.3
Kurunegala	58.1	66.7	74.1	83.8	93.2	99.1	107.4	124.4	151.9	201.1	251.9
Puttalam	58.1	66.7	74.1	83.8	93.2	99.1	107.4	124.4	151.9	201.1	251.9
Chilaw	58.1	66.7	74.1	83.8	93.2	99.1	107.4	124.4	151.9	201.1	251.9
North Central province	15.9	16.5	18.8	19.7	21.5	24.1	24.3	34.8	57.2	95.1	133.4
Anuradhapura	15.9	16.5	18.8	19.7	21.5	24.1	24.3	34.8	57.2	95.1	133.4
Polonnaruwa <u>c/</u>	39.4	50.6	48.6	57.0	66.1	71.4	92.7	113.6	142.5	168.8	208.6
Uva province	39.4	50.6	48.6	57.0	66.1	71.4	92.7	113.6	142.5	168.8	208.6
Badulla	39.4	50.6	48.6	57.0	66.1	71.4	92.7	113.6	142.5	168.8	208.6
Monaragala <u>c/</u>	104.4	119.3	136.7	170.0	215.9	249.3	305.6	393.9	471.9	594.2	695.4
Sabaragamuva province	73.7	84.7	86.4	106.3	132.7	162.3	211.0	274.8	337.1	436.7	528.9
Ratnapura	164.0	186.8	234.6	294.1	377.8	418.8	490.0	625.8	734.6	901.1	1,019.9
Kegalla	164.0	186.8	234.6	294.1	377.8	418.8	490.0	625.8	734.6	901.1	1,019.9

Notes: a/ Densities for the years 1871 to 1953 have been computed on the basis of the 1953 areas while densities for 1963 and 1971 are based on the 1963 areas.

b/ Between 1871 and 1971, there were changes in the number of districts. Chilaw District in the North-Western Province which came into existence about the time of the 1891 census was, after 1953, merged with the Puttalam District in the same province. Between 1953 and 1963, the Batticaloa District in the Eastern Province was divided into Batticaloa and Amparai Districts; the Anuradhapura District in the North-Central Province into the Anuradhapura and Polonnaruwa Districts; and Badulla District in the Uva Province into Badulla and Monaragala Districts.

c/ There were changes in the areas of some of the districts between 1953 and 1963. About 598 square miles from the former Batticaloa District was included in the newly formed District of Monaragala, thus reducing the area of the Eastern Province and increasing the area of the Uva Province by this extent. Similarly about 132 square miles from Matale District was annexed to the newly created Polonnaruwa District, thus altering by this extent the areas of Central and North Central Provinces.

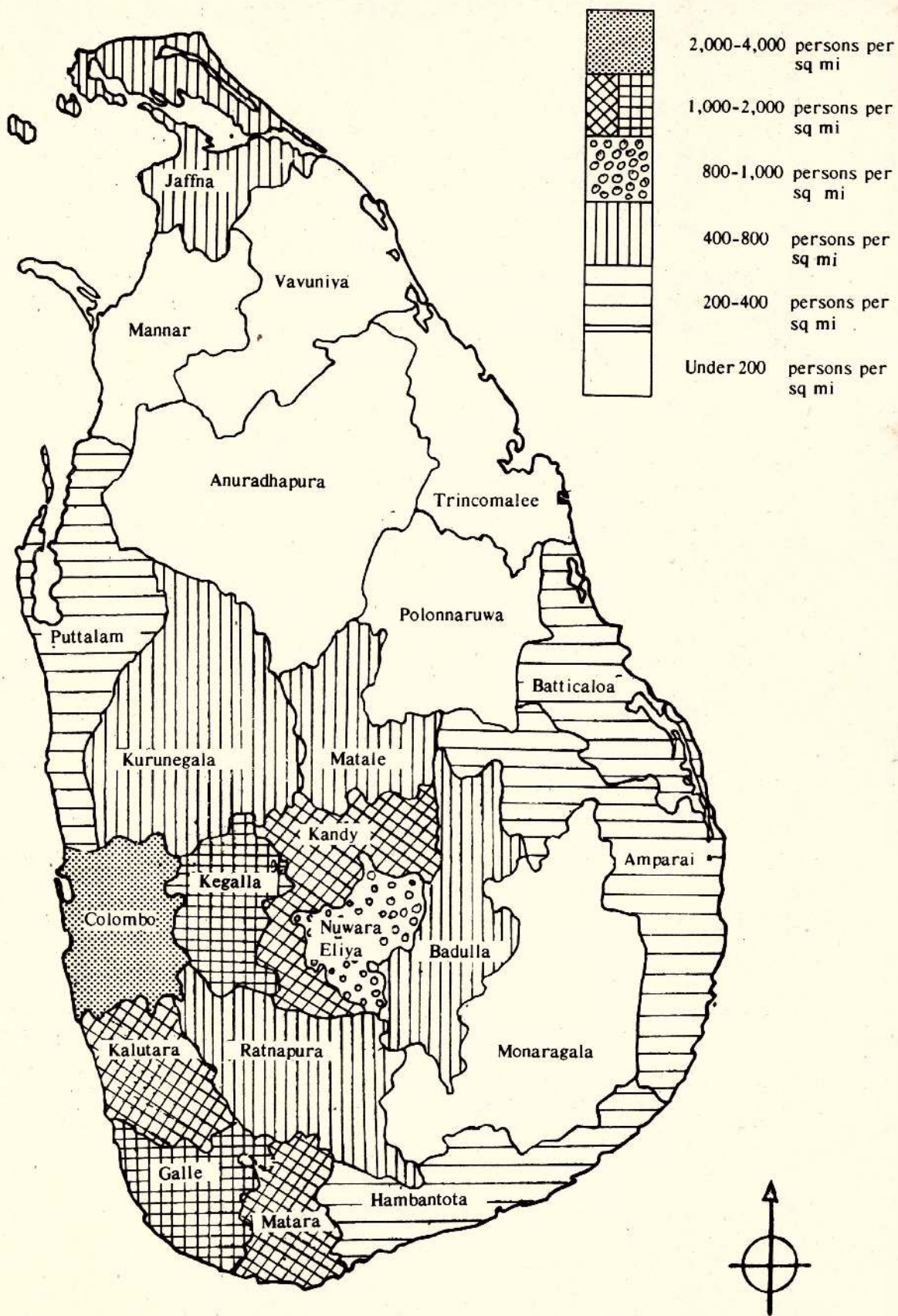


Figure 6. Sri Lanka, population density 1971

An analysis of population density by the two major climatic zones, dry and wet zones, is given in table 26.

As is to be expected, the wet zone, in which nearly 60 per cent of the country's population is concentrated in about 23 per cent of the total land area, has been the most densely populated region. In all years, its population density has been over 4.5 times the density of the dry zone and over 2.5 times the density of the country as a whole. In spite of a recent rapid increase in population, the dry zone areas are still very sparsely populated with only 25 persons per square mile in 1971. This is a little over half the average density of the country and about one-fifth the density of the wet zone.

The wide disparity in population density from

district to district and region to region is thus one of the main features of the population of Sri Lanka.

Table 26. Density of population by climatic zone, 1871-1971

Census year	Density of population (per sq mi)		
	Sri Lanka	Wet zone	Dry zone
1871	94.8	239.7	51.3
1881	108.9	281.6	57.2
1891	118.7	311.3	61.0
1901	140.8	382.3	68.3
1911	162.1	444.2	77.5
1921	177.6	491.2	83.5
1931	209.5	597.7	93.0
1946	262.8	755.0	115.1
1953	319.7	904.7	147.2
1963	417.7	1,122.3	206.3
1971	500.9	1,313.4	257.2

CHAPTER III

INTERNAL MIGRATION

A. INTRODUCTION

Migration is a fact of life. It is a means by which a number of people are redistributed in terms of resources, labour force participation, industrial attachment, job opportunities, education, health and housing facilities etc. In Sri Lanka, as in practically all countries, the people are free to move to any part and follow the call of opportunity wherever it leads within the borders of the country. In fact, internal migration has for long been an important means of population redistribution in the country. There have been movements of people from rural to urban, and from rural to other rural areas. These movements have taken place both with and without government sponsorship and assistance. The development and expansion of towns both as commercial and administrative centres have attracted a large number of people to the urban areas. Even more important have been the State-aided village expansion and colonization or land development schemes which have resulted in a shift of people from the densely populated to the sparsely populated regions of the country.

However, a study of trends in internal migration in Sri Lanka is handicapped by a lack of adequate information. The most common and reliable source of data on population mobility is the census^{1/} which collects information on place of birth, place of residence at a fixed date, duration of residence etc. In Sri Lanka, though place of birth questions were included in all censuses, data on place of birth by place of residence were collected and published for the first time at the 1946 census of population. Similar data are available from the subsequent censuses held in 1953, 1963 and 1971. Hence the analysis of internal migration in Sri Lanka is limited to the three intercensal periods, 1946-1953, 1953-1963 and 1963-1971.

Usually three methods are used for measuring the levels and trends in internal migration. First, there is the Vital Statistics Method, which assumes that the intercensal increase in population comprises a natural increase (the surplus of births over deaths) and a migratory increase (the surplus of immi-

^{1/} In some countries, the continuous population register constitutes an important source of statistical information on internal migration, but this has not yet been adopted in Sri Lanka.

grants over emigrants) so that the net in-migration into an area is the difference between the intercensal increase and the surplus of births over deaths. Second, there is the Forward Survival Ratio Method which estimates, with the use of life tables, the expected population of an area at a subsequent census and claims that the net in-migration into that area is the difference between the actual census count and the calculated anticipated population. Third, there is the Census Data Method which makes use of information on place of residence and place of birth. In-migration into an area consequently constitutes the sum of those resident in the area but born outside, and out-migration the sum of those born in an area but not resident there. Each method has its own peculiar advantages and disadvantages. Suffice it to say that the third method, which is the most commonly used for the actual study of migratory movements, involves errors only in census enumeration while the other two involve errors in birth and death registration as well and that this method presents us with a dynamic picture permitting the study of both the direction and intensity of migration while the former two present us with a static picture that permits the study of only net migration".^{2/} All or some of these methods have been used for the study of internal migration during various intercensal periods.

B. INTERCENSAL PERIOD, 1946-1953

The volume and pattern of internal migration during the 1946-1953 intercensal period has been the subject of two studies, one in 1960 by Vamathevan, and the other in 1965 by Abhayaratne and Jayewardene^{3/}. The study by Vamathevan used all three methods mentioned in the preceding section. The estimates of net migration arrived at by the three methods for the various districts are shown in table 27, while the corresponding migration rates are given in table 28.

It will be observed that while there has been

^{2/} O.E.R. Abhayaratne and C.H.S. Jayewardene, "Internal migration in Ceylon", *The Ceylon Journal of Historical and Social Studies*, vol. 8, Nos. 1 and 2, January-December 1965, pp. 69-70.

^{3/} *Ibid.*, and S. Vamathevan, *Internal Migration in Ceylon 1946-1953*, Monograph No. 13, (Colombo, Department of Census and Statistics, 1961).

Table 27. Comparison of net migration 1946-1953 obtained by the three methods
(estimation of net migration)

District	Survival ratio (SR)			Vital statistics (VS)			Place of birth (lifetime 1953) (total)	Place of birth (1946-1953) (total)	Average of S.R. and V.S.
	Male	Female	Total	Male	Female	Total			
Colombo	23,241	26,912	50,153	22,387	19,624	42,011	28,543	13,438	46,100
Kalutara	-12,699	-4,117	-16,816	-6,960	-4,200	-11,160	-21,421	-5,532	-14,000
Kandy	-20,070	-10,912	-30,982	-16,776	-7,294	-24,070	-59,200	-43,181	-27,500
Matale	1,113	1,220	2,333	5,176	2,360	7,536	15,307	10,701	4,900
Nuwara Eliya	-2,163	-3,403	-5,566	-851	-2,015	-2,866	1,524	-2,041	-4,200
Galle	-10,540	-3,612	-14,152	-11,298	-4,447	-15,745	-77,327	-20,695	-15,000
Matara	-5,953	-6,760	-12,713	-7,546	-8,566	-16,112	-64,918	-8,915	-14,400
Hambantota	-900	1,690	790	461	2,686	3,147	12,864	2,065	2,000
Jaffna	-277	1,939	1,662	-4,080	3,009	-7,089	-46,630	-14,237	-2,700
Mannar	3,809	1,860	5,669	3,899	1,927	5,826	4,788	345	5,700
Vavuniya	3,462	1,712	5,174	2,417	1,676	5,093	8,901	5,212	5,100
Batticaloa	16,946	2,301	19,247	20,830	6,054	26,884	10,865	19,851	23,000
Trincomalee	-7,565	1,919	-5,646	-7,475	2,864	-4,611	22,050	-5,527	-5,100
Kurunegala	11,772	6,781	18,553	15,561	8,683	24,247	57,460	21,495	21,400
Puttalam	2,496	2,127	4,623	2,213	2,273	4,486	15,198	5,717	4,500
Chilaw	-24	698	674	2,100	641	2,741	-1,397	-534	1,700
Anuradhapura	26,099	16,176	42,275	29,735	20,510	50,245	80,541	42,535	46,200
Badulla	3,627	-2,288	1,339	7,622	2,136	9,758	9,465	4,242	5,500
Ratnapura	-2,283	-2,250	-4,533	-989	118	-871	13,776	-8,345	-2,700
Kegalla	-12,990	-9,577	-22,567	-9,344	-4,357	-13,701	-7,348	-15,876	-18,100

Source: S. Vamathevan, *Internal Migration in Ceylon, 1946-1953*, Monograph No. 13 (Colombo, Department of Census and Statistics, 1961), table 1.

Table 28. Migration rates 1946-1953 by the three methods

District	Survival ratio (SR)	Vital statistics (VS)	Place of birth 1946-1953	Lifetime 1953	Average of V.S. and S.R.
Colombo	3.20	2.69	0.90	1.80	2.94
Kalutara	- 3.43	- 2.28	- 1.00	- 4.02	- 2.85
Kandy	- 4.00	- 3.10	- 5.81	- 7.12	- 3.55
Matale	1.31	4.22	6.77	8.71	2.76
Nuwara Eliya	- 1.86	- 0.97	- 0.83	- 0.50	- 1.41
Galle	- 2.87	- 4.00	- 3.73	-12.95	- 3.43
Matara	- 3.32	- 4.22	- 2.02	-13.70	- 3.77
Hambantota	0.46	1.84	1.30	7.21	1.15
Jaffna	0.42	- 1.50	- 2.92	- 8.88	- 0.54
Mannar	15.07	15.49	12.95	15.80	15.28
Vavuniya	77.73	17.45	24.74	36.80	17.59
Batticaloa	8.13	11.35	8.47	4.22	9.74
Trincomalee	- 7.05	- 5.77	-11.10	3.53	- 6.41
Kurunegala	3.34	4.36	4.88	10.20	3.85
Puttalam	9.07	8.84	15.34	36.07	8.95
Chilaw	0.44	1.77	- 0.35	- 0.85	1.10
Anuradhapura	22.92	27.25	34.92	55.55	25.08
Badulla	0.32	2.32	1.15	2.28	1.32
Ratnapura	- 1.18	- 0.23	- 2.47	- 3.61	- 0.70
Kegalla	- 5.17	- 3.14	- 3.77	- 1.58	- 4.15

Source: S. Vamathevan, *Internal Migration in Ceylon, 1946-1953*, Monograph No. 13 (Colombo, Department of Census and Statistics, 1961), table 2.

variation in the volume of net migration derived by the three methods in respect of all districts, the migration rates showed consistency for all districts except Matale and Chilaw. "In Matale, the migration rate calculated by the survival ratio method equals +1.31 and by the vital statistics method equals +4.22, whereas by the place of birth method the rates obtained for intercensal migration for 1946-1953 equals +6.77 and +8.71 for lifetime 1953. Hence, for all purposes the analysis carried out for this district should not be relied on too much. In respect of Chilaw, the difference in migration rates arrived at by the survival ratio and vital statistics methods on one hand and place of birth method on the other is small. Hence it is difficult to state whether the discrepancy in the rates are due to census errors or due to total population of the district being taken to estimate the net migration by the forward survival and vital statistics methods".^{4/}

In regard to the Jaffna District, since the difference in the estimates according to the various methods was small and since the rate of in-migration by the forward survival ratio is only 0.42 as against out-migration rates of -1.50 and -2.92 by the vital statistics and place of birth (1946-1953) methods, Vamathevan's study considered this district as an out-migration district. On the basis of the correlations between the rates obtained by various methods, Vamathevan concluded that the best possible estimate of net migration for each district during 1946-1953 would be an average of the estimates obtained by the vital statistics method and the forward survival ratio method.

It is evident from table 27 that of the 20 revenue districts, as many as 11, Colombo, Matale, Hambantota, Mannar, Vavuniya, Batticaloa, Kurunegala, Puttalam, Chilaw, Anuradhapura and Badulla, were in-migration districts. It has been noted in chapter II that all these districts, with the exception of Colombo, are situated in the dry zone region and were in the past classified as areas which were endemic or hyper-endemic to malaria. The eradication of malaria during the years after the Second World War^{5/} rendered these districts healthy and attractive for colonization and agriculture. Consequently, during the 1946-1953 intercensal period, most of the land settlement and agricultural development schemes undertaken in the country

were located in these districts, resulting in a transfer of population from the more densely populated wet zone. Migration into Colombo District was mostly due to the importance of the city of Colombo as the nation's capital and the various economic opportunities it offered as a commercial and financial centre.

As regards, the source of migrants, nearly 58 per cent of the people moving into Colombo District came from Galle, Jaffna and Kandy districts. In the case of Anuradhapura, about 75 per cent of the in-migrants were drawn from the wet zone districts of Kandy (10,992), Kegalla (7,925), Colombo (6,024), Nuwara Eliya (5,774) and Galle (2,580). Since 1946, there have been new streams drawn into Batticaloa District from Kegalla, Colombo, Galle, Trincomalee, Badulla, Nuwara Eliya and Jaffna districts. In the case of the Kurunegala District, the migration streams were the same as life-time 1946, i.e., from Colombo, Kandy, Kegalla, Galle, Chilaw and Kalutara.

Though an almost equal number of persons are estimated to have moved into the Anuradhapura District (46,200) and Colombo District (46,100), the migration rate for Anuradhapura (25.08) is about nine times that of Colombo (2.94). Batticaloa (23,000) and Kurunegala (21,400) districts also had heavy in-migration, and the migration rate for Batticaloa was almost three times that of Kurunegala. The next highest number of migrants moved into Mannar District (5,700) while the Chilaw District received the least number of migrants. However, the migration rate for Vavuniya District (17.59) was the second highest among all districts.

Of the nine out-migration districts, Kandy lost the highest number of persons (27,500) with a net migration rate of 3.55. The largest number (10,922) of the migrants originating in Kandy District went into Anuradhapura District while the second largest number (5,417) moved to the adjoining Nuwara Eliya District. The second largest population-losing district was Kegalla (18,100) and the largest number from this district also went to Anuradhapura District. The districts losing the least number of persons were Ratnapura (2,700) with a rate of only 0.70, and Jaffna (2,700) with a rate of only 0.54.

Vamathevan's study also found that "the highest number of in-migrants were in the age groups 22-26 and they constitute 48,250. Of these 29,441 were males and 18,809 were females with a sex ratio of 156. The lowest in-migration was in the age group 0-6, 13,884 with a sex ratio of 105. Above age groups 32-36, there was actual out-migration from the 11

4/ S. Vamathevan, *Internal Migration in Ceylon, 1946-1953*, Monograph No. 13 (Colombo, Department of Census and Statistics, 1961), p. 5.

5/ See chapter VIII.

in-migration districts, the largest group being 42-46 constituting 15,475 persons with a sex ratio of 187. The highest sex ratio was in the age-group 37-41 being 524, indicating that large number of males than females left the net migration districts during this period. In the young age group 12-16, where there was movement of population into the districts, the sex-ratio was 409. The lowest sex-ratio was in group 62+ where there was only a ratio of 10. The sex ratios between age groups 17-21 to 27-31 ranged from 263 to 159"^{6/}

The age pattern for the nine districts of net out-migration (table 29) showed that "the largest number of out-migrants appear to be in the age groups 17-21 (17,972) and 42-46 (17,619). The former age group has a sex ratio of 471 while the latter a sex ratio of only 231. In age groups 27-31 and 32-36 there was actual in-migration, the highest number of in-migrants being in age group 27-31 with a sex ratio of 268. The sex ratio in the age group 32-36 was 208. The lowest out-migration was in the age group 57-61, the sex ratio was 422. The highest sex ratio was in the age group 12-16, the lowest in the age group 62+, being 1,415 and 49 respectively"^{7/}

The actual extent of net migration is best appreciated by considering the contribution that migration makes towards the population of the area concerned. Table 30 gives the net growth rate in each of the 20 districts of Sri Lanka during the 1946-1953 intercensal period. It will be seen from this table that there are eight districts with a growth rate of about 20 per cent or more of the mid-intercensal (1946-1953) population. These are Anuradhapura (46.50 per cent), Vavuniya (40.71 per cent), Mannar (32.10 per cent), Puttalam (31.03 per cent), Nuwara Eliya (25.03 per cent), Hambantota (23.82 per cent), Badulla (21.55 per cent) and Ratnapura (19.90 per cent). Of these, excepting Ratnapura and Galle, others have been in-migration districts. Further, in all these districts except Anuradhapura, Mannar and Vavuniya, where the rates are high, the rate of natural increase is comparatively higher than the migration rates. "All these districts are agricultural districts and the conclusion one could possibly arrive at is, that agriculture or scope for agriculture with land and water available played a prominent factor in attracting migrants. In addition to this 'pull' factor, unemployment probably in the non-agricultural sector might have caused persons to move to Colombo, and this excess population,

because of cheaper housing facilities, moved in large numbers into the adjacent towns of Dehiwala-Mt. Lavinia instead of moving into Colombo Municipality limits"^{8/}

In the study by Abhayaratne and Jayewardene, the "Index of attraction" was used to measure the

Table 29. Total population in in-migration and out-migration districts of Sri Lanka by age group and sex ratio (F.S.R. method)

Total number of districts	Age group	Volume			Sex ratio (per 100 females)
		Male	Female	Total	
In-migration					
11	0-6	7,112	6,772	13,884	105
	7-11	18,008	14,206	32,214	127
	12-16	12,896	3,152	16,048	409
	17-21	22,998	8,740	31,738	263
	22-26	29,441	18,809	48,250	156
	27-31	24,529	15,420	39,949	159
	32-36	9,417	6,389	15,806	147
	37-41	-5,228	-998	-6,226	524
	42-46	-10,081	-5,394	-15,475	187
	47-51	-7,909	-4,775	-12,684	166
	52-56	-5,059	-1,331	-6,390	380
	57-61	-4,288	-137	-4,151	-
	62+	-195	-1,938	-2,133	10
	Total		91,641	59,189	150,831	154
Out-migration					
9	0-6	-2,308	-2,198	-4,506	105
	7-11	-5,670	-7,083	-12,753	80
	12-16	-12,946	-915	-13,861	1,415
	17-21	-14,824	-3,148	-17,972	471
	22-26	-6,579	-3,657	-10,236	179
	27-31	7,479	2,787	10,266	268
	32-36	3,038	1,458	4,496	208
	37-41	-8,371	-3,431	-11,802	244
	42-46	-12,294	-5,325	-17,619	231
	47-51	-9,016	-4,857	-13,873	186
	52-56	-4,699	-2,217	-6,916	212
	57-61	-4,937	-1,170	-6,107	422
	62+	-3,413	-7,017	-10,430	49
Total		-74,540	-36,773	-111,314	203

Source: S. Vamathevan, *Internal Migration in Ceylon 1946-1953*, Monograph No. 13 (Colombo, Department of Census and Statistics, 1961), table 5.

^{6/} S. Vamathevan, *op.cit.*, p. 26.

^{7/} *Ibid.*

^{8/} *Ibid.*, p. 37.

Table 30. Rates of growth - district population, 1946-1953

District	Mid-population 1946-1953	Increase in population	Rate of natural increase	Rate of migration increase	Rate of net increase
Colombo	1,564,500	246,400	15.75	2.94	18.69
Kalutara	490,000	78,100	15.94	-2.85	13.09
Kandy	775,900	153,000	19.72	-3.55	16.17
Matale	178,400	37,800	21.18	-2.76	18.42
Nuwara Eliya	226,900	60,000	26.44	-1.41	25.03
Galle	492,100	80,300	16.32	-3.43	12.89
Matara	382,700	77,600	20.28	-3.77	16.51
Hambantota	170,600	38,700	22.67	1.15	23.82
Jaffna	458,300	74,200	16.19	-0.54	15.65
Mannar	37,600	6,300	16.82	15.28	32.10
Vavuniya	29,200	6,800	23.21	17.50	40.71
Batticaloa	236,800	40,400	17.07	9.74	26.81
Trincomalee	79,900	12,600	15.77	-6.41	9.36
Kurunegala	555,700	117,000	21.06	3.85	24.91
Puttalam	51,000	11,300	22.08	8.95	31.03
Chilaw	154,900	27,600	17.79	1.10	18.89
Anuradhapura	184,400	39,500	21.42	25.08	46.50
Badulla	419,600	84,900	20.23	1.32	21.55
Ratnapura	382,600	78,800	20.60	-0.70	19.90
Kegalla	436,700	83,500	19.13	-4.15	14.98

Source: S. Vamathevan, *Internal Migration in Ceylon, 1946-1953*, Monograph No. 13 (Colombo, Department of Census and Statistics, 1961), table 13.

relative popularity of an area as the destination of a migratory move. This index was defined as the sum of the percentages of migrants into an area from every other area divided by the total number of areas. "It reveals the percentage of all migrants who would migrate into a particular area if migration occurred to the same extent from every area. This index equates the influence that the size of the population of the home area exerts on internal migration and in doing so reveals the full force of the host area to attract migrants. In addition, as the computation of the index involves the calculation of the percentage of migrants going from every area into every other area, it permits the comparative study of the streams of flow".^{9/}

According to the Abhayaratne - Jayewardene study, the index of attraction during the period 1946-1953 was highest for the Colombo District followed by Anuradhapura District. The third most popular area was Kurunegala while Batticaloa ranked fourth. Batticaloa District, which had a relatively low attraction for migrants prior to 1946 took in a large proportion of migrants during the 1946-1953

period. A similar feature could be observed in respect of the Vavuniya District. The districts which recorded a marked fall in the index of attraction between 1946 and 1953 are Trincomalee, Kalutara, Kandy, Nuwara Eliya, Chilaw, Ratnapura and Kegalla. Thus the results of the Abhayaratne - Jayewardene study confirm the findings of Vamathevan.

C. INTERCENSAL PERIOD, 1953-1963

The volume and pattern of internal migration during 1953-1963 was estimated by three methods: (a) vital statistics (b) place of birth by place of residence; and (c) index of attraction.^{10/} The results obtained by the first two methods, which give estimates of the number migrating into a particular district, are summarized in table 31. It will be observed that the estimates of net migration obtained by the two methods vary from one another in respect of all districts. However, there is consistency in the results in that both methods identify

^{9/} O.E.R. Abhayaratne and C.H.S. Jayewardene, *loc.cit.*, p. 76.

^{10/} These estimates were prepared by S. Selvaratnam and Revathy Balasingam at the Marga Institute for ESCAP. See *ESCAP Comparative Study of Population Growth and Agricultural Change: Case Study of Sri Lanka*, Asian Population Studies Series No. 23D (Bangkok, 1975), pp. 29-31.

Table 31. Comparison of net migration 1953-1963 obtained by two methods of estimation

District	Estimation of net migration	
	Vital statistics	Place of birth
Colombo	21,123	59,643
Kalutara	-20,634	- 5,009
Kandy	-58,771	-24,160
Matale	-19,618	-17,064
Nuwara Eliya	-25,383	-19,440
Galle	-21,035	- 2,004
Matara	-44,732	-44,885
Hambantota	- 3,648	- 3,357
Jaffna	-14,513	- 6,941
Mannar	207	2,627
Vavuniya ^{a/}	14,261	11,900
Batticaloa	18,986	27,751
Trincomalee	16,340	16,635
Kurunegala	-15,217	-23,418
Puttalam	- 6,899	11,778
Chilaw ^{b/}	6,441	
Anuradhapura ^{b/}	51,346	45,242
Badulla ^{c/}	4,992	1,007
Ratnapura	- 6,584	- 7,482
Kegalla	-27,827	-25,111

Source: Marga Institute, *A Comparative Study of Population and Agricultural Change in Sri Lanka*, report prepared for the Population Division, ESCAP.

Notes: a/ Batticaloa District includes estimates in respect of the newly created Amparai District.

b/ Anuradhapura District includes estimates in respect of the Polonnaruwa District.

c/ Badulla District includes estimates in respect of Monaragala District.

the very same districts as either in-migrant or out-migrant districts. However, the estimates derived by the place of birth by place of residence method was preferred, because, first, errors involved in this method are only those relating to census enumeration and, secondly, the method gives the streams of in- and out-migration between each district in addition to the total in- and out- net migration.

The estimates of net internal migration show that during the 1953-1963 period, only eight out of the 19 districts were in-migrant districts, as compared to 11 in-migrant districts during 1946-1953. The eight districts in descending order of magnitude are Colombo, Anuradhapura, Batticaloa, Trincomalee, Vavuniya, Puttalam, Mannar and Badulla. The remaining districts were all out-migration districts, with the greatest number migrating out of Matara. It will also be observed that Matale, Hambantota and Kurunegala, where the number of emigrants ex-

ceeded the number of immigrants during 1953-1963, were in fact in-migrant districts during 1946-1953 period. Trincomalee, which during the 1946-1953 intercensal period was an out-migration district, became an in-migration district during 1953-1963. The sudden inflow of migrants into this district was a consequence of the land development and settlement activities during this period.^{11/} In Colombo, Vavuniya, Puttalam and Batticaloa districts, the number of immigrants during 1953-1963 showed a marked increase over the previous intercensal period, while emigration continued to occur from Matale, Nuwara Eliya, Kegalla, Jaffna and Ratnapura districts.

It is also estimated that in Anuradhapura, Vavuniya and Trincomalee districts, net migration accounted for approximately one-third of the 1953-1963 intercensal population increase. In Anuradhapura and Vavuniya districts, the percentage share of the total increase in population due to net migration was higher during the previous intercensal period (1946-1953). In fact during the 1946-1953 period, the intercensal increase in Anuradhapura District was due more to net migration than to natural increase. In Colombo District, the percentage contribution of migration to intercensal increase rose from 7 per cent during 1946-1953 period to 12 per cent during 1953-1963 period. In Matale, Nuwara Eliya, Matara and Kegalla, out-migrants considerably reduced the intercensal increase in population in these districts.

Table 32 gives in detail the numbers in, and direction of, the migration streams between each district. The general direction of movement was from the wet zone to the dry zone area, corresponding to a slight decrease in agricultural land in the wet zone and a considerable increase and development of agricultural land in the dry zone. In Anuradhapura/Polonnaruwa District, where there was a 68 per cent increase in agricultural land between 1946 and 1963, there was also a large number of in-migrants during this period, mostly from Kandy, Colombo and Matale districts and in less number from the other districts in the wet zone. Out-migration from Anuradhapura had been comparatively less. The out-migration streams from Anuradhapura/Polonnaruwa District went into other districts in the dry zone, the largest number moving into Puttalam which is a neighbouring district. The streams of net intercensal migration in Vavuniya and Batticaloa/Ampa-

^{11/} It is estimated that new land development schemes accounted for an increase of 141 per cent in the agricultural land area in the Trincomalee District between 1946 and 1963.

Table 32. Streams of net intercensal migration between districts, 1953-1963 (place of birth data)

Place of birth	Colombo	Kalutara	Kandy	Matale	Nuwara Eliya	Galle	Matara	Hambantota	Jaffna	Mannar	Vavuniya	Batticaloa	Trincomalee	Karunegala	Puttalam	Anuradhapura	Badulla	Ratnapura	Kegalla
Colombo	-	-2,390	8,980	2,045	-3,940	-5,220	-15,020	-869	-3,728	-229	781	1,567	2,769	-10,209	3,472	9,040	-4,866	-11,245	-6,530
Kalutara	2,390	-	-347	57	752	-145	114	493	114	18	410	1,974	394	373	41	1,771	406	525	-1,237
Kandy	8,980	347	-	-1,117	-1,564	852	-388	143	548	9	1,187	3,105	1,661	1,063	527	12,682	-900	-590	-2,385
Matale	2,045	-57	1,117	-	1,199	218	47	-58	462	17	570	206	357	328	128	11,110	-68	-235	-375
Nuwara Eliya	3,940	-20	1,564	-1,199	-	65	230	-236	626	888	455	600	4,249	-1,043	72	1,014	7,402	869	-36
Galle	5,220	-752	-852	-218	-65	-	-4,313	135	182	24	226	2,264	220	243	369	2,415	277	73	-3,444
Matara	15,020	+145	-388	-47	-230	4,313	-	5,768	81	31	152	3,857	1,746	360	270	2,196	2,555	1,879	633
Hambantota	869	-114	-143	58	236	-135	-5,768	-	-92	-31	54	1,603	890	51	-4	209	209	4,683	-53
Jaffna	3,728	-493	-548	-462	-626	-182	-81	92	-	-1,510	34	-97	-26	-356	-278	-1,992	-1,317	-279	-454
Mannar	229	-18	-9	-70	-888	-24	-31	31	-	-	-340	-340	-39	-186	49	-221	-103	-103	-100
Vavuniya	-781	-410	-1,187	-570	-455	-226	-152	-34	-5,023	-34	-	-	-241	-1,086	-240	-131	-3,190	-1,529	-4,904
Batticaloa	-1,974	-3,105	-3,105	-206	-600	-2,264	-3,857	-1,603	-1,497	-97	340	-	-241	-1,086	-240	-131	-3,190	-1,529	-4,904
Trincomalee	-2,769	-394	-1,661	-357	-4,249	-220	-1,746	-890	-1,497	-26	39	241	-	-1,252	-162	-622	-173	-339	-510
Karunegala	10,209	-373	-1,063	-328	1,043	-243	-360	-51	-1,697	43	186	1,086	1,252	-	3,358	7,216	451	-169	-195
Puttalam	-3,472	-41	-527	-128	-72	-369	-270	4	278	49	912	240	162	3,358	4,464	-	-672	-604	-4,687
Anuradhapura	-9,040	-1,771	-12,682	-11,110	-1,014	-2,415	-2,196	-209	1,992	221	944	131	622	-7,216	4,464	672	-	771	-776
Badulla	4,866	-406	900	68	-7,402	-277	-2,555	-1,105	1,317	24	163	319	173	-451	-179	672	-	771	-776
Ratnapura	11,245	-525	590	235	-869	-73	-1,879	-4,683	279	103	108	1,529	339	169	261	604	-	771	820
Kegalla	6,530	1,237	2,385	375	36	3,444	-633	53	454	100	336	4,904	510	195	542	4,687	776	-820	-
Number of immigrants	77,270	1,729	6,944	793	2,534	9,644	277	6,340	6,606	3,067	11,900	28,091	17,041	1,782	13,553	53,616	13,151	8,800	1,453
Number of emigrants	17,629	6,738	31,104	17,857	21,974	11,648	45,162	9,697	13,547	440	-	340	306	25,200	1,775	8,374	12,374	16,282	26,564
Net migration	59,643	5,009	-24,160	-17,064	-19,440	-2,004	-44,885	-3,357	-6,941	2,627	11,900	27,751	16,635	-23,418	11,778	45,242	1,007	-7,482	-25,111

Source: Marga Institute, A Comparative Study of Population and Agricultural Change in Sri Lanka (Ceylon), Report prepared for the ESCAP Population Division.



rai districts were all in-migration streams from every other district, except for a small out-migration stream from Batticaloa to Vavuniya. Trincomalee District also had very few out-migrants. The number of migrants into these districts during the 1953-1963 period was higher than the number that moved in during the previous intercensal period (1946-1953). The low net in-migration figure of 1,007 for Badulla/Monaragala District was in fact made up of a net in-migration stream into Monaragala minus an out-migration stream from Badulla. This can be seen from the place of birth statistics which show that in Monaragala the share of residents not born in the district was 35 per cent (compared to only 11 per cent in Badulla) and the streams of net lifetime migration for Monaragala as at the 1963 census showed all streams to be in-migration streams. The highest number of migrants (26,568), however, was from its neighbouring district, Badulla. In-migration into Monaragala District was due mainly to colonization and land develop-

followed by Kandy and Nuwara Eliya districts in the hill country. Large numbers of these emigrants moved into the dry zone districts of Batticaloa, Anuradhapura/Polonnaruwa and Monaragala and also into Colombo District. Similarly, Matale which had a comparatively high (9.4 per cent) decrease in agricultural land area, had a high rate of emigration during the period 1953-1963, although in the period 1946-1953 there was net in-migration. In the 1953-1963 period, 47.8 per cent of the emigrants from Matale moved into Anuradhapura/Polonnaruwa District. Jaffna District was the only exception where although there had been an increase in agricultural land, there was also out-migration, the numbers increasing over the years during the period 1946-1963.

Migration rates in respect of the wet zone (low country and hill country) and the dry zone as well as the Colombo and Jaffna districts separately for 1953-1963 are shown in table 33. Approximately a

Table 33. Internal population movement, 1953-1963

	Immigration ^{a/}		Emigration ^{b/}		Share of area-born in increase in residents 1953-1963	Net migration ^{c/} 1953-1963
	1953	1963	1953	1963		
Colombo	14.2	11.0	12.7	12.1	80.0	+10.8
Low-country	8.2	8.1	12.2	13.8	92.2	-14.8
Hill-country	7.7	7.5	8.5	10.3	92.6	- 9.5
Jaffna	2.7	3.9	6.6	7.1	91.9	- 5.7
Dry zone	20.0	22.2	11.4	11.6	73.3	+20.4

Source: P.J. Richards, *Employment and Unemployment in Ceylon* (Paris, Organization for Economic Co-operation and Development, 1971).

Notes: a/ $\left(\frac{\text{Population resident but not born in area}}{\text{Total population resident}} \right) \times 100$

b/ $\left(\frac{\text{Number born but not resident in area}}{\text{Total born in area}} \right) \times 100$

c/ $100 - \left(\frac{\text{Percentage increase in total born and residing in area}}{\text{Percentage increase in number resident in area}} \right) \times 100$

ment which accounted for a 118.8 per cent increase in agricultural land. ^{12/}

With the exception of Colombo, all the districts in the wet zone were net out-migration districts. Matara had the highest number of net out-migrants. Kegalla had the second largest number of emigrants

third of the net out-migrants from the low and hill country and Jaffna migrated into the Colombo District. The remaining two-thirds moved into the dry zone. In Colombo District and the dry zone, the share of increase in population due to in-migration was 20 per cent and 26.6 per cent respectively. However, in the low country and hill country regions and in Jaffna District in-migrants contributed a little below 10 per cent to the residential increase during that period.

^{12/} For further discussion, see ESCAP, *op.cit.*

Table 34. Direction and intensity of interdistrict migration between 1953 and 1963

Area migrating from	Area migrating to -															
	Colombo Kalutara	Kandy Matale Nuwara Eliya	Galle	Matara Hamban-tota	Jaffna	Mannar Vavuniya caloa	Batti Trinco Kurune-Puttalam	Anuradha Badulla Ratna-Kegalla pura								
Colombo	-	3.37	0.14	1.17	1.21	1.55	0.84	2.23	5.58	7.21	-	13.49	19.99	3.06	5.31	10.14
Kalutara	43.76	1.40	0.82	1.99	0.87	0.28	0.12	1.49	7.45	1.56	3.13	0.88	7.00	3.03	10.30	0.44
Kandy	19.26	-	6.56	1.28	0.36	2.13	0.61	2.30	6.38	3.59	6.76	1.36	23.13	4.10	0.22	5.53
Matale	8.45	19.01	-	0.85	-	1.99	0.34	2.36	1.23	1.69	7.08	0.59	47.82	0.65	0.69	1.04
Nuwara Eliya	11.16	30.64	0.31	0.82	0.09	2.30	0.37	1.39	2.05	12.99	0.49	0.42	3.51	27.04	3.88	1.63
Galle	32.94	15.27	-	-	2.77	0.96	0.20	1.03	10.04	1.21	2.05	1.90	10.91	2.92	3.51	0.34
Matara	31.06	1.43	0.01	14.75	17.98	-	0.07	0.33	7.76	3.60	1.29	0.61	4.74	6.21	7.33	0.10
Hambantota	9.50	0.86	0.35	3.32	20.66	0.48	-	0.23	9.59	5.71	0.70	0.23	1.55	12.55	32.41	0.34
Jaffna	24.77	3.47	0.21	0.25	-	-	10.33	30.42	12.86	11.31	-	2.72	-	2.82	0.08	-
Mannar	24.13	11.96	0.51	0.87	1.16	13.80	-	18.80	8.66	3.88	4.28	2.68	4.24	2.14	0.83	0.47
Vavuniya	10.81	2.74	0.66	0.37	0.09	15.58	13.84	-	3.54	5.39	2.94	3.54	29.92	1.83	6.71	0.77
Batticaloa	19.55	6.60	1.51	1.77	-	12.56	2.08	6.79	-	8.32	3.78	2.69	3.45	22.91	1.57	2.07
Trincomalee	22.34	7.68	1.52	1.32	0.25	9.61	3.02	5.18	18.41	-	8.54	2.14	13.34	1.39	0.25	0.89
Kurunegala	22.19	1.31	3.60	0.61	0.15	0.34	0.40	1.17	3.34	4.15	-	18.40	21.32	1.74	1.09	9.71
Puttalam	29.24	1.75	0.22	0.68	0.33	6.38	0.29	8.53	3.49	1.52	33.27	-	7.24	3.08	0.64	0.68
Anuradhapura	12.95	2.34	8.37	1.69	0.32	9.65	3.20	18.86	3.47	11.44	12.81	3.25	-	1.80	1.40	3.32
Badulla	23.71	13.83	1.00	2.25	2.01	8.40	0.41	0.99	20.65	1.10	1.08	0.85	-	-	8.07	1.30
Ratnapura	46.36	2.35	0.06	3.11	1.10	0.97	0.42	1.14	5.41	1.16	1.68	1.12	2.49	3.46	-	1.37
Kegalla	27.73	3.19	1.49	1.69	0.25	0.44	0.26	0.85	11.80	1.28	9.59	1.46	12.26	4.86	7.76	-
Total	419.91	63.13	128.94	54.12	28.94	87.42	36.10	104.09	141.71	87.11	99.47	58.33	216.88	105.59	92.05	40.24
Index of Attraction	23.32	7.17	1.50	3.01	1.61	4.86	2.04	5.78	7.87	4.84	5.53	3.24	12.02	5.87	5.11	2.24

Source: Marga Institute, *A Comparative Study of Population and Agricultural Change in Sri Lanka*, Report prepared for the ESCAP Population Division.

The intensity and direction of migration between 1953 and 1963 as measured by the index of attraction is given in table 34, which shows the percentage of total net shifts of migrants from every district to any other particular district. The index of attraction for a district is the average sum of these percentages.

The index of attraction was highest for Colombo and this index showed an increase over the previous intercensal period. The largest numbers were attracted from Ratnapura and Kalutara, from where over 40 per cent of the emigrants moved into Colombo. The share of emigrants from Galle and Matara districts which moved into Colombo was over 30 per cent. In fact, Colombo District received over 10 per cent of the emigrants from all other districts except Matale and Hambantota. Of the emigrants leaving Colombo, 20 per cent moved into the neighbouring Kalutara District and another 20 per cent to Anuradhapura/Polonnaruwa District. The next most popular district was Anuradhapura/Polonnaruwa whose index of attraction, although second highest, was only half that of Colombo District. Matale and Hambantota had the lowest and second lowest index of attraction respectively. More than half the number of immigrants into Hambantota were from the neighbouring Matara District. The index of attraction remained more or less the same over the two intercensal periods 1946-1953 and 1953-1963, in most districts, except in Matale where it was lower, and in Vavuniya, Trincomalee, Badulla/Monaragala and Ratnapura where it was higher during the 1953-1963 period. The large number of migrants into Vavuniya were mostly from its neighbouring districts, Jaffna, Mannar and Anuradhapura. Trincomalee District, the index for which was very much higher during the 1953-1963 period, attracted immigrants from all over the island, the largest number being from Nuwara Eliya, followed closely by Anuradhapura and Jaffna.

D. INTERCENSAL PERIOD, 1963-1971

The analysis of the pattern of internal migration during 1963-1971 intercensal period is based on the Vital Statistics method and Census Survival Ratio method. The place of birth data could not be used as they were not available for the same set of areal units at the 1963 and 1971 censuses. The data on usual residence also could not be used because the unspecified category of migrants formed a very high proportion, nearly 32 per cent.^{13/}

^{13/} P. Wilson, "Internal migration in Sri Lanka" (Mimeo.)

The estimates of net migration by the Vital Statistics method^{14/} is shown in table 35. It will be observed that of the 22 districts, nine have been net in-migrant districts. These nine districts in descending order are: Colombo, Anuradhapura, Monaragala, Polonnaruwa, Trincomalee, Vavuniya, Puttalam, Batticaloa and Mannar. Although Colombo received the largest number (39,237) of migrants, the migration rate for Polonnaruwa District (11.31) was the highest and was over seven times the rate for Colombo (1.61). The next highest migration rate among the in-migrant districts was in respect of Monaragala (10.08) followed by Anuradhapura (7.51) and Vavuniya (6.92). The number of net out-migrants in the remaining 13 districts has varied from a low of 1,062 in Ratnapura to a high of 74,055 in the Kandy District. However, the highest out-migration rate (-8.37) obtained in the Matara District, followed by Kandy (-6.64), Badulla (-5.71), Jaffna (-5.52) and Nuwara Eliya (-5.33). The lowest rate was (-0.18) in the Ratnapura District.

The extent of net migration estimated by the Census Survival Ratio^{15/} method is shown in table 36. It will be seen that during the intercensal period 1963-1971, 186,000 persons moved between the 22 administrative districts and of them nearly 57 per cent were males and 43 per cent females.

The various estimates of net migration for the 1963-1971 period confirms the over-all pattern observed during the two preceding intercensal periods, namely, a movement of persons from the densely populated wet zone to the sparsely populated dry zone districts. The exceptions have been Colombo in the wet zone which in all three intercensal periods has been a net in-migrant district, and Jaffna in the dry zone which has throughout been a net out-migrant district. Further, Colombo, Mannar, Vavuniya, Batticaloa, Puttalam/Chilaw, Anuradhapura/Polonnaruwa and Badulla/Monaragala have always been in-migrant districts. Matale, Hambantota and Kurunegala which were in-migrant districts

^{14/} This method assumes zero international migration or at least zero net international migration for each district included in the analysis. In Sri Lanka, while immigration has virtually been halted since 1948, there has been a certain amount of emigration taking place in recent years, particularly to India, consequent to the implementation of the Srimavo-Shastri Agreement. It is not possible to make any adjustment in this respect since vital statistics are not collected and tabulated separately for citizens and non-citizens.

^{15/} This was estimated by applying the over-all male and female census survival ratios to the population in each district.

Table 35. Population at 1963 and 1971 censuses, intercensal natural increase and net migration by district

District	Population 1963 census	Intercensal period 1963-1971 ^{a/}			Population 1971		Net migration 1963-1971	
		Number of births	Number of deaths	Natural increase	Estimate	Enumerated	Number	Rate
Colombo	2,207,420	595,068	169,460	425,608	2,633,028	2,672,265	+39,237	+1.61
Kalutara	631,457	150,803	43,274	107,529	738,986	729,514	-9,472	-1.39
Kandy	1,043,632	304,612	86,264	218,348	1,261,980	1,187,925	-74,055	-6.64
Matale	255,630	84,744	20,184	64,560	320,190	314,841	-5,349	-1.88
Nuwara Eliya	397,756	112,601	37,486	75,115	472,871	450,278	-22,593	-5.33
Galle	641,474	158,205	45,004	113,201	754,675	735,173	-19,502	-2.83
Matara	514,969	151,009	33,424	117,585	632,554	586,443	-46,111	-8.37
Hambantota	274,297	83,951	15,793	68,158	342,455	340,254	-2,201	-0.72
Jaffna	612,596	171,145	45,888	125,257	737,853	701,603	-36,250	-5.52
Mannar	60,124	20,528	4,718	15,810	75,934	77,780	+1,846	+2.82
Vavuniya	68,621	25,347	4,396	20,951	89,572	95,243	+5,671	+6.92
Batticaloa	196,189	77,961	19,555	58,406	254,595	256,721	+2,126	+0.94
Amparai	211,732	78,163	15,267	62,896	274,628	272,605	-2,023	-0.84
Trincomalee	138,553	51,622	8,360	43,262	181,815	188,245	+6,430	+3.94
Kurunegala	852,661	248,131	52,921	195,210	1,047,871	1,025,633	-22,238	-2.37
Puttalam	302,546	94,968	21,653	73,315	375,861	378,430	+2,569	+0.75
Anuradhapura	279,788	101,467	17,605	83,862	363,650	388,770	+25,120	+7.51
Polonnaruwa	113,971	39,709	5,721	33,988	147,959	163,653	+15,694	+11.31
Badulla	521,845	169,387	43,348	126,039	647,884	615,405	-32,479	-5.71
Monaragala	132,260	53,583	9,190	44,393	176,653	193,020	+16,367	+10.08
Ratnapura	546,037	160,554	44,185	116,369	662,406	661,344	-1,062	-0.18
Kegalla	578,506	134,622	34,366	100,256	678,762	654,752	-24,010	-3.89

Sources: (1) Department of Census and Statistics for population data.
(2) Department of the Registrar-General for data on births and deaths.

Notes: a/ Since the census dates were July 8 in 1963 and October 9 in 1971, the published vital statistics for the two end years were split into the parts covering the events before and after the census date. An approximate sub-division was obtained by multiplying the births and deaths of 1963 by $\frac{186}{365}$ and that of 1971 by $\frac{282}{365}$.

Table 36. Volume of net intercensal migration by sex, 1963-1971 ^{a/}

District	Male	Female	Total
Colombo	+47.0	+41.5	+88.5
Kalutara	- 5.0	- 3.8	- 8.8
Kandy	-28.6	-19.9	-48.5
Matale	+ 1.1	+ 0.4	+ 1.5
Nuwara Eliya	-12.3	-10.3	-22.6
Galle	- 7.3	-10.6	-17.9
Matara	-12.5	-10.0	-22.5
Hambantota	+ 2.2	- 0.1	+ 2.1
Jaffna	-10.9	- 7.2	-18.1
Mannar	+ 1.2	+ 0.7	+ 1.9
Vavuniya	+ 4.2	+ 3.0	+ 7.2
Batticaloa	+ 3.8	+ 1.3	+ 5.1
Amparai	- 1.9	+ 2.3	+ 0.4
Trincomalee	+ 3.8	+ 4.9	+ 8.7
Kurunegala	- 1.3	+ 1.0	- 0.3
Puttalam	+ 5.5	+ 4.6	+10.1
Anuradhapura	+15.4	+11.2	+26.6
Polonnaruwa	+ 8.3	+ 6.5	+14.8
Badulla	-12.2	-10.3	-22.5
Monaragala	+10.3	+ 6.3	+16.6
Ratnapura	+ 3.2	-0.1	+ 3.1
Kegalla	-13.5	-11.1	-24.6

Source: P. Wilson, "Internal migration in Sri Lanka," (mimeo).

Note: a/ Estimates based on Census Survival Ratio method.

during 1946-1953 period became out-migrant districts during the two subsequent intercensal periods. The status of Trincomalee, an out-migrant district during 1946-1953 was reversed during 1953-1963 and 1963-1971 periods.

E: LIFETIME MIGRATION

The 1971 census data on place of birth has been used to estimate lifetime migration in the 22 districts. These estimates, presented in table 37, give only the net spatial redistribution of the population; they do not show the specific streams and counter streams, nor migration over any given time period. It will be seen from this table that the highest number of lifetime migrants, amounting to 439,952 or 23.1 per cent of all migrants, have moved into Colombo District. The second largest number of lifetime in-migrants were recorded in Kandy District amounting to 148,319 or 7.8 per cent of all lifetime migrants. Curiously, it is the Colombo and Kandy districts which recorded the first and second highest number of life-

time out-migrants. The out-migrants from Colombo numbered 279,362 or 14.7 per cent of all lifetime migrants, while the out-migrants from Kandy District numbered 264,012 or 13.9 per cent of all lifetime migrants. Kurunegala District attracted the third largest number of in-migrants amounting to 141,463 while the fourth largest number, 103,298 went into Anuradhapura District. In regard to lifetime out-migrants, Matara sent out the third largest (176,242) and Galle the fourth largest number (162,601).

In net terms, 12 Districts (Colombo, Matale, Hambantota, Vavuniya, Amparai, Trincomalee, Kurunegala, Puttalam, Anuradhapura, Polonnaruwa, Monaragala and Ratnapura) gained population while the other 10 districts were population losers. Colombo, Anuradhapura and Polonnaruwa districts have emerged as areas of significant net growth followed by Amparai, Trincomalee and Monaragala. Matara, Kandy and Galle are the major net out-migrant districts. However, in terms of lifetime migration rates, Polonnaruwa, Anuradhapura, Vavuniya and Trincomalee stand out as major regions of population growth through migration. Geographically almost all the in-migrant districts (except Colombo, Matale and Ratnapura) are in the dry zone, while the majority of the out-migrant districts (except Jaffna and Batticaloa ^{16/}) are in the wet zone.

F. MIGRATION DURING, 1966-1971

Estimates of internal migration during the five years, 1966-1971 have been made by Wilson on the basis of the 1971 census data on usual residence. ^{17/} These estimates, presented in table 38, show that 532,500 persons had migrated within the country during the period. It will also be seen that Colombo and Kandy Districts, which received the highest and second highest number of in-migrants, were also the districts to record the first and second highest number of out-migrants. Galle and Matara in Southern Province were the third and fourth largest losers of population. Except for Vavuniya, the degree of attraction of migrants into Northern Province is very low; in fact out-migration from the

^{16/} It may be noted that according to the analysis for various intercensal periods presented earlier, Batticaloa has throughout been an in-migrant district, while in terms of lifetime migrants it is found to be an out-migrant district. This is because in the earlier censuses, the present Amparai District, which is an in-migrant district, formed part of the Batticaloa District.

^{17/} P. Wilson, *op.cit.*

Table 37. Lifetime in- and out-migrants by district, 1971

District	In-migrants	Out-migrants	Net migrants	Migration rate
Colombo	439,952	279,362	+160,590	+6.08
Kalutara	98,960	127,515	-28,555	-3.92
Kandy	148,319	264,012	-115,693	-10.00
Matale	66,870	65,914	+ 956	+0.30
Nuwara Eliya	73,983	105,340	-31,357	-7.26
Galle	67,618	162,601	-94,983	-12.91
Matara	56,574	176,242	-119,668	-20.49
Hambantota	52,565	38,872	+13,693	+4.02
Jaffna	25,702	88,354	-62,652	-8.97
Mannar	15,594	22,680	-7,086	-9.53
Vavuniya	32,970	4,873	-28,097	+30.27
Batticaloa	15,505	23,438	-7,933	-3.08
Amparai	57,741	5,892	+51,849	+22.26
Trincomalee	55,964	13,628	+42,336	+19.12
Kurunegala	141,463	118,238	+23,225	+2.26
Puttalam	74,098	47,666	+26,432	+6.99
Anuradhapura	103,298	24,297	+79,001	+20.34
Polonnaruwa	77,991	8,279	+69,712	+42.61
Badulla	59,850	89,813	-29,963	-5.06
Monaragala	51,677	10,798	+40,879	+21.45
Ratnapura	91,782	83,789	+7,993	+1.23
Kegalla	93,269	140,142	-46,873	-7.26
All districts	1,901,745	1,901,745		

Source: Computed on the basis of the 10 percent sample tabulation of the 1971 Census schedules published in tables 18 and 19 of *Census of Population, 1971 - Preliminary Report*, (Colombo, 1974).

Table 38. In-migrants by districts of usual residence, out-migrants by districts of previous residence and net-migration, ^{a/} Sri Lanka, 1966-1971

(in thousands)

District	In-migrants	Out-migrants	Net migration
Colombo	132.3	82.2	+50.1
Kalutara	31.1	32.6	-1.5
Kandy	41.8	67.6	-25.8
Matale	18.6	16.9	+1.7
Nuwara Eliya	17.0	25.5	-8.5
Galle	19.3	41.6	-22.3
Matara	15.2	40.6	-25.4
Hambantota	15.8	12.3	+3.5
Jaffna	7.7	24.8	-17.1
Mannar	6.6	2.4	+4.2
Vavuniya	12.0	2.8	+9.2
Batticaloa	4.6	6.8	-2.2
Amparai	12.8	5.2	+7.6
Trincomalee	14.6	4.4	+10.2
Kurunegala	37.7	38.3	-0.6
Puttalam	21.2	14.7	+6.5
Anuradhapura	27.1	13.4	+13.7
Polonnaruwa	17.5	6.2	+11.3
Badulla	19.2	23.1	-3.9
Monaragala	14.5	6.5	+8.0
Ratnapura	24.7	26.1	-1.4
Kegalla	21.2	38.5	-17.3
All districts	532.5	532.5	-

Source: P. Wilson, "Internal migration in Sri Lanka" (mimeo.)

Note: ^{a/} Excludes the 'unspecified' category of migrants.

Jaffna District has been fairly high. The lowest number of in-migrants moved into Batticaloa District, while Mannar had the least number of out-migrants. In net terms, 11 districts have been population gainers while the other 11 were population losers. Colombo was the largest net gainer of population while Kandy was the largest net loser.

The pattern of population movement during the period is almost similar to the pattern of lifetime migration discussed in the preceding section. However, a comparison of data in tables 37 and 38 indicates that there has been a change in the degree of attraction of Mannar, Kurunegala and Ratnapura districts. In terms of lifetime migration, Mannar was a net out-migration district. But during the 1966-1971 period it has become an in-migration district. However Kurunegala and Ratnapura districts which were lifetime net in-migration districts have since 1966 become net out-migration districts. It has to be noted that this analysis is subject to severe

limitation in that it excludes the "unspecified category" of migrants which constitutes nearly 32 per cent of all migrants.

G. SELECTIVITY

An analysis of the proportion born in the district of enumeration by sex and sector is presented in table 39. It will be noted that this proportion was highest, 96.3 per cent, for Jaffna District followed by Batticaloa (94.0 per cent), Galle (90.8 per cent) and Matara (90.3 per cent). As was noted earlier, these four districts have been net out-migration districts. In contrast, only 52.3 per cent of the population enumerated in the Polonnaruwa District was born in this district, while the corresponding proportion in Vavuniya District was 64.5 per cent. It will also be noted that except for Amparai and Puttalam, in all other districts, the proportion born in the place of enumeration was higher for rural than urban areas. There is not much of a change in the pattern between the sexes but more females than males were enumerated at their places of birth. This is more pronounced in rural than in urban areas. In the Jaffna District, more than 97 per cent of the population enumerated in the rural areas were born in those areas, the corresponding proportion for Batticaloa being 95 per cent. More than half the population enumerated in urban areas of Polonnaruwa, Monaragala, Anuradhapura and Vavuniya were born in other districts.

The proportion of the population in the various age groups born outside the district of enumeration shown in table 40 gives an idea of the age composition of the migrant population. It will be observed that the percentage born outside the district of enumeration generally increases with age up to the middle ages, thereafter declining gradually among the older age groups. Polonnaruwa District however presents an interesting picture where over 85 per cent of those in all age groups above 25 years were born outside the district reflecting the migration of colonists into this district over the years. Vavuniya is another district where over 50 per cent of the population aged 25-64 years were born outside the district, a similar pattern being observed in Trincomalee, Anuradhapura and Monaragala districts as well. All in all, the working age groups show a higher proportion born outside the district of enumeration.

The sex ratios among lifetime migrants to urban areas by age groups for various districts based on the place of birth data of the 1971 census is shown in table 41. It will be seen that in most districts, males

Table 39. Percent born in district of enumeration by sex and sector, Sri Lanka, 1971

District	Both sectors						Urban			Rural		
	Both sexes		Male	Female	Both sexes		Male	Female	Both sexes		Male	Female
Colombo	83.4	81.5	85.4	77.6	74.4	81.2	90.3	90.2				
Kalutara	86.4	86.8	86.0	78.2	78.4	77.9	88.7	88.3				
Kandy	87.2	87.3	87.1	73.3	69.8	77.4	89.2	88.4				
Matale	78.6	78.7	78.5	66.4	65.5	67.4	80.3	80.1				
Nuwara Eliya	82.9	83.8	81.9	72.1	69.2	75.1	83.5	82.3				
Galle	90.8	91.1	90.5	85.4	85.5	85.4	92.3	91.9				
Matara	90.3	90.8	89.8	88.4	89.1	87.8	90.6	90.1				
Hambantota	84.6	83.7	85.5	70.2	64.3	77.9	86.1	86.2				
Jaffna	96.3	95.6	97.0	94.6	93.6	95.6	97.2	97.7				
Mannar	79.0	74.8	83.8	72.4	69.5	75.6	80.2	85.2				
Vavuniya	64.5	60.6	69.1	51.5	49.3	54.0	67.9	73.2				
Batticaloa	94.0	92.6	95.4	89.9	88.5	91.2	95.5	97.0				
Amparai	78.7	76.1	81.5	81.5	78.6	84.5	78.3	81.1				
Trincomalee	70.6	67.7	73.8	72.0	69.8	74.4	69.7	73.5				
Kurunegala	86.2	86.1	86.3	58.4	54.6	63.6	87.4	87.2				
Puttalam	80.4	80.7	80.2	81.8	81.8	81.7	80.2	79.9				
Anuradhapura	73.4	71.6	75.4	50.1	48.5	52.0	76.0	77.9				
Polonnaruwa	52.3	48.9	56.4	43.0	40.0	46.7	53.3	57.4				
Badulla	89.9	89.2	90.6	77.3	73.5	81.7	91.1	91.4				
Monaragala	72.9	70.6	75.4	48.0	46.6	49.3	73.4	76.0				
Ratnapura	85.9	84.7	87.1	81.2	78.5	84.2	86.2	87.3				
Kegalla	85.5	86.7	84.4	70.8	70.6	71.0	86.7	85.4				

Sources: Unpublished data of 1963 census (Colombo, Department of Census and Statistics); Government of Sri Lanka, *Census of Population 1971 - Preliminary Report* (Colombo, Department of Census and Statistics, 1972), table 18.

Table 40. Sri Lanka born population - percentage born outside the district of enumeration, 1971 census

District	All ages	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-54	55-64	65+
Colombo	16.6	4.8	6.7	10.4	15.6	22.8	26.0	27.1	26.4	24.0	21.1	18.6	16.7
Kalutara	13.6	10.1	11.5	13.4	13.7	15.9	16.9	17.5	14.8	14.8	14.1	13.6	12.6
Kandy	12.8	5.4	5.9	7.6	9.8	14.1	19.2	20.3	20.8	21.5	21.5	20.0	16.6
Matale	21.4	8.9	11.8	13.9	17.6	24.0	30.5	33.1	35.2	36.0	34.0	34.1	30.2
Nuwara Eliya	17.1	10.1	10.9	10.4	12.9	17.6	25.1	27.3	26.4	26.1	27.2	24.6	20.1
Galle	9.2	7.5	7.4	9.2	9.5	9.6	10.3	10.9	11.7	11.2	10.0	9.0	7.7
Matara	9.7	6.4	7.7	8.2	8.5	10.8	13.8	14.7	13.9	12.2	12.5	8.9	7.9
Hambantota	15.4	8.8	9.2	8.9	10.5	16.2	25.2	27.3	25.2	25.6	23.7	25.4	20.4
Jaffna	3.7	1.9	2.6	4.4	5.2	5.5	5.7	4.5	4.2	3.7	3.0	2.5	1.6
Mannar	20.9	6.9	9.7	11.9	20.1	33.9	41.9	35.4	35.1	35.9	36.2	24.3	20.0
Vavuniya	35.5	12.2	16.8	24.5	36.3	46.0	58.5	56.0	54.9	58.8	57.6	53.0	38.7
Batticaloa	6.0	2.1	3.1	3.8	6.6	8.7	11.6	9.6	9.3	8.3	9.2	7.9	7.9
Amparai	21.3	6.5	8.1	11.3	22.4	39.1	40.0	39.5	33.0	30.6	28.5	31.2	27.4
Trincomalee	29.4	9.4	12.8	15.9	29.9	41.1	49.8	50.3	48.3	50.7	52.4	50.3	39.0
Kurunegala	13.8	5.5	6.9	7.7	9.8	13.9	18.3	21.2	21.8	23.0	24.2	27.1	26.3
Puttalam	19.6	10.4	12.9	15.1	17.9	20.8	26.0	28.9	28.0	26.2	26.3	25.7	27.4
Anuradhapura	26.6	8.7	12.3	16.4	21.8	33.3	46.5	46.3	43.6	48.3	46.3	46.1	38.4
Polonnaruwa	47.7	11.8	15.7	23.0	38.0	66.9	85.3	86.9	85.5	88.0	89.6	88.9	88.5
Badulla	10.1	4.0	5.6	6.3	7.5	12.1	15.8	17.2	15.8	17.6	18.3	16.6	14.0
Monaragala	27.1	10.8	12.9	17.9	27.3	37.4	48.5	47.2	43.5	44.7	43.3	40.0	37.4
Ratnapura	14.1	6.1	8.4	9.5	10.5	14.1	17.4	20.8	20.7	21.7	23.7	25.4	25.4
Kegalla	14.4	12.6	12.2	11.0	10.7	13.9	16.8	17.5	19.3	18.4	17.6	18.6	18.7

Source: Based on place of birth data published in *Census of Population 1971 - Preliminary Report*.

Table 42. Sex ratios (males per 1,000 females) among migrants (persons born in other districts) to rural areas by age group, 1971 census

District	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59
Colombo	1,076	954	1,040	1,009	896	897	937	1,019	1,045
Kalutara	1,314	818	635	681	773	713	860	824	1,066
Kandy	951	653	551	714	849	990	1,137	1,144	1,121
Matale	1,044	735	800	945	845	1,144	1,140	1,613	1,436
Nuwara Eliya	947	609	673	725	923	1,158	1,200	1,093	1,229
Galle	985	811	618	614	640	735	656	753	926
Matara	1,004	584	664	712	617	1,028	1,077	924	1,234
Hambantota	1,368	916	908	927	940	1,130	1,265	1,064	1,560
Jaffna	1,827	1,572	1,140	1,060	1,445	968	1,688	3,000	1,669
Mannar	2,267	2,853	1,695	2,295	1,666	2,036	2,502	2,993	1,258
Vavuniya	1,731	1,950	1,483	1,525	1,585	2,314	1,836	2,552	2,553
Batticaloa	1,655	2,366	2,705	2,180	2,096	4,573	4,515	3,967	4,800
Amparai	1,186	1,289	1,379	1,453	1,541	2,140	1,908	1,372	1,277
Trincomalee	1,568	1,338	1,532	1,817	2,121	1,494	1,313	1,619	1,560
Kurunegala	1,131	866	728	913	810	909	1,137	1,098	1,069
Puttalam	1,003	941	709	899	930	1,035	1,033	1,072	1,238
Anuradhapura	1,244	1,281	1,209	1,222	1,170	1,396	1,322	1,808	2,163
Polonnaruwa	1,268	1,493	1,315	1,400	1,263	1,480	1,541	1,830	1,430
Badulla	1,181	824	780	964	1,138	1,768	1,203	1,371	1,862
Monaragala	1,315	1,137	1,198	1,224	1,434	1,757	1,744	2,471	1,417
Ratnapura	1,199	1,080	924	1,107	1,211	1,607	1,349	1,759	1,669
Kegalla	1,003	681	566	693	588	839	847	843	980

Source: Based on place of birth data published in *Census of Population, 1971 - Preliminary Report*.

Table 41. Sex ratios (males per 1,000 females) among migrants (persons born in other districts) to urban areas by age group, 1971 census

District	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59
Colombo	1,616	2,026	1,862	1,714	1,353	1,603	1,477	1,431	1,305
Kalutara	1,127	870	943	819	821	1,154	769	1,000	1,142
Kandy	1,497	1,912	1,580	1,724	1,763	1,519	1,439	1,144	1,973
Matale	1,439	879	688	701	1,255	1,519	1,454	1,092	1,271
Nuwara Eliya	1,269	1,382	842	1,109	1,635	2,367	1,201	1,719	2,128
Galle	1,153	800	1,012	705	675	937	744	1,158	1,143
Matara	765	556	512	719	758	952	772	588	336
Hambantota	4,066	3,336	4,634	2,305	1,251	1,738	2,622	2,522	1,594
Jaffna	2,083	1,613	1,193	1,721	1,333	1,434	1,938	776	1,548
Mannar	1,387	1,528	1,440	1,355	2,506	784	3,640	1,273	1,000
Vavuniya	1,000	1,118	1,091	1,569	1,456	1,044	1,500	1,206	3,462
Batticaloa	1,050	1,026	2,000	961	2,040	2,158	1,215	1,333	2,323
Amparai	1,995	1,389	1,681	3,344	1,218	1,490	2,736	1,000	692
Trincomalee	1,479	1,404	1,020	1,058	1,436	1,482	2,368	3,395	1,948
Kurunegala	2,457	3,147	2,139	1,401	1,368	1,602	1,672	1,600	1,800
Puttalam	564	1,082	1,146	1,888	966	1,440	1,815	1,772	767
Anuradhapura	1,171	1,310	1,181	1,114	1,083	1,758	1,471	1,524	1,480
Polonnaruwa	1,304	1,372	1,430	1,686	1,732	1,221	948	2,000	1,383
Badulla	1,235	2,132	2,127	1,472	1,929	2,095	1,413	2,468	1,840
Monaragala	248	455	388	2,000	3,736	1,394	2,036	3,036	4,071
Ratnapura	1,698	1,752	1,756	1,963	1,175	1,622	2,280	1,337	2,876
Kegalla	903	1,131	711	947	1,190	1,333	1,947	1,000	1,597

Source: Based on the unpublished data of the 1971 census of Sri Lanka.

outnumbered the females in the urbanward migrant streams. However, in the Matara District, there have been more female migrants to urban areas within the district, the proportion of males to females being much less in the 25-29 age group. In Colombo, which is the most urbanized district, male urbanward migrants have substantially outnumbered the females in all age groups, particularly in the younger age groups 15-34 years. In the 20-24 year age groups the number of male migrants has been more than double the female migrants. The pattern of young male-predominant urbanward migrant streams obtains in all districts except Kalutara, Galle, Matara, Monaragala and Kegalla.

It may also be noted that in Hambantota, the number of male migrants has been over four times the female migrants in the ages 15-19 and 25-29 years and over three times in the 20-24 years age group.

The age specific sex-ratios among lifetime migrants to rural areas in the various districts are shown in table 42. In most of the districts, and in most age groups, there has been a preponderance of males among the migrants to rural areas. However,

in Galle there have been more females than males in all ages, while in Kalutara, Kandy, Nuwara Eliya, Matara and Kegalla, females outnumbered the males in most age groups.

H. MIGRATION PATTERN IN COLOMBO DISTRICT

It has been observed earlier that in all years Colombo District recorded the largest proportion of in- and out-migrants. Hence a discussion of the pattern of migration in respect of this district seems to be appropriate.

The place of birth data for Colombo District indicates that 163,300, or 6.1 per cent, of its population in 1971 were lifetime migrants^{18/}. The data on usual residence disclose that there was a net in-migration of about 50,000 persons into this district during the 1966-1971 period. The origin and destination of migrants into and out of Colombo District are indicated in table 43.

^{18/} This analysis by P. Wilson is based on the complete tabulation of the 1971 census data whereas the earlier analysis were based on 10 per cent sample tabulation. Hence the slight discrepancy in figures.

**Table 43. District of origin and destination of the migrants^{a/}
Colombo District, 1966-1971**

District	Number of migrants (in thousands)		
	In-migrants	Out-migrants	Net migrants
Kalutara	15.2	13.4	1.8
Kandy	15.8	8.1	7.7
Matale	2.9	1.6	1.3
Nuwara Eliya	5.0	1.8	3.2
Galle	18.1	5.1	13.0
Matara	13.2	2.3	10.9
Hambantota	2.1	1.2	0.9
Jaffna	8.0	1.5	6.5
Mannar	0.5	1.1	-0.6
Vavuniya	0.4	0.7	-0.3
Batticaloa	0.9	0.8	0.1
Amparai	0.9	1.2	-0.3
Trincomalee	1.0	2.2	-1.2
Kurunegala	11.4	11.4	0.0
Puttalam	4.9	7.8	-2.9
Anuradhapura	3.1	6.2	-3.1
Polonnaruwa	1.3	1.9	-0.6
Badulla	5.0	2.8	2.2
Monaragala	0.6	1.2	-0.6
Ratnapura	9.6	4.8	4.8
Kegalla	12.6	5.2	7.4
Total	132.5	82.3	50.2

Source: P. Wilson, "Internal Migration in Sri Lanka" (mimeo)

Note: ^{a/} Excludes an unspecified category of 55,200 migrants.

There has been a net in-migration into Colombo from 12 districts: Kalutara, Kandy, Matale, Nuwara Eliya, Galle, Matara, Hambantota, Jaffna, Batticaloa, Badulla, Ratnapura and Kegalla. Although about one-third of the in-migrants into Colombo District (43,700) originated from the five surrounding districts (Kalutara, Kegalla, Ratnapura, Kurunegala and Puttalam) Colombo lost almost the same number (42,600) to these five districts. In other words, in net terms Colombo gained only about 900 persons from its neighbouring districts. It will also be noticed that Kurunegala District had zero net-migration in relation to Colombo. There were eight districts, Mannar, Vavuniya, Amparai, Trincomalee, Puttalam, Anuradhapura, Polonnaruwa and Monaragala, which in net terms gained population from Colombo District during 1966-1971. Ex-

cept for Puttalam and Anuradhapura, the net out-migrants from Colombo District were more or less evenly distributed among the other six districts.

The age-sex composition of the in- and out-migrants of Colombo District is shown in table 44. It will be observed that the highest concentration of in-migrants, both males and females, was in the 15-24 age group followed by the 25-36 age group. But among the out-migrants, the largest proportion were children below 15 years of age while the second largest group were aged 25-44 years. An examination of the proportion of in- and out-migrants in the working age group 15-64 years shows that nearly 77.7 per cent of male and 68.9 per cent of female in-migrants were in the working age groups, while among the out-migrants the corresponding proportions were 64.4 per cent and 55.7 per cent respectively. Since employment or search for employment is the basic motivational factor behind in-migration into Colombo District, the highest concentration of migrants is in the working ages and the proportion of children in the migrant stream is therefore low. On the other hand, the majority of out-migrants from Colombo belong to the employed categories that are being transferred to the developmental schemes in other districts or are persons returning to their home districts on retirement. These categories of people more often than not move out with their families and the proportion of children among them is relatively high.

Table 44. Percentage distribution of in- and out-migrants, Colombo District, by age and sex, 1966-1971

Age group	In-migrants		Out-migrants	
	Male	Female	Male	Female
0-14	20.9	28.3	33.2	42.2
15-24	38.5	32.3	21.4	22.0
25-44	32.0	29.4	33.2	27.3
45-64	7.2	7.2	9.8	6.4
65+	1.4	2.8	2.4	2.1
All ages	100.0	100.0	100.0	100.0

Source: Department of Census and Statistics, unpublished data of 1971 Census of Population.

CHAPTER IV

URBANIZATION

A. INTRODUCTION

Urbanization is a process of population concentration. Throughout the centuries, human settlements all over the world have been mostly rural. But in recent times, towns and cities have assumed increasing importance as places of human residence and employment. Historically speaking, in most developed countries, urbanization has largely been a function of industrial and economic development. However, the rapid accumulation of population in the urban centres of the developing countries today has preceded any significant transformation in the economies of these countries and appears to be the result largely of the rapidly increasing population. Unlike the urban centres which developed in Europe and North America during the 19th century, most cities of the developing world have sprung up in advance of any fundamental changes in the local economy and its attendant stimulus to industrialisation."^{1/}

As noted in chapter I, Sri Lanka experienced a rapid rate of population growth during the period immediately following the Second World War. However, its rate of urbanization was neither as spectacular as the rate of growth of its total population nor comparable to the rate of urban growth in many of the developing countries during the same period. It will therefore be interesting to examine the pattern of urbanization and the various social and economic factors that have combined to produce the somewhat unusual rural-urban situation in the country.

B. PROBLEMS IN ANALYSIS

A systematic study of the levels and trends in urbanization in Sri Lanka is handicapped by a number of factors, particularly those relating to the definition of "urban" areas. In the first instance, as was observed by a former census superintendent, it is very difficult "especially in a country like Ceylon, where the traditional economic heritage is agriculture, to dis-

tinguish, for purposes of statistical comparison, an 'urban area' from a 'rural area'. The great city of Anuradhapura in ancient times, notwithstanding its size and architectural features, was not altogether 'urban', for it contained within its limits irrigation tanks, paddy fields, and even forests. Within the Municipal limits of Kandy today, there are situated estates of appreciable acreage, while within the area under the administrative jurisdiction of the Badulla Urban Council there are large extents of paddy fields. Some of the larger 'villages' are more densely populated than some 'towns' which had been brought under the operation of the 'Small Towns Sanitary Ordinance'. 'Town' and 'village' are ordinarily words of somewhat vague application and are not easily defined and distinguished"^{2/}

Secondly, any analysis of the Sri Lanka census data on urban population should take into consideration the limitations imposed by the official definitions of urban places. The census definition of "urban area" covers those localities coming under the administration of town councils, urban councils and municipalities. In Sri Lanka, urban status is conferred by the Minister of Local Government for local administrative purposes. The village council, which is the rural local government unit, could be up-graded to a town council, and the towns can graduate from one status to another. However, there are no well defined criteria to guide the ministerial decisions in this respect, except vague notions regarding "nature of development of the locality or its amenities and urban character"^{3/} There is no doubt that personal and political considerations also play an important role in the decision to create new town councils or in the upgrading of existing urban administrative units. "Two difficulties result. One is that boundaries may not accurately delimit the urban population as defined in demographic, occupational, sociological or morphological terms, (or perhaps they used to, but have not been altered to keep pace with the changing character and extent of the urban areas). The other is that clusters of population that would qualify as 'urban'

^{1/} Thomas T. Poleman, "Population and employment: Ceylon's crisis in global perspective" in *Marga* (Colombo), vol. 1, No. 3, 1972, p.40 A similar view has been expressed by Godfrey Gunatileke, "The expansion of the urban population and the migration from the village to towns and cities as it occurs in the developing world is not exclusively the result of structural change and the expansion of the modern sector." in "Rural-urban balance and development - the experience in Sri Lanka", *Marga* vol. 2, No.1, 1973, p.38.

^{2/} A.G. Ranasinha, *Census of Ceylon 1946, vol. I, part I, General Report*, (Colombo Department of Census and Statistics, 1950), pp. 73-74.

^{3/} Department of Town and Country Planning, *Urbanization in Ceylon* (mimeo); quoted in Gavin W. Jones and S. Selvaratnam, "Urbanization in Ceylon, 1946-1963", *Modern Ceylon Studies* (Colombo), vol. 1, No. 2, p. 200.

according to definitions based on population density, occupational structure or some other criterion may simply never have been granted urban status in administrative terms, and are therefore included in the rural population by the census".^{4/}

Thirdly, analysis of trends in urbanization in Sri Lanka is complicated by the fact that the number of areas classified as urban has varied from census to census. The number of urban units increased from 19 in 1871 to 135 in 1971. The urban classification that had remained in vogue from 1871 to 1901 included the municipal councils and urban councils. A new category of urban area called "local board" was created in 1901 and abolished by 1953. The town councils

the characteristics of small urban communities. The change in their administrative status and their inclusion in the 1971 census tend therefore to distort the actual trend in urbanization and reflect spurts of urban growth which in fact did not take place".^{5/}

C. LEVELS AND TRENDS

1. National pattern

The numerical and percentage increase, as well as the average annual intercensal growth rates of both the urban and the total population as recorded at the various censuses of Sri Lanka during the 10 decades, 1871-1971, is given in table 45. It will be observed

Table 45. Growth of the total and urban population, Sri Lanka, 1871-1971

Census year	Total population	Urban population	Percentage of urban	Percentage increase		Average annual growth rate (percentage)	
				Total population	Urban population	Total population	Urban population
1871	2,400,380	260,376	10.8	-	-	-	-
1881	2,759,738	281,065	10.2	15.0	7.9	1.42	0.78
1891	3,007,789	321,413	10.7	9.0	14.4	0.86	1.35
1901	3,565,954	414,025	11.6	18.6	28.8	1.72	2.56
1911	4,106,350	542,945	13.2	15.2	31.1	1.42	2.74
1921	4,498,605	637,870	14.2	9.5	17.5	0.91	1.62
1931	5,306,871	737,272	13.9	18.0	15.6	1.68	1.47
1946	6,657,339	1,023,042	15.4	25.4	38.8	1.52	2.20
1953	8,097,895	1,239,133	15.3	21.6	21.1	2.84	2.77
1963	10,582,064	2,016,285	19.1	30.7	62.7	2.65	4.88
1971	12,689,897	2,848,116	22.4	19.9	41.3	2.20	4.23

Sources: A.G. Ranasinha, *Census of Ceylon 1946, vol. I, part II, Statistical Digest* (Colombo, Department of Census and Statistics, 1950), table 6a; H.E. Peries, *Census of Ceylon 1953, vol. I, General Report* (Colombo, Department of Census and Statistics, 1957), appendix 3, tables 7 and 9, Government of Sri Lanka, *Census of Population 1971, vol. II, All Island Tables, part I, General Characteristics of the Population* (Colombo, Department of Census and Statistics, 1975), table 4.

were created after 1953 and the 1963 census included a number of new town councils, while the 1971 census had 37 new town councils established during the 1963-1971 intercensal period. "These changes in the administrative status of the local government units are not specifically related to any well-defined criteria of urbanization. For example, the new town councils which had been created between 1963 and 1971 contained populations ranging from 1,962 to 43,764. The larger suburbs of Colombo which had been upgraded from the status of Village Councils and contained populations over 20,000 has for a long time possessed all

from the table that while the total population of the country increased by a little over five times, the urban population increased more than tenfold during the 100 years. The proportion of urban population to total population, i.e. the level of urbanization, increased fluctuatingly from 10.8 per cent in 1871 to 15.3 per cent in 1953. Between 1953 and 1971, however, there

^{5/} Godfrey Gunatilleke, *loc. cit.*, p. 44. Jones and Selvaratnam, *loc. cit.*, p. 200, have argued "There has undoubtedly been some exaggeration of the level of urbanization as a result of the bloated areas of these Town Councils; but the more serious problem is almost certainly the underestimation of urbanization resulting from the existence of urbanized areas that have not yet been awarded Town Council status".

^{4/} Gavin W. Jones and S. Selvaratnam, *loc. cit.* pp. 199-200.

was a remarkable growth in the urban population which more than doubled from 1.2 million to 2.8 million. The percentage increases as well as the average annual growth rates indicate that the largest increase in the urban population had taken place between 1953 and 1963. Except during three intercensal periods, 1871-1881, 1921-1931 and 1946-1953, the rates of growth of the urban population have been substantially higher than the rates of growth of the total population. Since 1953, growth rates of urban population have been a little less than twice the rate of growth of total population.

Since towns with population below 2,000 persons have over the years contributed less than 2 per cent of the total urban population, the exclusion of these towns from the definition of urban areas does not significantly alter the proportion of urban population to total population (table 46). If the definition of the

or 5,000, the increase in the share of the urban population has been altogether insignificant. If the dividing line is applied at 10,000 or 20,000, the urban sector shows a faster rate of expansion. The figures reveal that the most rapid growth has taken place in the towns between 20,000 and 50,000. However, unless the ingredients of urbanisation are defined clearly, a dividing line at 10,000 or 20,000 in the context of a relatively small population as in Ceylon could distort the trend. Many of the urban units on the border of these dividing lines may be indistinguishable from the towns which have crossed the lines as far as their specifically urban characteristics are concerned".^{6/}

An attempt was made by Jones and Selvaratnam to correct the distortion in the trends in urbanization

Table 46. Population of urban areas as variously defined, Sri Lanka, 1871-1971

Census year	Total population (all sectors)	Population of urban areas with					
		2,000 persons and over	10,000 persons and over	20,000 persons and over	(3) as percentage of (2)	(4) as percentage of (2)	(5) as percentage of (2)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1871	2,400,380	255,096	213,098	177,586	10.6	8.9	7.4
1881	2,759,738	276,767	214,337	204,126	10.0	7.8	7.4
1891	3,007,789	321,413	265,362	223,969	10.7	8.8	7.4
1901	3,565,954	411,784	336,183	281,721	11.5	9.4	7.9
1911	4,106,350	530,963	427,956	348,855	12.9	10.4	8.5
1921	4,498,605	616,416	509,830	433,445	13.7	11.3	9.6
1931	5,306,871	723,989	616,059	497,422	13.6	11.6	9.4
1946	6,657,339	1,019,443	935,183	760,585	15.3	14.0	11.4
1953	8,097,895	1,235,071	1,177,042	963,892	15.3	14.5	11.9
1963	10,582,064	2,000,943	1,767,982	1,489,829	18.9	16.7	14.1
1971	12,689,897	2,837,297	2,516,544	2,016,983	22.4	19.8	15.9

Source: Computed from data in table 45.

urban sector is restricted to towns with 10,000 or more persons, the share of the urban population in total population is somewhat reduced over the years. If the standard international definition of urban area, i.e., towns with 20,000 persons or more, is adopted, the proportion of urban population to total population in Sri Lanka will only be about 16 per cent in 1971. As was observed by Gunatilleke:

"On any of these definitions, the rate of urbanisation remains low. If the minimum population size of urban units is taken as 2,000

between 1946 and 1963 caused by the official recognition between 1953 and 1963 of many towns that were already quite sizeable before 1953. The adjustment was made by adding to the recorded urban population of the respective years, the estimated 1946 and 1953 population of those town councils created after 1946. "The populations of Town Councils created between 1953 and 1963 were projected backwards to 1953 and 1946 on the assumption that in both 1953-1963 and 1946-1953 periods, their rate of population in-

6/ Godfrey Gunatilleke, *loc.cit.*, p. 46.

Table 47. Number of towns by size of population, Sri Lanka adjusted data, 1946, 1953 and 1963

Size of town in terms of population	Number of towns			Population		
	1946	1953	1963	1946	1953	1963
2,000 - 5,000	32	29	21	104,919	99,128	74,681
5,000 - 9,999	19	13	23	147,319	95,750	158,280
10,000 - 19,999	17	25	21	230,582	339,470	278,153
20,000 - 49,999	5	7	18	178,595	177,145	487,986
50,000 - 99,999	4	6	5	221,388	383,038	379,265
100,000 and over	1	1	2	368,700	426,127	622,578
All towns	76	79	90	1,251,503	1,520,658	2,000,943

Source: Gavin W. Jones and S. Selvaratnam, "Urbanization in Ceylon 1946-63", *Modern Ceylon Studies* (Colombo, University of Ceylon, 1970), vol. I, No. 2, table 4.

Table 48. Distribution of urban population according to size of town - adjusted data, 1946, 1953, 1963 and 1971

Size of town in terms of population	Number of towns				Population (in thousands)			
	1946	1953	1963	1971	1946	1953	1963	1971
2,000 - 5,000	36	35	32	34	119	113	103	110
5,000 - 9,999	30	29	29	27	222	216	209	191
10,000 - 19,999	19	25	29	34	263	351	391	486
20,000 - 49,999	5	9	21	26	177	219	576	800
50,000 - 99,999	4	6	5	2	221	383	379	411
100,000 and over	1	1	2	3	362	426	622	824
All towns	95	105	118	126	1,364	1,708	2,280	2,822

Source: Godfrey Gunatilleke, "Rural-urban balance and development - the experience in Sri Lanka", *Marga*, vol. 2, No. 1, 1973, table III.

crease was a third higher than that of the other towns that were in their town size class in the terminal year of the period under consideration. The reasoning behind this assumption was that a town probably had a better chance of being awarded Town Council status if its growth was unusually rapid, and that there is no question that some of the new Town Councils (especially those near Colombo) were growing more rapidly than other towns of comparable size^{7/}. The result of this adjustment has been an increase in the number of towns as well as in the total urban population in 1946 and 1953 as is evident from table 47.

In terms of the adjusted data, the share of the urban population in the total population of the country was 18.8 per cent in 1946 and 1953, thus indicating a slower rate of growth of the urban population during the post-1946 period.

A similar adjustment was made by Gunatilleke in regard to the new town councils included in the 1961 census. This adjustment has resulted in an increase in the number of towns as well as the urban population in 1946, 1953 and 1963 as indicated in table 48.

It may be noted that the method of adjustment adopted by Jones and Selvaratnam as well as by Gunatilleke did not make any allowance for changes in the administrative areas of the old units. Further, more accurate information regarding the past population of new town councils could have been obtained by analysis of the original census data available for these areas. Also, "it may be argued that the method that has been used for correcting the distortion could have the effect of deflating the rate of urbanisation. The method tends to assume a continuity in the process of urbanization and ignores the sharp discontinuities that are sometimes inherent in the expansion of the urban sector. In the Ceylon context, however, the me-

^{7/} Gavin W. Jones and S. Selvaratnam, *loc.cit.*, p. 204.

thod employed seems adequate as the data derived in this manner corresponds to the general trend that is evident in the urban sector as a whole"^{8/}

According to the adjustments made by Gunatilleke, the level of urbanization (as indicated by the proportion of urban population to total population) increased to 20.5 in 1946, 21.1 in 1953 and to 21.5 in 1963. Nevertheless, compared to a number of countries in the ESCAP region, the level of urbanization in Sri Lanka is low as is evident from table 49.

Table 49. Proportion of urban population (nationally defined) to total population in selected countries of the ESCAP region, 1968-1971

Country	Year	Percentage urban population
India	1971	19.9
Indonesia	1971	17.4
Iran	1971	41.3
Japan	1970	72.1
Malaysia (peninsular)	1970	28.8
Nepal	1971	4.0
New Zealand	1971	81.4
Pakistan	1968	26.8
Philippines	1970	31.7
Republic of Korea	1970	41.2
Sri Lanka	1971	22.4
Thailand	1970	13.2

Source: United Nations, *Demographic Yearbook 1973* (Sales No. E/F. 74. XIII.1), table 5.

2. District pattern

The proportion of urban to total population in each administrative district for all census years from 1946 to 1971 is shown in table 50. It will be seen that the level of urbanization has varied from district to district. Throughout the 25-year period, the district which had the largest proportion of its population resident in urban areas was the Colombo District. The proportion of urban to total population in this district increased from 40.7 per cent in 1946 to 55.2 per cent in 1971. Further, the district also contained over 50 per cent of the country's urban population in all years.

Next to Colombo, the districts with the highest urban proportions are Trincomalee in Eastern Province and Jaffna in Northern Province. The level of urbanization in the Trincomalee District has shown

marked variations, the proportion of urban to total population declining from 42.8 per cent in 1946 to 25.1 per cent in 1963, thereafter increasing to 38.4 per cent in 1971. In fact, there was a decline in the absolute number of urban people in this district between 1946 and 1953 "due to the closing down of military establishments and the consequent reduction of immigrant population".^{9/} On the other hand, in the Jaffna District, the proportion living in urban areas increased steadily from 14.7 per cent in 1946 to 33.3 per cent in 1971. It is also interesting to note that the entire population of the other two districts in Northern Province, Mannar and Vavuniya, was classified as rural until 1953. The smallest proportion of urban to total population (4.1 per cent) in 1971 was found in the Kurunegala District, though until 1963 the least "urbanized" district was Kegalla.

It is also clear from table 51 that the level of urbanization is not always directly related to the density of population. While the most densely populated Colombo District also has the highest proportion of its population living in urban areas, the urban component of the second most densely populated Kandy District is far below the average for the country as a whole. On the other hand, Vavuniya which throughout has been the least densely populated district, was in 1971 one of the most highly urbanized districts, its level of urbanization being almost equal to that of Kalutara District and almost double that of Kandy District.

It is also evident from table 52 that in almost all districts, the average annual rate of growth of the urban population during the 1946-1971 period has been higher than the rate of growth of the total population during the same period. However, the rate of growth of the urban population was not necessarily related to the rate of growth of the total population in all districts. For instance, the highest rate of growth of the urban population (9.48 per cent) was recorded in the Batticaloa/Amparai District which also had the third highest rate (3.82 per cent) of population growth. But an equally high rate of growth of urban population (9.16 per cent) was recorded in the Kegalla District where the rate of growth of the total population (1.93 per cent) was one of the lowest. In the Anuradhapura/Polonnaruwa District, an average annual rate of growth of 5.53 per cent for the total population was matched by a rate of growth in the urban population of only 6.04 per cent.

^{9/} H.E. Peries, *Census of Ceylon 1953, vol. I, General Report*, (Colombo, Department of Census and Statistics, 1957), p. 46.

^{8/} Godfrey Gunatilleke, *loc.cit.*, p. 45.

Table 50. Distribution of total and urban population by province and district, Sri Lanka, 1946, 1953, 1963 and 1971

Province/district	1946			1953			1963			1971		
	Total population	Urban population	Percentage urban	Total population	Urban population	Percentage urban	Total population	Urban population	Percentage urban	Total population	Urban population	Percentage urban
Western Province	1,876,904	629,009	33.5	2,232,276	767,465	34.4	2,838,877	1,150,272	40.5	3,401,779	1,635,655	48.1
Colombo	1,420,332	578,456	40.7	1,708,726	709,422	41.5	2,207,420	1,023,831	46.4	2,672,265	1,476,188	55.2
Kalutara	456,572	50,553	11.1	523,550	58,043	11.1	631,457	126,441	20.0	729,514	159,467	21.9
Central Province	1,135,290	100,751	8.9	1,366,685	125,500	9.2	1,697,018	173,118	10.2	1,953,044	212,498	10.9
Kandy	711,449	75,883	10.7	840,382	90,407	10.8	1,043,632	119,228	11.4	1,187,925	147,318	12.4
Matale	155,720	14,090	9.0	201,049	17,244	8.6	255,630	29,380	11.5	314,841	37,553	11.9
Nuwara Eliya	268,121	10,828	4.0	325,254	17,849	5.5	397,756	24,510	6.2	450,278	27,627	6.1
Southern Province	961,418	104,619	10.9	1,129,308	117,999	10.4	1,430,740	212,646	14.9	1,661,870	254,341	15.3
Galle	459,785	58,961	12.8	524,369	66,402	12.7	641,474	129,954	20.3	735,173	154,952	21.1
Matara	351,947	34,831	9.9	413,431	40,475	9.8	514,969	60,444	11.7	586,443	66,109	11.3
Hambantota	149,686	10,827	7.2	191,508	11,122	5.8	274,297	22,248	8.1	340,254	33,280	9.8
Northern Province	479,572	62,543	13.0	570,650	77,181	13.5	741,341	170,978	23.1	874,626	265,615	30.4
Jaffna	424,788	62,543	14.7	491,849	77,181	15.7	612,596	150,784	24.6	701,603	233,892	33.3
Mannar	31,538	-	-	43,689	-	-	60,124	8,993	15.0	77,780	11,095	14.3
Vavuniya	23,246	-	-	35,112	-	-	68,621	11,201	16.3	95,243	20,628	21.7
Eastern Province	279,112	45,544	16.3	354,410	43,795	12.4	546,474	112,705	20.6	717,571	173,717	24.2
Batticaloa / Amparai	203,186	13,037	6.4	270,493	17,439	6.4	407,921	77,888	19.1	529,326	101,478	19.2
Trincomalee	75,926	32,507	42.8	83,917	26,356	31.4	138,553	34,817	25.1	188,245	72,239	38.4
North-Western Province	667,889	32,445	4.9	855,228	42,136	4.9	1,155,207	68,334	5.9	1,404,063	94,668	6.7
Kurunegala	485,042	15,545	3.2	626,336	20,507	3.3	852,661	30,100	3.5	1,025,633	42,245	4.1
Puttalam	182,847	16,900	9.2	228,892	21,629	9.4	302,546	38,234	12.6	378,430	52,423	13.9
North-Central Province	139,534	12,314	8.8	229,282	18,390	8.0	393,759	38,788	9.9	552,423	55,111	10.0
Anuradhapura / Polonnaruwa	139,534	12,314	8.8	229,282	18,390	8.0	393,759	38,788	9.9	552,423	55,111	10.0
Uva Province	372,238	16,333	4.4	466,896	22,082	4.7	654,105	45,650	7.0	808,425	60,500	7.5
Badulla / Monaragala	372,238	16,333	4.4	466,896	22,082	4.7	654,105	45,650	7.0	808,425	60,500	7.5
Sabaramuwa Province	745,382	19,484	2.6	893,160	24,585	2.8	1,124,543	43,794	3.9	1,316,096	96,011	7.3
Ratnapura	343,620	14,581	4.2	421,555	19,075	4.5	546,037	26,281	4.8	661,344	49,933	7.6
Kegalla	401,762	4,903	1.2	471,605	5,510	1.2	578,506	17,513	3.0	654,752	46,078	7.0
Sri Lanka	6,657,339	1,023,044	15.4	8,097,895	1,239,133	15.3	10,582,064	2,016,285	19.1	12,689,897	2,848,116	22.4

Sources: Calculated from data published in A.G. Ranasingha, *Census of Ceylon 1946, vol. I, part II, Statistical Digest* (Colombo, Department of Census and Statistics, 1950), table 1 (a); H.E. Peries, *Census of Ceylon 1953, vol. I, General Report* (Colombo, Department of Census and Statistics, 1957), appendix 3, tables 2 and 7; Government of Sri Lanka, *Census of Population 1971, vol. II, All Island Tables, part I, General Characteristics of the Population* (Colombo, Department of Census and Statistics, 1975), table 4.

Table 51. Density of total population, and proportion of urban to total population by administrative district, Sri Lanka, 1946, 1953, 1963 and 1971

Province/district	Density of total population (number of persons per sq mi)					Proportion of urban to total population				
	1946	1953	1963	1971	1946	1953	1963	1971		
Western Province	1,310.7	1,558.9	1,982.4	2,375.5	33.5	34.4	40.5	48.1		
Colombo	1,757.3	2,114.1	2,731.1	3,306.2	40.7	41.5	46.4	55.2		
Kalutara	732.0	839.4	1,012.4	1,169.6	11.1	11.1	20.0	21.9		
Central Province	495.7	596.8	786.4	905.0	8.9	9.2	10.2	10.9		
Kandy	778.5	919.6	1,142.0	1,299.9	10.7	10.8	11.4	12.4		
Matale	172.6	222.8	331.9	408.7	9.0	8.6	11.5	11.9		
Nuwara Eliya	565.8	686.4	839.4	950.2	4.0	5.5	6.2	6.1		
Southern Province	448.0	526.2	666.6	774.3	10.9	10.4	14.9	15.3		
Galle	704.9	803.9	983.4	1,127.1	12.8	12.7	20.3	21.1		
Matara	731.3	859.1	1,070.1	1,218.6	9.9	9.8	11.7	11.3		
Hambantota	147.8	189.1	270.8	336.0	7.2	5.8	8.1	9.8		
Northern Province	139.8	166.4	216.2	255.0	13.0	13.5	23.1	30.4		
Jaffna	425.4	492.5	613.4	702.6	14.7	15.7	24.6	33.3		
Mannar	32.7	45.3	62.4	80.7	-	-	15.0	14.3		
Vavuniya	15.9	23.9	46.8	64.9	-	-	16.3	21.7		
Eastern Province	72.7	92.3	168.5	221.3	16.3	12.4	20.6	24.2		
Batticaloa/Amparai	72.8	96.9	185.9	241.2	6.4	6.4	19.1	19.2		
Trincomalee	72.4	80.1	132.2	179.6	42.8	31.4	25.1	38.4		
North Western Province	221.4	283.6	383.0	465.6	4.9	4.9	5.9	6.7		
Kurunegala	263.1	339.7	462.4	556.3	3.2	3.3	3.5	4.1		
Puttalam	156.0	195.3	258.1	322.9	9.2	9.4	12.4	13.9		
North Central Province	34.8	57.2	95.1	133.4	8.8	8.0	9.9	10.0		
Anuradhapura/Polonnaruwa	34.8	57.2	95.1	133.4	8.8	8.0	9.9	10.0		
Uva Province	113.6	142.5	168.8	208.6	4.4	4.7	7.0	7.5		
Badulla/Monaragala	113.6	142.5	168.8	208.6	4.4	4.7	7.0	7.5		
Sabaragamuwa Province	393.9	471.9	594.2	695.4	2.6	2.8	3.9	7.3		
Ratnapura	274.8	337.1	436.7	528.9	4.2	4.5	4.8	7.6		
Kegalla	625.8	734.6	901.1	1,019.9	1.2	1.2	3.0	7.0		
Sri Lanka	262.8	319.7	417.7	500.9	15.4	15.3	19.1	22.4		

Sources: Density of population calculated from table 25 in chap. II; proportion of urban to total population from table 50.

Table 52. Average annual growth rates of total as well as urban population by district, Sri Lanka, intercensal periods, 1946 to 1971
(percentage)

Province/district	Average annual growth rate of total population				Average annual growth rate of urban population			
	1946 to 1953	1953 to 1963	1963 to 1971	1946 to 1971	1946 to 1953	1953 to 1963	1963 to 1971	1946 to 1971
Western Province	2.51	2.38	2.19	2.35	2.88	4.04	4.31	3.81
Colombo	2.67	2.54	2.32	2.50	2.96	3.66	4.49	3.73
Kalutara	1.97	1.85	1.75	1.85	1.99	7.92	2.82	4.60
Central Province	2.68	2.14	1.70	2.15	3.19	3.18	2.51	2.96
Kandy	2.41	2.14	1.57	2.03	2.54	2.75	2.56	2.63
Matale	3.72	2.38	2.53	2.79	2.93	5.35	2.99	3.91
Nuwara Eliya	2.80	1.99	1.50	2.05	7.40	3.00	1.63	3.73
Southern Province	2.32	2.34	1.81	2.16	1.73	5.93	2.17	3.54
Galle	1.89	1.99	1.65	1.85	1.71	6.79	2.13	3.85
Matara	2.33	2.17	1.57	2.02	2.17	4.00	1.08	2.54
Hambantota	3.58	3.58	2.62	3.27	0.38	7.02	4.95	4.49
Northern Province	2.51	2.59	2.00	2.38	3.05	8.10	5.43	5.82
Jaffna	2.12	2.17	1.64	1.98	3.05	6.77	5.41	5.30
Mannar	4.76	3.17	3.14	3.60	-	-	2.55	-
Vavuniya	6.07	6.78	4.01	5.67	-	-	7.60	-
Eastern Province	3.47	4.33	3.32	3.76	-0.56	9.69	5.33	5.38
Batticaloa/Amparai	4.17	4.10	3.17	3.82	8.21	15.77	3.22	9.48
Trincomalee	1.44	5.03	3.75	3.62	-2.95	2.76	9.15	3.17
North-Western Province	3.59	2.99	2.37	2.95	3.80	4.85	3.99	4.28
Kurunegala	3.72	3.07	2.24	2.97	4.04	3.83	4.15	3.99
Puttalam	3.26	2.77	2.72	2.89	3.59	5.73	3.86	5.53
North-Central Province	7.35	5.44	4.15	5.53	5.89	7.58	4.30	6.04
Anuradhapura/Polonnaruwa	7.35	5.44	4.15	5.53	5.89	7.58	4.30	6.04
Uva Province	3.29	3.36	2.57	3.08	4.40	7.37	3.44	5.26
Badulla/Monaragala	3.29	3.36	2.57	3.08	4.40	7.37	3.44	5.26
Sabaragamuva Province	2.62	2.28	1.90	2.25	3.38	5.81	9.87	6.44
Ratnapura	2.96	2.56	2.32	2.60	3.91	3.19	8.00	4.93
Kegalla	2.32	2.02	1.50	1.93	1.68	11.98	12.31	9.16
Sri Lanka	2.84	2.65	2.20	2.56	2.77	4.88	4.23	4.09

Source: Computed from the data in table 50.

The lack of any definite relationship between levels and rates of urbanization on the one hand, and the density and rates of growth of the total population on the other, has largely to be explained in terms of two factors. First, as pointed out earlier, is the definition of urban areas, which in some cases under-estimates and in others overestimates the level of urbanization. For instance, in 1946 and 1953, the entire population of Vavuniya District was classified as rural, but the sudden conferment of urban status in 1963 on the present Vavuniya Town Council area resulted in a level of urbanization in this district which is substantially higher than, say, Kandy District in which over 10 per cent of the population has over the years been classified as urban residents. Secondly, the very high rates of population growth observed in districts like Vavuniya and Polonnaruwa has been largely due, as discussed in chapter II, to in-migration from the wet zone districts. This movement was largely into the colonization schemes situated in the rural areas of the two districts. Hence the spectacular increase in total population did not result in an equally spectacular increase in the urban population in these districts.

It may also be noted that relatively high levels of urbanization are found in the districts on the south-west coast, namely, Colombo, Kalutara, Galle and Puttalam, and in the Jaffna District in the north, and in the two districts in Eastern Province. On balance, the majority of the districts had urban component less than 15 per cent. In 1971, the

proportion of urban to total population was higher than the national average only in three districts, Colombo, Jaffna and Trincomalee.

3. Size of towns

Changing levels of urbanization can also be assessed by comparing the number of towns of a given size and the distribution of population among them. A classification of the various urban areas by population size for all census years is given in table 53. If for purposes of discussion, towns with less than 10,000 persons each are considered as small towns, those with population between 10,000 and 50,000 as medium sized towns, and those with 50,000 persons or more are considered as large towns, the number of cities in each size class in Sri Lanka over the years is indicated below.

In almost all years, the hierarchy of towns appears to be almost pyramidal in structure, with the smallest towns at the base being the largest in number, and the number reducing progressively as the towns increase in size. In 1953, however, the medium sized towns were more numerous than the small towns. Though in terms of numbers, the small towns dominate, their proportionate share in the total number of towns has recorded a decline over the years from about 74 per cent in 1871 to 50 per cent in 1971. On the other hand, there has been a steady increase in the number of medium sized towns whose share increased from 21 per cent in 1871 to about 44 per cent in 1971.

Numerical and percentage distribution of towns by size

Census Year	Small		Medium		Large		Total	
	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
1871	14	73.7	4	21.1	1	5.2	19	100.0
1881	15	75.0	4	20.0	1	5.0	20	100.0
1891	13	65.0	6	30.0	1	5.0	20	100.0
1901	19	67.9	8	28.6	1	3.5	28	100.0
1911	25	69.4	10	27.8	1	2.8	36	100.0
1921	29	69.0	12	28.6	1	2.4	42	100.0
1931	26	61.9	15	35.7	1	2.4	42	100.0
1946	19	45.3	18	42.8	5	11.9	42	100.0
1953	15	34.9	21	48.8	7	16.3	43	100.0
1963	53	53.5	39	39.4	7	7.1	99	100.0
1971	68	50.4	59	43.7	8	5.9	135	100.0

Table 53. Distribution of urban population according to size of towns, Sri Lanka, 1871-1971

Census year	Size of town in terms of population							All towns	
	Below 2,000	2,000 to 4,999	5,000 to 9,999	10,000 to 19,999	20,000 to 49,999	50,000 to 99,999	100,000 and over		
1871	Number of towns	4	8	2	2	2	1	-	19
	Population	5,280	26,789	15,209	35,512	81,743	95,843	-	260,376
	Percentage of total urban	2.0	10.3	5.8	13.6	31.4	36.9	-	100.0
1881	Number of towns	3	8	4	1	3	-	1	20
	Population	4,298	30,032	32,398	10,211	93,624	-	110,502	281,065
	Percentage of total urban	1.5	10.7	11.5	3.6	33.3	-	39.3	100.0
1891	Number of towns	-	9	4	3	3	-	1	20
	Population	-	30,135	25,916	41,393	97,144	-	126,825	321,413
	Percentage of total urban	-	9.4	8.1	12.9	30.2	-	39.5	100.0
1901	Number of towns	3	10	6	4	4	-	1	28
	Population	2,262	35,481	40,120	54,462	127,030	-	154,691	414,046
	Percentage of total urban	0.5	8.6	9.7	13.2	30.7	-	37.4	100.0
1911	Number of towns	6	6	13	6	4	-	1	36
	Population	6,703	18,598	84,409	79,101	137,581	-	211,274	537,666
	Percentage of total urban	1.2	3.5	15.7	14.8	25.6	-	39.3	100.0
1921	Number of towns	11	7	11	6	6	-	1	42
	Population	15,455	24,313	82,273	76,385	189,282	-	244,163	631,871
	Percentage of total urban	2.4	3.8	13.0	12.1	30.0	-	38.6	100.0
1931	Number of towns	9	5	12	9	6	-	1	42
	Population	13,284	16,176	91,754	118,637	213,267	-	284,155	737,273
	Percentage of total urban	1.8	2.2	12.4	16.1	28.9	-	38.5	100.0
1946	Number of towns	3	9	7	13	5	4	1	42
	Population	3,601	28,386	55,874	174,598	177,123	221,388	362,074	1,023,044
	Percentage of total urban	0.4	2.8	5.5	17.1	17.3	21.6	35.4	100.0
1953	Number of towns	3	8	4	15	6	6	1	43
	Population	4,062	28,338	29,691	213,150	154,727	383,038	426,127	1,239,133
	Percentage of total urban	0.3	2.3	2.4	17.2	12.5	30.9	34.4	100.0
1963	Number of towns	9	21	23	21	18	5	2	99
	Population	15,342	74,681	158,280	278,153	487,986	379,265	622,578	2,016,285
	Percentage of total urban	0.8	3.7	7.9	13.8	24.2	18.8	30.9	100.0
1971	Number of towns	6	32	30	34	25	5	3	135
	Population	10,819	104,095	215,848	499,561	781,874	411,311	823,798	2,848,116
	Percentage of total urban	0.4	3.7	7.6	17.5	27.5	14.4	28.9	100.0

Source: Prepared on the basis of the data obtained from the various sources referred to in table 45.

The proportionate distribution of urban population among small, medium and large towns over the years presents an interesting picture as is evident from the following summary data.

Year	Proportionate share of total urban population		
	Small towns	Medium towns	Large towns
1871	18.1	45.0	36.9
1881	23.7	36.9	39.4
1891	17.5	43.1	39.4
1901	18.8	43.8	37.4
1911	20.4	40.4	39.2
1921	19.2	42.1	38.7
1931	16.4	45.1	38.5
1946	8.7	34.3	57.0
1953	5.0	29.7	65.3
1963	12.4	38.0	49.6
1971	11.7	45.0	43.0

Medium and large sized towns have together accounted for over 75 per cent of the total urban population in all years. The proportionate share of large sized towns in total urban population recorded a spectacular increase from 38.5 per cent in 1931 to 65.3 per cent in 1953 and correspondingly there has been a fall in the proportionate share of the small and medium sized towns during this period. Since 1953, however, the share of large towns have considerably fallen to 43.0 in 1971 while the share of medium sized towns has increased from 29.7 per cent in 1953 to 45.0 per cent in 1971. Thus in Sri Lanka, "the medium sized towns are dominating the process of urbanisation."^{10/}

As was noted earlier, in 1971 there were only eight towns whose population exceeded 50,000. The growth of those towns during the 25-year period 1946-1971 is shown in table 54.

It will be seen from the table that of the eight large towns in Sri Lanka, the highest rate of growth was experienced by Dehiwala Mt. Lavinia, followed by Kotte and Moratuwa which really are the suburban areas of Colombo City. Colombo City grew more slowly than the total population of the country, its rate of growth decreasing progressively over the years. Whereas the annual average rate of growth of the population of Kandy has gradually increased over the three intercensal periods, the rates for Jaffna and Galle have declined during the period.

4. Colombo metropolitan area

The capital city of Colombo is by far the largest city in Sri Lanka. In 1971, its population was over three and half times the population of the second largest city, Dehiwala-Mt. Lavinia and over five times the third largest city of Jaffna. Colombo City also contains nearly one-fifth the total urban population of the country. It owes its importance and development chiefly to its harbour which is one of the largest artificial harbours of the world. The growth of the city's population over the years was largely due to the rise of commercial and financial enterprises and other economic opportunities in the city.^{11/}

Table 54. Population growth in large towns, Sri Lanka, 1946 to 1971

Name of town	Total population				Average annual growth rates (percentage)			
	1946	1953	1963	1971	1946/ 1953	1953/ 1963	1963/ 1971	1946/ 1971
Colombo	362,074	426,127	511,644	562,420	2.35	1.81	1.14	1.74
Dehiwala-Mt. Lavinia	56,881	78,213	110,934	154,194	4.65	3.48	4.03	3.98
Jaffna	62,543	77,181	94,670	107,184	3.05	2.02	1.50	2.13
Moratuwa	50,698	60,215	77,833	96,267	2.49	2.54	2.58	2.54
Kotte	40,218	54,381	73,324	93,680	4.40	2.97	2.98	3.36
Kandy	51,266	57,200	68,202	93,303	1.58	1.74	3.83	2.37
Galle	49,009	55,848	65,236	71,266	1.88	1.53	1.07	1.48
Negombo	32,479	38,628	46,908	56,795	2.51	1.92	2.32	2.21

10/ P. Puvanarajan, "Pattern and processes of urbanization in Sri Lanka," Summary paper presented to Seminar on Population Problems of Sri Lanka in the Seventies, Colombo, December 1975.

11/ For detailed analysis of the growth of the population of Colombo City, see, I. Kannangara, *Demographic Study of the City of Colombo*, Monograph No. 2 (Colombo, Department of Census and Statistics, 1954).

As noted earlier, in recent years the population of the city of Colombo grew more slowly than the population of the country as a whole. "However, the official municipal boundary gives a totally misleading picture of the trends in Colombo's metropolitan population over time, because there is an acute shortage of land for housing or industrial sites within the municipal area, and most of the growth during the last decade has taken place in the suburban towns immediately surrounding Colombo. That the function of this growth is largely one of providing commuter suburbs for Colombo is clearly indicated by the marked increase in traffic on some of the bus routes linking these areas to Colombo. Happily, there is a complete ring of such towns round Colombo, and by adding their populations to that of the Colombo Municipal Council at the different census dates, it is possible to obtain a useful approximation of the trends in metropolitan population."^{12/}

of the Colombo Metropolis. "The ideal estimate of the growth of the metropolitan population would perhaps require a moving boundary to incorporate localities into the metropolitan area at the time they reached suburban status in terms of criteria such as density, occupational structure and commuting patterns. Failing this, however, the use of a fixed boundary for the metropolitan area that appropriately defines the metropolitan areas as of the terminal point of the study, although it tends to exaggerate the metropolitan population at the beginning of the period and hence to *understate* its rate of growth, brings us a step closer to reality"^{15/}.

The estimate of the Colombo metropolitan population obtained on the basis of the two alternate assumptions regarding the metropolitan area are shown in table 55.

Table 55. Alternate estimates of trends Colombo metropolitan population, 1946-1971

	Estimated population				Average annual growth rate		
	1946	1953	1963	1971	1946-1953	1953-1963	1963-1971
Colombo City	362,074	426,127	511,644	562,420	2.35	1.81	1.14
Colombo DROs Division	525,586	656,152	846,401	1,002,779	3.22	2.52	2.05
Colombo DROs Division plus surrounding towns	614,837	783,213	1,036,141	1,234,338	3.52	2.78	2.21

Two alternative estimates of the metropolitan population were made by Jones and Selvaratnam. The first estimate is made on the assumption that the metropolitan area consists of the Colombo Divisional Revenue Officers (DROs) Division^{13/}. The second estimate includes in addition to the Colombo DROs Division, a few urban councils and town councils^{14/} that are in reality suburban areas

Though, as stated earlier, neither of the estimates relating to the Colombo metropolitan population are ideal, the second estimate is closer to reality as it includes all of Colombo's commuter suburbs as of 1963.^{16/} However, the rate of growth of the metropolitan population based on both estimates are almost similar and certainly are well above the rate for Colombo City.

Though according to these estimates, the Colombo metropolitan population has been increasing

^{12/} Gavin W. Jones and S. Selvaratnam, *loc.cit.*, p. 202.

^{13/} In 1946, it was called Colombo Mudaliyar's Division. The area in all years was 42 square miles and includes Colombo Municipality plus Kolonnawa U.C., the area that is now Kotikawatte T.C.; Kotte U.C.; Maharagama T.C.; Dehiwala-Mt. Lavinia M.C. and Kotte-Galkissa V.C.

^{14/} Includes in addition to Colombo DROs Division, Hendala T.C. Kandana T.C.; Wattala-Mabole U.C.; Peliyagoda U.C.; Battaramulla T.C. and Moratuwe U.C.

^{15/} Jones and Selvaratnam, *loc.cit.*, p. 205.

^{16/} Additional areas that might have been included are Ja-Ela U.C., and the areas adjoining Peliyagoda U.C., Battaramulla T.C., Dalugama T.C., Kelaniya T.C. and Mulleriyawa T.C. However, 1963 population of these urban centres are not available.

	Share of total urban population				Share of total Sri Lanka population (percentage)			
	1946	1953	1963	1971	1946	1953	1963	1971
Colombo City	35.4	34.4	25.4	19.7	5.4	5.3	4.8	4.4
Colombo DROs Division	51.4	53.0	42.0	35.2	7.9	8.1	8.0	7.9
Colombo DROs Division plus surrounding towns	60.1	63.2	51.4	43.4	9.2	9.7	9.8	9.7

faster than the total population of Sri Lanka as well as the remainder of the urban population, its share of the total and urban population of the country has increased slightly as will be seen from the above data.

It is true that the refined estimates help to correct the misleading impression that there has been a decline in Colombo's share of the country's population. However, they "certainly do not point to any marked 'metropolitanization' of Ceylon's population. Nor do they point to any substantial net migration inflow: the rate of natural increase has almost certainly been lower in the metropolitan area than in the rest of the country, but possibly not very much lower, because the lower birth rate in Colombo is probably offset to some extent by a lower death rate".^{17/}

D. FACTORS IN URBANIZATION

Historically, urbanization in Sri Lanka has largely been a function of trade and commerce. The port capital city, Colombo, eclipsed all the other port towns that thrived in commerce and trade. The development and expansion of the plantation industry explains the growth of several collecting and distribution towns. Roads and railway development which improved internal access led to the growth of several "junction-towns" of varying sizes and functional importance. Some historic towns in the Northern Plain experienced a phase of revival associated with the restoration of irrigation works and archaeological monuments. The centralization of "Kachcheri administration" in provincial and district capitals stimulated the growth of several towns with governmental functions. Un-

like in most developed countries, urbanization in Sri Lanka has not been associated with the process of industrialization.

As was pointed out earlier, in spite of the acceleration in the rate of population growth during the post-1946 period, the rate of urbanization in Sri Lanka has been slow. This phenomenon has been due to a number of factors. First, the rate of economic growth was very slow during the period. Though there was a substantial increase in the production and export of tea, there was a decline in the exports of rubber while exports of coconut products did not record significant increases. However, during this period, imports increased considerably resulting in the terms of trade being adverse to Sri Lanka. The continuing and increasing deficits in the balance of payments resulted in the imposition of severe import duties and finally in the quantitative restrictions of imports since 1961. Thus, as a result of the slow growth of trading activities in the late 1950s and 1960s "there was no great boost to the transport system, including port activities in Colombo, such as might have caused a rapid growth of urban-based employment".^{18/}

Secondly, as mentioned earlier, urbanization in Sri Lanka has largely been a function of the development of trade and commerce and not of industrialization. For a long time, the major manufacturing activity in the country was the one related to the processing of the leading agricultural export commodities, tea and rubber. This activity was widely dispersed in the plantation sector and therefore did not provide any impetus to urbanization.

^{17/} Jones and Selvaratnam, *loc.cit.*, p. 208.

^{18/} *Ibid.*, p. 209.

Though industrialization formed an integral part of the development effort during the 1950s, the main thrust in industrial development came from the State sector. The government's programme in this regard was, however, confined to several large scale industrial ventures such as a cement mill, a plywood factory, a caustic soda plant, a paper mill, an oil and provender plant and a ceramics factory. These enterprises were set up as separate industrial units in different parts of the country, close to sources of raw materials and away from urban centres. Government investment in industry continued in the 1960s at a higher level but with similar policies in regard to location. Thus industrial development of the post-independence era did not provide any substantial stimulation to urbanization in Sri Lanka.

Thirdly, the excess population in the high density rural areas of the wet zone was shifted to the sparsely populated dry zone regions through government-sponsored and government-aided colonization schemes. With the virtual eradication of malaria and the restoration of ancient irrigation works, there was a substantial amount of new land opened primarily for paddy cultivation. In fact, a major proportion of development expenditure during the 1946-1970 period was on the resettlement of the dry zone. As a result, the extent of agricultural land in the dry zone increased from 1,931,000 acres in 1946 to 2,355,000 acres in 1962. "The new rural sector in the Dry Zone thus became a counter to the established urban sector and drew the impoverished and the landless rural population away from the pull of the city where the sluggish expansion of economic activity offered few competing opportunities".^{19/}

Fourthly, as in many countries of Asia, migration to the cities has largely been motivated by the insecurity and instability of the rural peasants, particularly in regard to the structure of property relations and land tenure. Fortunately for Sri Lanka, examination of relevant data from the agricultural censuses of 1952 and 1962 indicate that population growth has not resulted in any significant fragmentation of holdings. Further, the peasant sector in Sri Lanka "did not experience the worst features of land-lordism prevalent in some other Asian countries. Some measure of land reform in the mid-fifties improved the position of the tenant-cultivator in paddy lands. There has also been no significant capitalist enterprise in this

segment of the rural agricultural sector in which peasant farming predominated. One did not have the process of pauperisation or eviction from land which would have exerted a push effect in any outward migration towards the cities."^{20/}

Fifthly, rural-urban migration is also a function of the level of rural prosperity. During the past three decades, the prosperity of the rural areas has been artificially sustained by income transfer programmes of one kind or another. The social welfare policies adopted and implemented by successive governments after independence included free medical services, free education from kindergarten to university, consumer subsidies and pricing policies which stabilized the cost of living, subsidies to the producer in the form of fertilizer and seed paddy as well as guaranteed prices for his products. Annually a sizeable proportion of the government budget was devoted to the establishment of a nation-wide network of medical and educational institutions. Today Sri Lanka has a better network of facilities such as education and health services and electricity supply throughout the country than most Asian countries. The equitable distribution of these facilities have strengthened the retentive capacity of the rural areas and helped to reduce the tendency for excess rural population to migrate to the towns.^{21/}

Sixthly, the small size of the country, the limited distances involved and the well established road and rail transport have made travel within the country convenient, speedy and cheap. Rural youths seeking employment in the urban areas could more conveniently do so by frequently travelling to towns from their homes than staying in the towns for the purpose. The convenience of easy travel has thus resulted in a kind of rural-urban mobility which does not result in permanent migration.

Finally, as was argued by Jones and Selvaratnam, "One might well query whether urban, as opposed to rural residence has much meaning in relation to the process of socio-economic development in Ceylon. Ceylon is a small country with a fairly well-developed urban hierarchy, and the great bulk of the rural population lives within

^{19/} Godfrey Gunatilleke, *loc. cit.*, p. 53.

^{20/} *Ibid.*, p. 62.

^{21/} It must also be stated that the rate of natural increase of population in rural Sri Lanka was rather less rapid than in many areas of Asia where rural-urban migration has been much greater.

30 miles of a town of 20,000 or more people and has relatively frequent contacts with it. Many rural areas are well-served with amenities such as electricity, schools and health facilities. Moreover, the settlements on the larger tea and rubber estates, while not considered to be urban, certain-

ly perform many urban functions for their inhabitants. In general, there is no question that the rural/urban dichotomy is less sharp in Ceylon than in many countries of Asia".^{22/}

^{22/} Gavin W. Jones and S. Selvaratnam, *loc.cit.*, p. 210.

CHAPTER V

AGE AND SEX COMPOSITION

A. SEX COMPOSITION

The importance of data relating to the sex composition of the population has long been recognized in Sri Lanka. Beginning with the first modern census of 1871, the collection and analysis of particulars relating to sex have been part of all successive censuses, except the one held in 1931. The accuracy of the sex data is also very high since the possibility of the enumerators confusing males and females is somewhat remote. There were no cases of "sex unknown" or "sex un-reported" in any of the censuses. The only defect in the data may arise from a possible under-enumeration of the females at the censuses.

1. General pattern

The population of Sri Lanka classified by sex together with the masculinity proportion (percentage of males in the total population) and masculinity ratio (number of males per 100 females) for the various census years is shown in table 56. It will be seen from the table that the males have outnumbered the females at all census counts, but the proportion of males in the total population has been declining almost continuously since 1871.

A high masculinity appears to have been characteristic of Sri Lanka's population even before 1871. The population data collected in 1814 also exhibited an excess of males over females. It was then observed that the preponderance of males "appears to be in large proportion; perhaps the census is not quite correct; perhaps this disproportion of the sexes is above the truth; yet from examining the particular returns and from considering the manner in which they were made out, I cannot help thinking that the Census is not much below the truth, and that the number of males is greater than that of the females".^{1/} In 1849, Pridham observed that "the disparity in the number of the sexes exhibited by the returns is a curious phenomenon and peculiar to Ceylon".^{2/}

^{1/} J. Davy, *An Account of the Interior of Ceylon and of its Inhabitants with Travel in that Island* (1821) (reprinted, Dehiwela, Tisara Prakasakayo, 1969), pp. 106-107.

^{2/} Charles Pridham, *An Historical, Political and Statistical Account of Ceylon and its Dependencies*, vol. I, 1849, p. 451; quoted in E.B. Denham, *Ceylon at the Census of 1911 Being the Review of the Results of the Census of 1911* (Colombo, Government Record Office, 1912), p. 311.

The excess of males over females is thus not an accident of any one of the censuses. It has for long been an important feature of Sri Lanka's demography, and has been due to the interaction of several factors such as male-favoured sex ratio at birth, higher female mortality, male predominated immigration and possible under-enumeration of females at the censuses.

2. Causes of sex disparity

a. Sex ratio at birth

An examination of the registered births in a wide variety of countries throughout the world has confirmed that the number of male births generally exceeds that of the female births every year.^{3/} Sri Lanka is no exception to this universally observed biological phenomenon. In all years, there have been more male than female births in the country as is evident from the data in annex III, table 1. The sex ratio at birth, i.e. the number of male births per 100 female births, has varied from a high of 114.6 in 1867 to a low of 102.7 in 1944. However, there has been a steady decline in this ratio over the years as is evident from table 57 which gives the average decennial sex ratios for the period 1871-1970. From an average of 109.3 during 1871-1880, the sex ratio at birth dropped to an average of 107.4 between 1891 and 1900, gradually falling to the current low level of about 104. "The reason for this declining birth-sex-ratio is, of course, not any change in the actual ratio as such, but the fuller registration of female births with the passage of the years following general social and educational progress during the last 75 years; the rather sharp drop after 1887 obviously followed the coming into force of the Ordinances in those years, which not only reduced the

^{3/} The 1901 census superintendent observed: "The sex of a child is believed by some to be determined by the social status and relative ages of its parents, by the quality and quantity of the food supplied to the mother during gestation; while others are of opinion that the sex is inherent in the germ itself. To whatever influences the evolution of sex may be due, it is well known that in most countries the male births exceed the female". See P. Arunachalam, *The Census of Ceylon 1901*, vol. I (Colombo, Government Record Office, 1902), p. 99. Also for a full discussion of the factors affecting sex ratio at birth, see Pravin M. Visaria, *Census of India 1961, The Sex-Ratio of the Population of India*, Monograph No. 10, (New Delhi, Office of Registrar-General, Ministry of Home Affairs, 1971).

Table 56. Population classified by sex, and masculinity proportion and masculinity ratio, Sri Lanka, 1871-1971

Census year	Enumerated population			Masculinity ^{a/} proportion	Masculinity ^{b/} ratio
	Total	Male	Female		
1871	2,400,380	1,280,129	1,120,251	53.3	114.3
1881	2,759,738	1,469,553	1,290,185	53.2	113.9
1891	3,007,789	1,593,376	1,414,413	53.0	112.7
1901	3,565,954	1,896,212	1,669,742	53.2	113.6
1911	4,106,350	2,175,030	1,931,320	53.0	112.6
1921	4,498,605	2,381,812	2,116,793	53.0	112.5
1946	6,657,339	3,532,218	3,125,121	53.1	113.0
1953	8,097,895	4,268,730	3,829,165	52.7	111.5
1963	10,582,064	5,498,674	5,083,390	52.0	108.2
1971	12,689,897	6,531,361	6,158,536	51.5	106.1

Sources: A.G. Ranasinha, *Census of Ceylon 1946, vol. I, part II, Statistical Digest* (Colombo, Department of Census and Statistics, 1950), table 7; H.E. Peries, *Census of Ceylon 1953, vol. I, part I, General Report* (Colombo, Department of Census and Statistics, 1957), appendix 3, table 16; Government of Sri Lanka, *Census of Population 1971, vol. II, All Island Tables, part I, General Characteristics of the Population* (Colombo, Department of Census and Statistics, 1975), table 3.

Notes: a/ Percentage of males in the total population.
b/ Number of males per 100 females.

Table 57. Average decennial sex ratios at birth^{a/} based on registration data, Sri Lanka, 1871-1970

Period	Sex ratio at birth ^{a/}
1871-1880	109.3
1881-1890	109.5
1891-1900	107.4
1901-1910	105.1
1911-1920	104.4
1921-1930	103.9
1931-1940	103.9
1941-1950	103.9
1951-1960	103.5
1961-1970	103.5

Source: Computed on the basis of data in table 1 of annex III.

Note: a/ Number of male births per 100 female births.

under-registration of female births relative to males (as is evidenced by the decline in the birth-sex-ratio) but also in absolute terms reduced the under-registration of male births themselves.”^{4/}

b. Sex-differential mortality

To a certain extent, the initial advantages of ex-

^{4/} R. Raja Indra, *Sinhalese Population Growth, 1911-1946*, Monograph No. 7, (Colombo, Department of Census and Statistics, 1955), p. 7.

cess male births tends to be reduced by higher infant mortality rates for males in all years. Annex III, table 2 shows that the number of deaths among male infants has consistently been higher than that of the females. The ratio of male infant deaths per 100 female infant deaths has ranged from 115 to about 125. Particularly in recent years, this proportion has shown a tendency to increase, suggesting that compared with males, a greater proportion of female infants survive to older ages. This is further confirmed by the data in table 58 which show that male infant deaths as a proportion of male births has been consistently higher than the corresponding proportion for females.

The higher mortality among male infants helped to reduce somewhat the imbalance in the sex proportions occurring at birth. However, until recent years, the higher female mortality at practically all subsequent ages greatly enhanced the balance in favour of males throughout life. For a long time, the general death rate for females was higher than that of males.^{5/} The difference between the two rates was more pronounced during the pre-1946 years, but with accelerated improvement in mortality conditions which occurred during the period since then there has been a narrowing down in these differences. In fact, since 1963, mortality rates for females have been lower than that of males for all ages except in the child-bearing age groups, 15-44 years, where

^{5/} See chapter VIII.

Table 58. Proportion of infant deaths to 1,000 births for each sex, 1920-1970

Year	Male	Female	Year	Male	Female	Year	Male	Female
1920	188.8	174.8	1937	166.9	149.1	1954	78.3	65.6
1921	196.4	187.5	1938	169.5	153.0	1955	77.8	64.9
1922	194.0	181.6	1939	171.9	159.5	1956	72.3	60.5
1923	217.8	205.9	1940	156.0	141.6	1957	73.1	61.8
1924	192.8	180.0	1941	136.2	122.4	1958	69.6	59.2
1925	181.3	162.1	1942	126.9	113.9	1959	62.3	52.6
1926	181.0	167.1	1943	138.6	125.1	1960	61.6	51.9
1927	168.1	152.4	1944	142.3	127.7	1961	55.9	48.1
1928	184.8	169.3	1945	145.9	133.2	1962	57.2	48.2
1929	195.4	177.6	1946	145.1	135.8	1963	60.8	50.7
1930	183.8	165.7	1947	106.5	95.3	1964	62.0	51.5
1931	165.9	149.5	1948	97.6	86.5	1965	57.6	48.7
1932	170.7	153.6	1949	93.1	80.7	1966	59.1	49.1
1933	165.6	148.4	1950	88.5	74.3	1967	52.5	42.9
1934	182.0	163.6	1951	89.0	74.7	1968	54.7	45.7
1935	266.1	260.2	1952	85.8	70.8	1969	56.8	48.6
1936	172.7	158.1	1953	77.0	65.1	1970	49.5	41.6

Source: Registrar-General's Reports on Vital Statistics.

female mortality rates are considerably higher than the corresponding male rates. "The high maternal death rate in Ceylon may be regarded also as a concomitant of the predominant male sex ratio which has been characteristic of its population for over a century at least."^{6/}

c. Sex-differential migration

The high masculinity ratio observed in Sri Lanka, particularly in the latter half of the last century and the early part of the current century has partly to be explained in terms of male-predominant migration that took place into the country during this period. For instance, it was observed in 1891 that "of the Indian-born persons, there were 171,342 males to 93,238 females, the males being in numbers nearly double the female immigrants."^{7/} The 1901 census superintendent observed, "The artificial cause of immigration is another, and in Ceylon the predominant, of the factors that disturb the relative strength of the sexes. There is little emigration from Ceylon, but immigration is in full force. In our immigrant population the males, as a rule, largely exceed in numbers the females. Of the 441,483 persons who returned from birthplaces outside Ceylon, and who

may be looked upon as the foreign element of the Island population, 270,978 were males and 170,505 females, i.e. 63 females to every 100 males, while in the Ceylon-born population there are 92 females to every 100 males."^{8/}

The ethnic groups that migrated into the country during the past two centuries were the Indian Tamils, Indian Moors, Europeans and "Others". The masculinity ratios for the "indigenous" and "immigrant" groups for the years 1911^{9/} to 1971 are shown in table 59. The masculinity ratio of the immigrant races have always been considerably higher than that of the indigenous population since adult males have naturally been largely in the majority in the immigrant population.^{10/} It will also be noted that there

^{8/} P. Arunachalam, *op.cit.*, p. 99.

^{9/} It was in 1911 that a distinction was first made in the censuses between Sri Lankan Tamils and Indian Tamils, and Sri Lankan Moors and Indian Moors.

^{10/} The 1911 census superintendent observed "As would naturally be expected, the excess of males is greater when the 'foreign' population is also taken into account, the explanation, of course, being that the immigrants do not bring their women with them", See E.B. Denham, *Ceylon at the Census of 1911 Being the Review of the Results of the Census of 1911* (Colombo, Government Record Office, 1912), p. 297. Also, the 1901 census superintendent observed, "In the Sinhalese population which is not affected by immigration, and in no sensible degree by emigration, the proportion of males has been throughout pretty constant". See P. Arunachalam, *op.cit.*, p. 103.

^{6/} A.G. Ranasinha, *Census of Ceylon 1946, vol. I, part I, General Report* (Colombo, Department of Census and Statistics, 1950), p. 144.

^{7/} Lionel Lee, *Census of Ceylon 1891, vol. I, General Report* (Colombo, 1892).

Table 59. Masculinity ratios ^{a/} by race group, 1911-1971

Race group	1911	1921	1946	1953	1963	1971
Indigenous races	108.5	109.0	109.9	109.0	107.1	105.9
Low-country Sinhalese	108.7	109.0	109.1	108.3	106.8	105.1
Kandyan Sinhalese	111.1	112.0	111.3	109.7	107.6	106.1
Sri Lankan Tamils	103.6	103.4	109.1	109.4	109.2	108.0
Sri Lankan Moors	109.2	108.7	112.7	112.0	104.9	106.4
Burghers and Eurasians	100.1	97.2	100.1	98.8	98.3	98.0
Malays	110.3	108.3	111.5	111.2	98.2	106.7
Veddahs	109.9	107.5	114.1	97.3	118.1	...
Immigrant races	141.1	135.5	136.3	129.4	116.6	107.7
Indian Tamils	131.3	124.4	122.8	120.0	110.8	106.9
Indian Moors	407.2	397.1	640.6	467.1	340.7	137.0
Europeans	157.6	133.1	125.7	110.5	137.9	125.7
Others	288.1	463.2	445.4	303.6		
All races	112.6	112.5	113.0	111.5	108.2	106.1

Source: Same as table 56.

Note: ^{a/} Number of males per 100 females.

has been a gradual reduction over the years in the masculinity ratio of the immigrant races due either to an increase in the number of female immigrants or to a decrease in the number of male immigrants. Sarkar has observed that while in the early phases the immigrants consisted largely of males, later, when transport developed and the rigours of the journey were eased, females also came into the country. In comparison with the other immigrant races, the Indian Tamils and the Europeans have had lower masculinity ratios. "The tendency of the Indian Tamils and European Immigrants to have their families with them has somewhat reduced the importance of the migration factor as a determinant of an excess male ratio." ^{11/}

d. Under-enumeration of females

Although there is no clear evidence, it is generally suspected that under-enumeration of females at the censuses is more than that of the males, and that this may also be in part responsible for the reported excess of males in the total population. However, the 1901 census superintendent was of the view that "those social peculiarities which, in parts of India, lead to the seclusion of females and make the households reluctant to give information about them, and owing to which a large proportion of females is supposed to escape the census enumerations there, do

not exist in Ceylon to any appreciable extent" ^{12/} A similar opinion was expressed by the 1911 census superintendent as well ^{13/}

The question of under-enumeration of females at the censuses was carefully investigated by the census superintendent in 1921 who observed "The first explanation of the high excess of males, which would occur to one, is that the census of females contains a considerable error or under-statement due to careless enumeration or to unwillingness of the indigenous races to have their women enumerated. But in order to bring down the Ceylon masculinity (529) to the figure in India (516 males per thousand of the population) there would have to be an under-statement of about 120,000 females at the Census of Ceylon, and it cannot be admitted that an error of this magnitude occurred even for both sexes. Further, on the assumption of understatement of females, one would expect the proportion of males among the Mohammedans to have been very high, say, higher than the Sinhalese, among whom the women are allowed more freedom. But this is not the case. It may

^{12/} P. Arunachalam, *op.cit.*, p. 99.

^{13/} E.B. Denham, *op.cit.*, p. 304, "No disinclination to give all particulars in regard to the female population was shown in any part of Ceylon. In fact in most places at the preliminary Census, the information was usually given by the women... There is no reason to believe that there were any more omissions of women at this census than there were of men"

^{11/} A.G. Ranasinha, *op.cit.*, p. 146.

also be noted that this masculinity of India is less than that of Ceylon, though there is every reason to believe that the females are enumerated in Ceylon at least as correctly as in India. It is, of course, true that in Ceylon male children are more valued than female, but it does not appear that the high masculinity in Ceylon is, to any significant extent, due to faulty enumeration of females."^{14/}

A verification of the enumeration was carried out in respect of only one census in Sri Lanka, that of 1953, and the results of this verification indicated that more males than females were under-enumerated at that census.^{15/}

It will thus seem evident that the excess of males over females in the population of Sri Lanka is due to a preponderance of males at birth, to a higher female death rate throughout life, particularly after the first year and to a male preponderant immigration in the past.

2. District patterns

The proportion of males to females has shown marked variations from district to district in all years as is evident from table 60. In 1871, the proportion ranged from a low of 99.2 for the Jaffna District to a high of 151.6 for the Nuwara Eliya District. Though the masculinity ratio for the country as a whole averaged about 114, there were eight districts which had over 120 males per 100 females. The three highest ratios were observed in respect of the three districts in Central Province, viz. Nuwara Eliya, Kandy and Matale. The Nuwara Eliya District recorded the highest proportion of males in the two subsequent censuses as well, while Kandy District maintained its second place in 1881. The masculinity ratio for Matale in 1881 and 1891 were still very much higher than the country's average in those years.

The abnormally high proportion of males observed in the three districts of Central Province in 1871, 1881 and 1891 has largely to be attributed to the influx of South Indian immigrant labourers. As noted earlier, the majority of immigrants were males and most of the migrant labour in the early years was

settled on the plantation estates of Central Province. Since 1891, however, the masculinity ratio of these three districts has recorded a steady decline. In 1971, while the masculinity ratio for the Matale District (106.3) was about the same as that for the country (106.1), the ratios for Nuwara Eliya (104.1) and Kandy (103.9) were lower.

Beginning from 1901, the steady decline in the number of foreign migrants into the country, changes in mortality conditions and internal migration flows have together brought about changes in the masculinity ratios for the various districts. The difference between the lowest and highest ratios has also been somewhat narrowing over the years. In 1971, the lowest masculinity ratio was 97.5 for Matara District while the highest was 124.2 for Vavuniya District. The Trincomalee District (119.1), Anuradhapura District (118.1) and Mannar District (116.4) ranked next in order to the Vavuniya District. The high masculinity ratios observed in these four districts have been largely due to internal and not international migration.

In all census years, the masculinity ratio for Kolutara District was very much lower than the ratios for the country and for Colombo, the other district in Western Province. An excess of females over males was recorded for the Jaffna District in all censuses except those held in 1953 and 1963. In 1891, as well as in all years from 1911 to 1971, more females than males were enumerated in the Galle District.^{17/} In Matara District, females outnumbered the males in 1946, 1963 and 1971. The low masculinity ratios in these four districts seems to be due to the emigration of males to other districts in search of employment. This is largely true of the Jaffna District, where over 92 per cent of the population are Sri Lankan Tamils. It is only among this ethnic group in the Jaffna District that females have consistently outnumbered the males. Since there is no evidence that female mortality has been lower than male mortality in this district, the excess of females has to be attributed to the emigration of males to other districts as well as to other coun-

^{14/} L.J.B. Turner, *Report of the Census of Ceylon 1921*, vol. I, part II, (Colombo, Government Printer, 1923), p.3.

^{15/} Government of Sri Lanka, *Post Enumeration Survey 1953*, Monograph No. 1 (Colombo, Department of Census and Statistics, 1953).

^{17/} E.B. Denham, *op.cit.*, p. 82 observed "Large numbers of able-bodied men and boys migrate from the Galle District in search of labour. This migration is also shown in the preponderance of females over males, as in many villages only old men, females and children are left behind, the adult males having migrated to the Central and Uva Provinces where they find employment as carpenters, carters, felling contractors on estates, and in plumbago mining districts".

Table 60. Sri Lanka, masculinity ratios^{a/} by province and district, 1871-1971

Province and district	1871	1881	1891	1901	1911	1921	1946	1953	1963	1971
Sri Lanka	114.3	113.9	112.7	113.6	112.6	112.5	113.0	111.5	108.2	106.1
Western Province	108.0	109.7	109.4	113.4	115.1	115.0	117.6	114.7	110.6	108.2
Colombo	110.0	111.8	111.2	115.1	117.6	117.7	121.7	117.9	113.0	110.1
Kalutara	102.6	103.6	104.0	108.8	108.1	107.6	105.7	105.0	102.7	101.5
Central Province	138.2	131.3	124.0	119.6	114.2	112.3	112.4	109.9	106.9	104.3
Kandy	136.6	128.7	120.5	117.9	113.0	111.7	112.7	108.7	106.8	103.9
Matale	133.5	126.9	117.6	118.8	117.3	116.1	114.7	115.4	108.0	106.3
Nuwara Eliya	151.6	143.5	138.7	124.4	115.5	111.0	110.2	109.8	106.4	104.1
Southern Province	105.6	103.9	103.1	103.8	101.6	101.0	100.9	100.5	99.2	99.2
Galle	104.2	101.9	99.2	101.3	99.2	97.7	97.6	96.6	97.0	97.7
Matara	105.6	104.2	105.4	104.3	102.2	100.6	99.8	101.7	98.5	97.5
Hambantota	110.0	109.3	108.7	109.6	106.9	111.4	114.4	109.2	106.1	105.8
Northern Province	101.3	100.4	100.9	101.4	99.4	99.8	103.9	105.2	105.2	103.4
Jaffna	99.2	98.0	97.1	98.4	95.6	95.6	99.8	100.4	101.1	99.5
Mannar	108.8	112.9	135.1	130.7	136.7	138.2	147.3	145.1	121.1	116.4
Vavuniya	129.2	128.7	126.7	124.8	130.1	137.3	136.4	136.4	133.4	124.2
Eastern Province	109.1	109.2	108.9	108.9	105.7	102.9	121.2	120.7	117.3	111.3
Batticaloa	107.9	107.6	106.0	106.4	103.7	99.5	101.4	114.3	113.4	107.3
Trincomalee	115.2	117.2	123.9	122.9	116.3	120.1	200.3	144.4	129.5	119.1
North-Western Province	116.2	116.8	120.1	123.9	124.1	127.5	116.4	115.1	107.9	105.5
Kurunegala	114.0	114.8	118.2	123.0	122.9	126.9	115.6	114.7	107.8	105.3
Puttalam	123.2	122.6	125.2	126.3	126.9	129.1	118.5	116.1	108.1	106.0
North-Central Province	116.3	116.4	121.6	120.7	123.1	132.1	144.0	135.4	124.1	118.1
Anuradhapura	116.3	116.4	121.6	120.7	123.1	132.1	144.0	135.4	124.1	118.1
Province of Uva	126.1	126.8	124.0	117.7	114.4	113.3	111.4	112.1	108.8	106.9
Badulla	126.1	126.8	124.0	117.7	114.4	113.3	111.4	112.1	108.8	106.9
Province of Sabaragamuwa	124.0	121.9	121.3	121.9	123.2	119.9	115.3	112.0	108.4	106.3
Ratnapura	128.3	127.8	123.3	124.0	129.0	123.2	118.1	114.8	110.6	108.9
Kegalla	120.4	117.1	119.9	120.5	119.4	117.4	112.9	109.4	106.3	103.8

Sources: Same as table 56.

Note: ^{a/} Number of males per 100 females.

Table 61. Masculinity ratio ^{a/} of Sri Lankan Tamils by district, 1911-1971

District	1911	1921	1946	1953	1963	1971
Colombo	128.5	136.8	148.7	141.3	139.8	135.3
Kalutara	159.1	207.2	158.1	138.8	148.5	135.8
Kandy	121.3	146.8	128.4	132.0	126.9	118.0
Nuwara Eliya	94.4	182.5	164.1	132.6	124.6	112.4
Matale	149.8	158.1	128.7	123.8	119.0	113.8
Galle	201.1	254.8	159.3	165.8	139.5	145.4
Matara	196.8	307.4	137.1	148.7	151.9	152.9
Hambantota	225.8	235.5	239.2	196.8	214.9	244.7
Jaffna	95.0	94.3	99.8	97.6	98.3	97.5
Mannar	136.7	133.7	126.6	119.5	113.9	113.3
Vavuniya	126.9	131.6	127.7	126.7	125.9	122.0
Batticaloa	104.0	99.6	98.9	105.4	106.5	105.3
Trincomalee	114.0	116.6	152.9	121.6	117.6	110.0
Kurunegala	157.4	184.1	146.1	146.5	141.0	142.7
Puttalam	127.1	124.8	120.2	119.4	112.0	108.0
Anuradhapura	172.8	187.7	150.8	154.2	147.9	144.9
Badulla	152.2	162.6	124.0	136.5	130.9	124.9
Ratnapura	146.4	202.0	174.0	144.8	132.4	132.5
Kegalla	134.9	185.2	173.3	148.2	152.7	123.4
Sri Lanka	103.6	103.4	109.1	109.4	109.2	108.0

Sources: Reports of the censuses of 1911, 1921, 1946 and 1953 unpublished data of 1963 census; *Census of Population 1971*.

Note: ^{a/} Number of males per 100 females.

tries.^{18/} That a substantially larger number of Sri Lankan Tamil males than females from the Jaffna District have been moving into other districts, is borne out by the abnormally high masculinity of the Sri Lankan Tamils living in the other districts (table 61).

largely to be explained by the higher proportion of males among the migrants into urban areas. The ratio for the urban areas rose to an all time high of 139.0 in 1946. This could largely be explained by the emigration of large numbers of women and children from urban areas during the period of the

3: Urban-rural sex ratios

The masculinity ratios in rural and urban areas for the various census years are given in table 62. Figure 7 shows the age-specific masculinity ratios for urban and rural areas in 1971. The masculinity ratios for rural areas have always been lower and those for urban areas appreciably higher than the ratios for the country as a whole. The higher masculinity ratios obtaining in the urban areas have

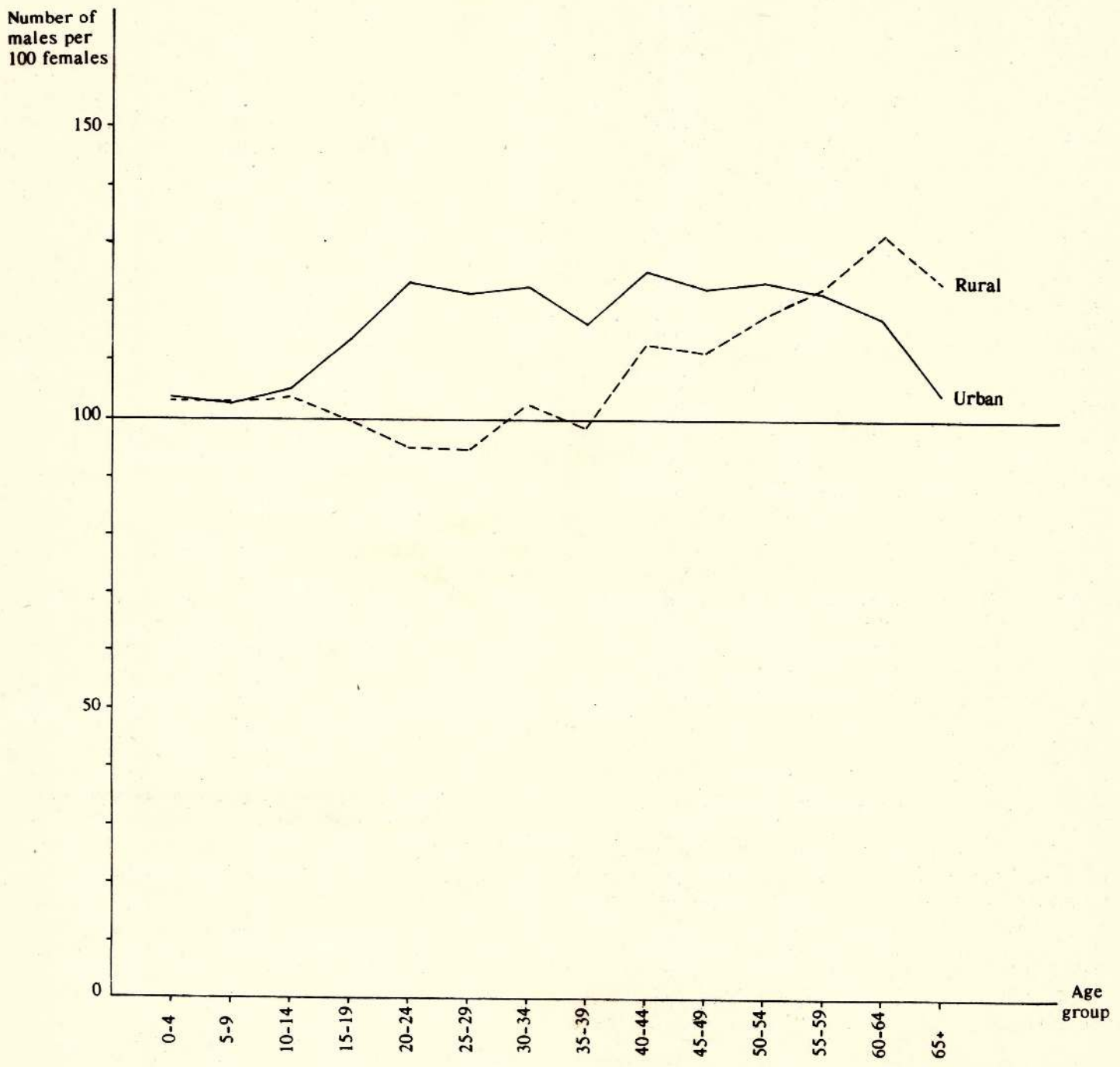
^{18/} See chapter I. Also the 1901 census superintendent observed "the population is so dense that a large number of males, especially of the age period 10-20, 20-30 and 40-50, has to seek a living outside the district. Of every 1,000 males born in the Jaffna District, no less than 80 are living in other parts of the Island. The extent of the emigration to the Straits Settlements and India, not to speak of other countries, is not accurately known". P. Arunachalam, *op.cit.*, p. 106.

Table 62. Masculinity ratios ^{a/} by rural-urban residence, Sri Lanka, 1881-1971

Census year	Masculinity ratios relating to		
	Total population	Rural population	Urban population
1881	113.9	113.0	122.0
1891	112.7	111.9	119.4
1901	113.6	112.4	123.1
1911	112.6	110.3	128.9
1921	112.5	109.8	130.3
1946	113.0	108.9	139.0
1953	111.5	108.3	131.0
1963	108.2	106.0	118.0
1971	106.1	104.0	113.3

Source: Same as table 61.

Note: ^{a/} Number of males per 100 females.



Source: Derived data from Government of Sri Lanka, *Census of Population 1971, vol. II, All Island Tables, part I, General Characteristics of the Population* (Colombo, Department of Census and Statistics, 1975), table 7.

Figure 7. Masculinity ratios by age group for Sri Lanka, urban and rural, 1971

Table 63. Age-specific masculinity ratios, a/ Sri Lanka, 1881-1971

Age group	1881	1891	1901	1911	1921	1946	1953	1963	1971
0- 4	106.0	106.7	106.0	105.3	104.3	103.2	101.5	102.6	103.2
5- 9	114.7	113.6	109.9	104.9	104.2	103.1	102.6	102.0	102.8
10-14	128.5	124.1	124.9	115.2	114.5	106.0	106.6	104.7	104.2
15-19	82.1	82.1	87.2	105.4	107.6	115.3	107.4	102.8	102.6
20-24	100.4	103.5	105.2	99.4	100.7	104.5	106.1	100.7	101.3
25-29	116.1	108.0	113.7	109.3	108.7	113.7	109.9	102.0	100.8
30-34	151.7	148.4	147.3	118.8	115.7	121.2	121.2	112.3	107.3
35-39	121.2	120.4	124.6	146.6	141.5	126.0	120.0	110.7	102.3
40-44	144.4	149.8	140.2	116.3	117.5	130.4	130.4	121.7	115.6
45-49	93.6	89.4	97.9	140.4	139.3	134.7	133.0	125.3	113.5
50-54	155.0	144.7	152.7	92.6	96.6	114.8	134.7	127.5	118.9
55-59	173.2	155.3	156.4	166.0	164.2	138.3	136.7	137.1	122.2
60-64	211.9	203.9	150.6	125.5	126.0	120.1	120.8	134.8	128.2
65 and over	138.6	142.1	150.6	138.1	135.6	119.1	115.7	121.2	118.8
All persons	113.9	112.7	113.6	112.6	112.5	113.0	111.5	108.2	106.1

Source: Computed from the age-sex data published in the various census reports.

Note: a/ Males to 100 females.

Second World War. This was particularly true of the two cities, Colombo and Trincomalee which were the centres of military, naval and air operations. In 1946, the masculinity ratio for the Colombo municipal area was 173.1 and as high as 550.0 for the Trincomalee urban council area. Since 1946, however, there has been a decline in the masculinity ratios for both rural and urban areas conforming to the over-all national pattern. But the decline in the urban areas has been faster than the rural areas, suggesting that proportionately more women than in the past have been moving into urban areas in recent years.

4. Age-specific sex ratios

The age-specific masculinity ratios, i.e. the number of males per 100 females in the various age groups, show certain peculiarities, as is evident from table 63 and figure 8. During the period, 1881 to 1901, the ratios for the 0-4 age group were about as they should have been, but the ratios for the 5-9 and 10-14 age groups were rather high. There is an excess of females over males in the 15-19 age group, while in the ages above 20 years males again outnumber the females, except in the 45-49 age group. These variations could partly be attributed to the fact that "in every period of life up to 15, the female death rate is higher than the male; in the period 15-20 the women for the first time show greater ability than men, probably because the males have

then begun to go out in search of a living and to be exposed to greater risks. In the next three age periods (20-25, 25-35 and 35-45) again the female death rate exceeds the male, no doubt owing to the risks of parturition and uterine disease".^{19/} The relatively high masculinity ratios for the ages 25 to 44, between 1881 and 1901 are also due to a predominance of males among the immigrant workers. The excess of females in the 45-49 age group appears to be rather peculiar. The unduly high proportion of males in the ages above 50 may be due to the survivors of the predominantly male migrants who came into the country prior to 1881.

Between 1901 and 1946, while the masculinity ratios for age groups 0 to 14, and 65 and over recorded a gradual decline, those for the ages 20-64 showed wide fluctuations. It was only for the age group 15-19 years that there was a gradual increase in the masculinity ratio during this period. An excess of females was observed in the 20-24 age group in 1911 and in the 50-54 age group in 1911 and 1921.

It is also noteworthy that in none of the age groups does the total population of the island show an excess of females over males in all census years from 1946 to 1971. However, the masculinity ratios for all age

^{19/} P. Arunachalam, *op.cit.*, p. 99

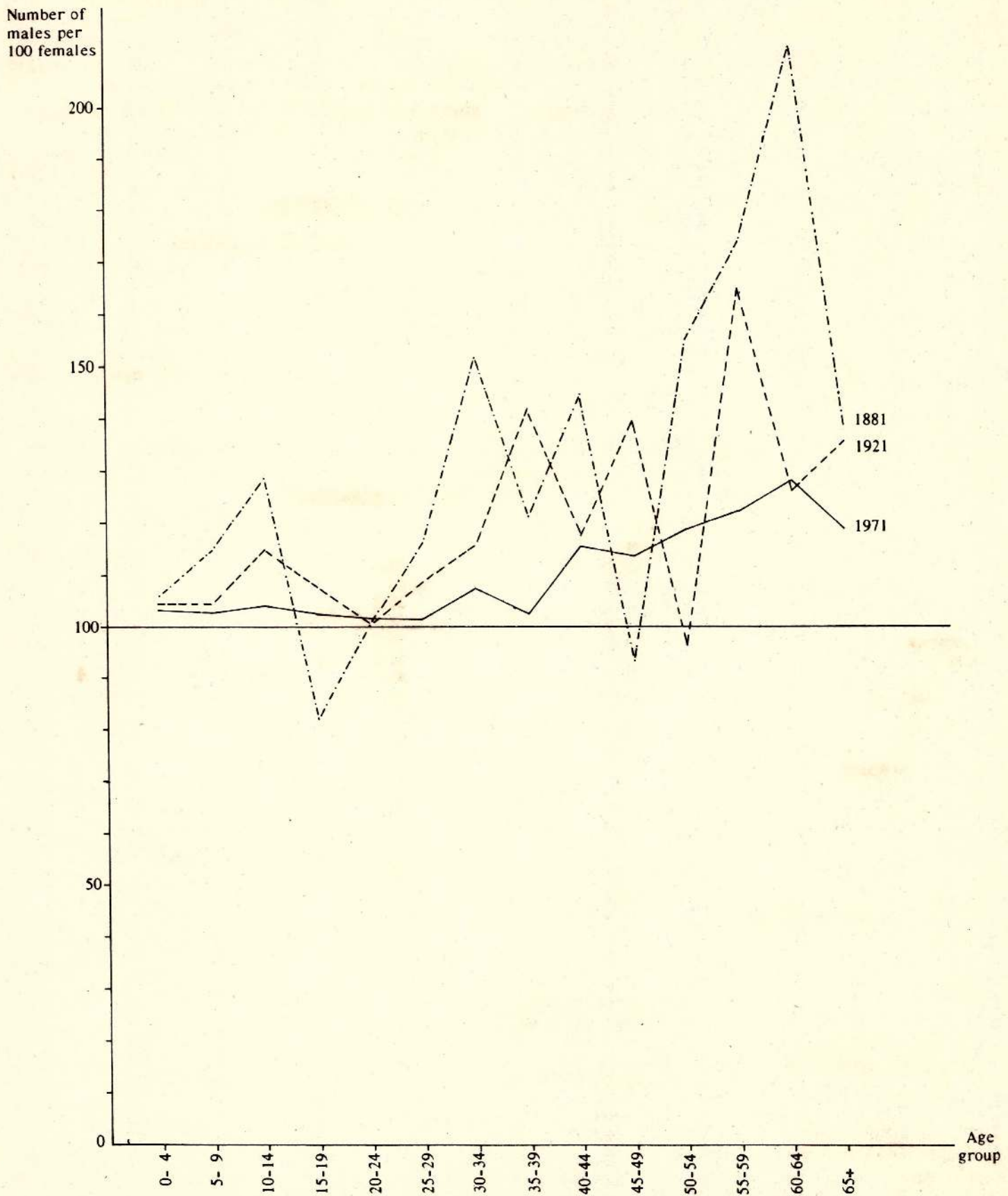


Figure 8. Masculinity ratios by age group for total population, Sri Lanka, 1881, 1921 and 1971

groups from 10 to 49 have shown almost continuous decline while those for the ages above 50 have recorded wide fluctuations. In 1971, the masculinity ratios for all age groups were very much lower than the corresponding ratios in 1881 except in the ages 15 to 24 years. The 1971 age-specific masculinity ratios were also lower than the 1946 ratios but for the 60-64 year age group reflecting the improved female mortality conditions.

5. International comparison

The sex ratios in Sri Lanka are compared with those obtaining in some selected countries in Asia and elsewhere in table 64. It is clear from this table that five of the Asian countries, viz. Bangladesh, Brunei, India, Iran and Pakistan have sex-ratios higher than that of Sri Lanka, but in all other coun-

tries, the proportion of males is lower than that of Sri Lanka. In a large number of countries of the world, including Indonesia, Japan, Philippines and Thailand in the Asian region, females outnumber males. In these countries, female mortality has for some time been lower than male mortality. In some of these countries, there has also been a loss of males due to wars.

B. AGE COMPOSITION

1. Data limitations

The age composition or age-structure of a population, that is the proportion of people in different age groups, is determined by the fertility, mortality and migration schedules of that population. It is in fact the living record of the nation's biolo-

Table 64. Masculinity proportions and masculinity ratios for selected ESCAP members and other countries, 1966-1974

	Year	Masculinity proportion ^{a/}	Masculinity ratio ^{b/}
Australia	1971	50.3	101.1
Bangladesh	1974	51.8	107.5
Brunei	1971	53.4	114.6
Hong Kong	1971	50.8	103.3
India	1971	51.8	107.5
Indonesia	1971	49.2	96.8
Iran	1966	51.8	107.3
Japan	1970	49.1	96.4
Malaysia	1970	50.4	101.5
Nepal	1971	50.3	101.4
Pakistan	1971	53.0	112.9
Philippines	1970	49.7	99.0
Republic of Korea	1970	50.2	100.8
Sri Lanka	1971	51.5	106.1
Thailand	1970	49.8	99.1
Brazil	1970	49.5	98.2
Canada	1971	50.1	100.2
Chile	1970	48.8	95.3
France	1968	48.7	95.1
Germany, Federal Republic of	1970	47.6	90.8
Ghana	1970	49.6	98.5
Israel	1973	50.2	101.0
Italy	1971	48.9	95.7
Kenya	1969	50.1	100.4
Turkey	1970	50.6	102.6
Uganda	1969	50.5	101.9
United Kingdom	1971	48.5	94.4
United States of America	1970	48.7	94.8
Zambia	1969	49.0	96.0

Sources: United Nations, *Demographic Yearbook, 1974* (Sales No.E/F.75.XIII.1, 1975) table 3, and ILO, *Yearbook of Labour Statistics, 1974* (Geneva, 1974), table 1.

Notes: a/ Males to 100 total population.

b/ Males to 100 females.

gical history. Because of the many and varied uses of age-data^{20/}, information regarding age has been one of the core topics canvassed in most of the censuses and sample surveys conducted in Sri Lanka. But the collection of accurate age-data is beset with many difficulties. As far back as 1901, the then census superintendent observed:

“Even in European countries, where the anniversary of one’s birthday is marked with some special festivities, the returns of age made by householders are in a very considerable proportion of cases more or less inaccurate. Persons there are in every country who wilfully exaggerate their ages, and there are also those who wilfully understate them. To the former category chiefly belong the old of both sexes, especially women, who consider great age a distinction, and to the latter, old maids and others who desire to be thought younger than they really are. Another cause of inaccuracy is the confusion made by most people between the year of age in which they are living and the number of years they have completed. But the cause that most affects the accuracy of the return is the general tendency, especially among the illiterate classes, to return an age as a multiple of ten or five. The ages returned, in fact, cluster like a swarm of bees round the quinquennia and decennia”^{21/}

According to the 1921 census superintendent, the likely sources of error in regard to age data are chiefly “ignorance (causing either over-statement or under-statement), carelessness of enumerators, deliberate over-statement of the age of children attending school, misunderstanding of the census requirements of age at last birthday, deliberate under-statement in case of males about to pay poll tax (18 years), under-statement in the case of younger adults of both sexes, over-statement of the ages of the old and other mix-statements for social, economic and other reasons. But there is no doubt that in Ceylon, ignorance is by far the most important factor, so much so that the rest hardly requires considera-

tion.”^{22/} The 1946 census superintendent added that “a further cause may be found in the Oriental tradition that age is one of the particulars that one should carefully conceal”.^{23/}

It has, however, been observed that the quality of Sri Lanka’s age data has been improving with successive censuses,^{24/} due, on the one hand, to the adoption of better methods for recording age particulars and, on the other, to an increase in the literacy level of the general population. In spite of the various limitations, the census data, nevertheless, provides a fairly clear picture of the age-structure of Sri Lanka’s population over a period of years.

2. Five-year distribution

The percentage distribution of the total, male and female population of Sri Lanka by five-year age groups for the various census years from 1881 to 1971 are given in tables 65, 66 and 67 respectively. Figure 9 shows the age pyramids of the population in 1881, 1901, 1946, 1953, 1963 and 1971.

In a normal population, that is one not disturbed by heavy migratory movements or violent changes in birth or death rates, the age distribution tends to be a smooth one, in the sense that the proportion of persons in each successive age group is less than in the previous one. In the light of these expectations, it will be interesting to examine the age distribution of Sri Lanka’s population as disclosed by successive censuses. The data for the years 1881 to 1953 show that there have been fluctuations in the age distribution, in that the proportion of people in certain age groups have been more than in the preceding groups. For instance, in 1881, 1891 and 1901, there have been alternating rise and fall in the proportions for the various age groups above 15 years. In 1911, a heaping at ages 20-24 and 25-29 years is observed while slight variations in the age distribution are also noticeable in 1921, 1946 and 1953. In 1963 and 1971, the age distribution appears to be normal.^{25/}

^{22/} L.J.B. Turner, *op.cit.*, p. 18.

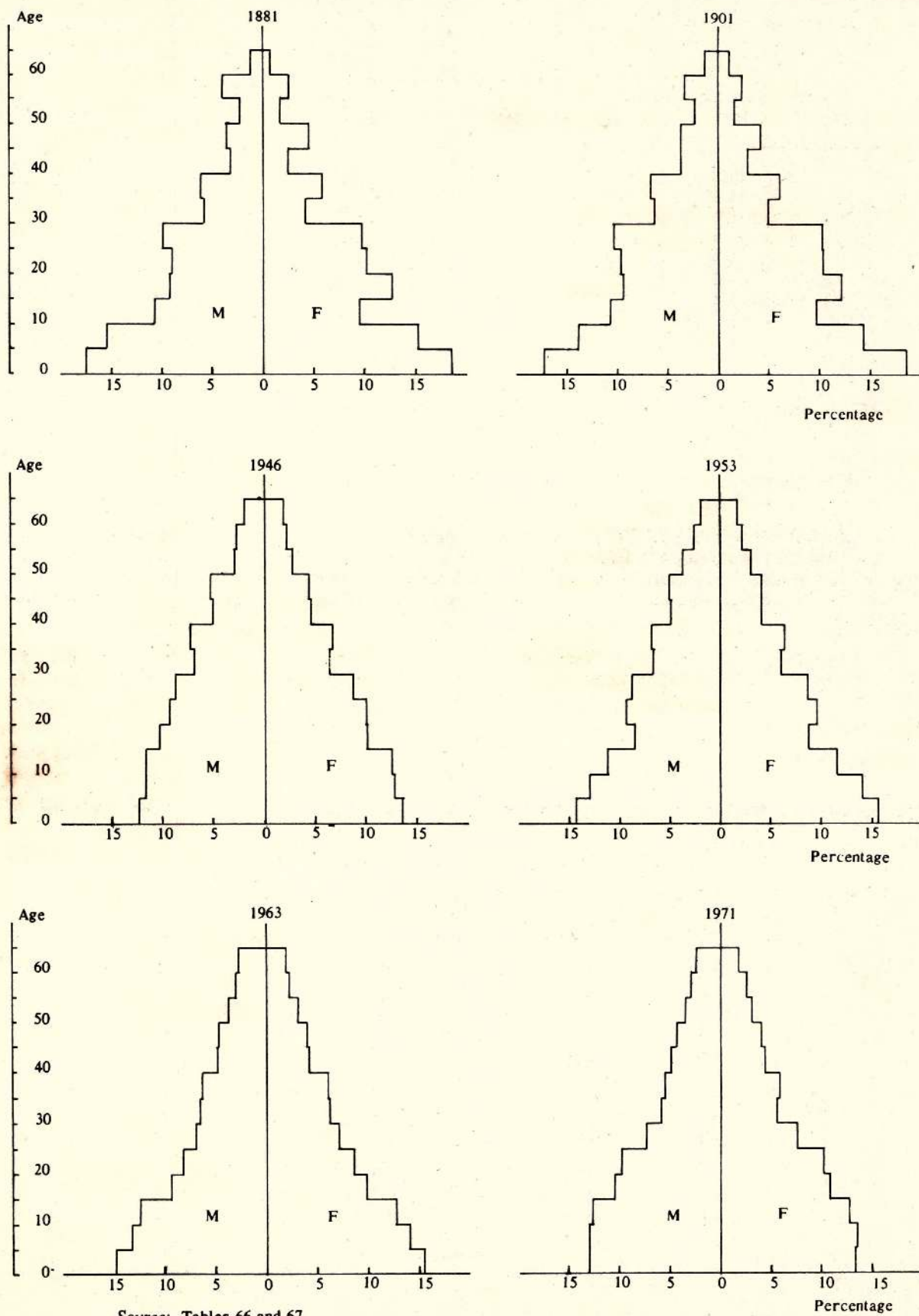
^{23/} A.G. Ranasinha, *op.cit.*, pp. 208-209.

^{24/} S. Selvaratnam, *Population Projections of Ceylon, 1956-1981* (Colombo, Planning Secretariat, 1959).

^{25/} The literacy levels of the population covered during the earlier censuses were significantly lower than those at the later censuses and hence age-reporting would have been subject to a higher margin of error in the past. Some allowance should therefore be made for this factor when comparing the age stratification in different censuses.

^{20/} For detailed discussion on the usefulness of age statistics, see Henry S. Shryock, Jacob S. Siegel and associates, *The Methods and Materials of Demography* (Washington, D.C., Bureau of Census, U.S. Department of Commerce, October 1971), vol. I, chap. 8.

^{21/} P. Arunachalam, *op.cit.*, p. 169.



Source: Tables 66 and 67.

Figure 9. Age pyramids of the population, 1881, 1901 and 1946 to 1971

Table 65. Percentage distribution of the total population by five-year age group, Sri Lanka, census years 1881 to 1971

Age group	Percentage distribution in census years								
	1881	1891	1901	1911	1921	1946	1953	1963	1971
0 - 4	18.0	17.8	17.9	14.8	14.3	12.9	14.9	15.2	13.1
5 - 9	15.5	15.5	14.1	13.7	12.8	12.2	13.4	13.7	13.2
10 - 14	10.1	10.2	10.2	12.4	12.3	12.1	11.4	12.6	12.7
15 - 19	10.8	10.4	10.8	8.4	9.2	10.2	8.7	9.7	10.7
20 - 24	9.5	9.3	10.0	9.5	9.8	9.6	9.5	8.4	10.0
25 - 29	9.8	9.9	10.3	9.7	9.4	8.7	8.8	7.0	7.5
30 - 34	5.1	5.4	5.7	7.4	7.2	6.8	6.4	6.3	5.8
35 - 39	6.0	6.3	6.4	6.2	6.6	7.0	6.6	6.2	5.7
40 - 44	2.8	3.1	3.3	4.7	4.8	4.8	4.6	4.6	4.6
45 - 49	4.0	3.9	3.9	3.6	3.9	4.8	4.6	4.3	4.3
50 - 54	2.0	1.9	1.9	3.3	3.2	3.0	3.4	3.4	3.3
55 - 59	3.3	3.2	2.8	2.0	2.1	2.5	2.3	2.6	2.8
60 - 64	0.9	1.0	1.3	2.0	2.0	2.0	1.9	2.4	2.1
65 and over	2.2	2.1	1.4	2.3	2.4	3.5	3.5	3.6	4.2
All ages	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Sources: A.G. Ranasinha, *Census of Ceylon 1946, vol. I, part II, Statistical Digest* (Colombo, Department of Census and Statistics, 1950); H.E. Peries, *Census of Ceylon 1953, vol. I, General Report* (Colombo, Department of Census and Statistics, 1957); unpublished data of *1963 Census of Population* (Colombo, Department of Census and Statistics); Government of Sri Lanka, *Census of Population 1971, vol. II, All Island Tables, part I, General Characteristics of the Population* (Colombo, Department of Census and Statistics, 1975).

Table 66. Percentage distribution of the male population by five-year age group, Sri Lanka, census years 1881 to 1971

Age group	Percentage distribution in census years								
	1881	1891	1901	1911	1921	1946	1953	1963	1971
0 - 4	17.4	17.8	17.3	14.3	13.8	12.4	14.3	14.8	13.0
5 - 9	15.5	15.5	13.9	13.3	12.3	11.7	12.9	13.3	13.0
10 - 14	10.7	10.2	10.6	12.5	12.4	11.7	11.1	12.4	12.6
15 - 19	9.1	10.4	9.5	8.2	9.0	10.3	8.5	9.4	10.5
20 - 24	9.0	9.3	9.6	8.9	9.3	9.3	9.2	8.1	9.8
25 - 29	9.9	9.9	10.3	9.5	9.2	8.7	8.7	6.8	7.3
30 - 34	5.8	5.4	6.4	7.6	7.3	7.0	6.7	6.5	5.8
35 - 39	6.1	6.3	6.7	6.9	7.3	7.4	6.8	6.3	5.6
40 - 44	3.1	3.1	3.6	4.8	4.9	5.2	4.9	4.8	4.8
45 - 49	3.7	3.9	3.6	3.9	4.3	5.2	5.0	4.6	4.4
50 - 54	2.3	1.9	2.2	3.0	3.0	3.0	3.7	3.6	3.5
55 - 59	3.9	3.2	3.2	2.5	2.5	2.7	2.6	2.9	2.9
60 - 64	1.1	1.0	1.4	2.1	2.1	2.0	1.9	2.6	2.3
65 and over	2.4	2.1	1.7	2.5	2.6	3.4	3.7	3.9	4.5
All ages	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Same as table 65.

Table 67. Percentage distribution of the female population by five-year age group, Sri Lanka, census years 1881 to 1971

Age group	Percentage distribution in census years								
	1881	1891	1901	1911	1921	1946	1953	1963	1971
0 - 4	18.7	18.3	18.6	15.3	14.9	13.6	15.7	15.7	13.3
5 - 9	15.4	15.4	14.4	14.3	13.3	12.8	14.0	14.1	13.4
10 - 14	9.5	9.7	9.7	12.2	12.2	12.5	11.6	12.8	12.8
15 - 19	12.7	12.2	12.3	8.7	9.4	10.1	8.8	9.9	10.9
20 - 24	10.2	9.7	10.4	10.1	10.4	10.0	9.7	8.7	10.2
25 - 29	9.7	10.2	10.3	9.8	9.5	8.7	8.8	7.2	7.7
30 - 34	4.3	4.6	4.9	7.2	7.1	6.5	6.2	6.2	5.7
35 - 39	5.8	6.1	6.1	5.3	5.8	6.6	6.4	6.1	5.8
40 - 44	2.5	2.6	2.9	4.7	4.7	4.5	4.2	4.3	4.4
45 - 49	4.5	4.4	4.1	3.2	3.5	4.4	4.2	4.0	4.1
50 - 54	1.7	1.7	1.6	3.6	3.5	2.9	3.1	3.1	3.1
55 - 59	2.5	2.6	2.3	1.6	1.7	2.2	2.1	2.3	2.6
60 - 64	0.6	0.7	1.1	1.9	1.8	1.9	1.8	2.1	1.9
65 and over	1.9	1.8	1.3	2.1	2.2	3.3	3.4	3.5	4.0
All ages	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Same as table 65.

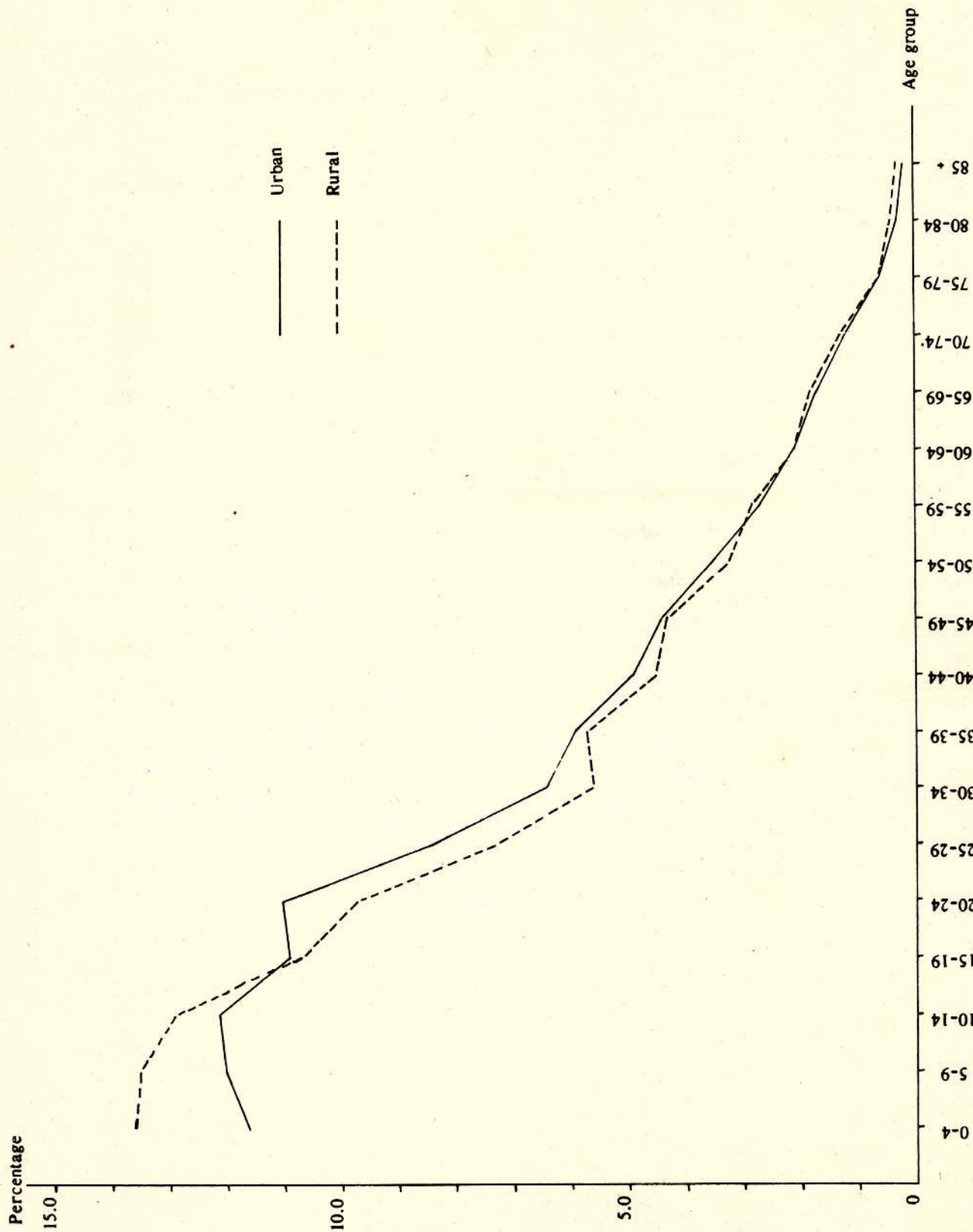
The fluctuations in the age distribution noted above are, in the main, due to the effects of historical events that have influenced the vital rates over the years. These events are largely reflected in the varying intercensal rates of growth experienced by different age groups as shown in table 68. Trends in birth rates have an immediate influence on the numbers in the younger age groups while changes in mortality normally tend to affect all ages in the same direction. The effect of international migration was largely felt in the working age groups since past migration flows into the country were largely motivated by employment opportunities in the newly opened-up plantation sector. These developments are also confirmed by the following analysis of the percentage increases recorded by the two broad age groups, 0-14 and 15-64 years.

Period	Percentage increase in age groups	
	0-14	15-64
1881 - 1901	25.4	34.4
1901 - 1946	64.6	96.7
1946 - 1963	77.1	38.6
1963 - 1971	12.6	25.5

As noted in chapter I, between 1881 and 1901, both birth rates and death rates were high and the growth of the country's population was largely occasioned by

international migration. Hence the higher percentage increase of the population of working ages, viz. 15 to 64 years. During the period, 1901 to 1946, birth rates remained almost unchanged at usually high levels but death rates recorded a gradual decline. This had the effect of boosting the growth in the number of children and also enhancing the life expectation of the adults, particularly those in the working age. International migration also played a part in the growth of the population, though on a somewhat reduced scale. These factors combined to produce a relatively larger increase in the population of working ages during this period. The period 1946 to 1963 was characterized by drastic declines in death rates and constant but high birth rates. International migration virtually ceased to make any contribution to the growth of the country's population. These developments resulted in an appreciable increase in the child population, viz., those aged 0 to 14 years. Between 1963 and 1971 however, declining birth rates and almost static, but low, death rates had the effect of reducing the proportion of the population in the younger age groups. At the same time, the working-age population started growing faster due to increasing longevity of the adult population as well as the entry into working ages of the survivors of the large number of babies born after the Second World War.

To a certain extent, the fluctuations in the age distribution, referred to earlier, are also attributa-



Source: Government of Sri Lanka, *Census of Population 1971, vol. II, All Island Tables, part I, General Characteristics of the Population* (Colombo, Department of Census and Statistics, 1975), table 7.

Figure 10. Percentage distribution of the population by five-year age group for urban and rural, 1971

Table 68. Intercensal percentage increase in population by age group, Sri Lanka, 1881 to 1971

Age group	Intercensal percentage increase							
	1881 to 1891	1891 to 1901	1901 to 1911	1911 to 1921	1921 to 1946	1946 to 1953	1953 to 1963	1963 to 1971
0 - 4	5.97	19.24	-4.82	5.84	33.87	40.33	33.32	3.29
5 - 9	8.96	8.46	11.99	18.37	41.14	33.84	33.28	15.45
10 - 14	9.78	18.68	39.70	9.03	45.67	14.22	44.62	20.91
15 - 19	5.10	23.26	10.14	19.30	64.49	3.41	45.11	33.15
20 - 24	6.62	27.35	9.11	13.53	45.29	19.62	15.43	43.44
25 - 29	10.61	22.42	8.49	5.99	37.29	22.74	5.00	28.21
30 - 34	15.87	24.56	49.86	6.63	38.56	15.76	28.25	9.26
35 - 39	15.26	19.62	11.86	16.91	57.55	14.37	22.02	11.00
40 - 44	19.49	25.28	66.75	11.52	48.58	15.46	26.70	24.37
45 - 49	5.29	17.93	5.74	20.61	80.90	15.88	19.85	22.75
50 - 54	6.26	19.23	94.99	7.13	35.37	41.82	24.39	20.82
55 - 59	7.22	3.69	-17.23	14.58	72.00	15.61	42.14	30.36
60 - 64	18.63	55.64	79.99	7.56	48.10	17.63	57.43	10.96
65 and over	-2.58	-16.52	85.20	14.31	112.73	23.67	33.66	41.97
All ages	8.99	18.56	15.15	9.55	47.99	21.64	30.68	19.92

Source: Computed from data published in the reports cited in table 65.

ble to misreporting of ages at the census. For instance, the peak at ages 15 to 19 years and the trough at ages 20 to 24 years during the period 1881 to 1901 may have been caused by deliberate under-statement of ages by those, particularly unmarried women, who were actually aged 20 to 24 years. This argument is to a large extent supported by similar distortions in the age-specific masculinity ratios in these years as shown in table 63.

The percentage distribution of the total population by five-year age groups in the urban and rural areas is given in figure 10. It will be seen that while in the rural areas children below 15 years form a higher proportion of the population, in the urban areas persons in the working age constitute a higher proportion.

3. Distribution by broad age groups

The percentage distribution of the total population by four broad age groups is summarized in table 69.

In 1881, children below 15 years formed nearly 44 per cent of the total population. This proportion has been gradually declining to about 37 per cent in

Table 69 Percentage distribution of the total population by broad age group, 1881-1971

Census year	Percentage distribution in age groups				
	0-14	15-42	25-64	65 & over	All ages
1881	43.7	20.3	33.8	2.2	100.0
1891	43.5	19.7	34.7	2.1	100.0
1901	42.2	20.8	35.6	1.4	100.0
1911	40.9	17.9	38.9	2.3	100.0
1921	39.4	19.0	39.2	2.4	100.0
1946	37.2	19.8	39.5	3.5	100.0
1953	39.7	18.2	38.6	3.5	100.0
1963	41.5	18.1	36.8	3.6	100.0
1971	39.0	20.7	36.1	4.2	100.0

Source: Same as table 65.

1946, and thereafter increased to 41.5 per cent in 1963. Since 1963, the proportion of children in the total population recorded a gradual decline to 39.0 in 1971 due largely to a fall in the birth rates during the 1960s. The percentage share of the 15-24 year

age group has shown marked fluctuations between 1881 and 1971. The proportion which stood at 18.1 in 1963 had increased to 20.7 in 1971 due to the effects of the high birth rates of the late 1940s and early 1950s. Those aged 65 years and over have shown an appreciable increase in their proportionate share from 1.4 per cent in 1901 to 4.2 per cent of the total population in 1971. This increase has largely to be attributed to the increase in life expectancy during this period.

4. Median age

As a result of the variations in the proportions among various age groups, there have also been changes over the years in the median age of the population as is evident from table 70.

Table 70. Median age of the population, Sri Lanka, 1881-1971

Census year	Median age of the population		
	Both sexes	Male	Female
1881	18.0	18.5	17.6
1891	18.2	18.7	17.7
1901	18.6	19.3	18.0
1911	20.3	21.0	19.7
1921	20.7	21.3	20.1
1946	21.3	22.1	20.5
1953	20.8	21.7	19.9
1963	19.4	20.0	18.4
1971	19.7	20.0	19.3

The median age of the total population in 1881 was 18.0. This increased gradually to 21.3 in 1946 and thereafter declined to 19.4 in 1963. In 1971, the median age of the total population was 19.7 years. What this means is that exactly half the population of Sri Lanka was below 19.7 years of age in 1971. The median age for males has always been higher than that for females due to higher male expectation of life, but in recent years, the gap has been narrowing due to increases in female life expectancy.

5. Age structure and dependency

The age structure of Sri Lanka's population is typical of the patterns obtaining in many developing countries experiencing high birth rates and declining death rates. In these countries, children under 15 years of age constitute about 40 per cent or more of the total population while the range of this ratio in low birth-rate developed countries is about 20 to 30 per cent. Consequently, the proportion of persons in

the working ages, viz. 15 to 64 years, in most developing countries is around 55 per cent as compared with about 60 to 70 per cent in developed countries (table 71). Since children (0 to 14 years) and youth (15 to 24 years) together form nearly 60 per cent of the total population, the population of Sri Lanka may be termed as a "young" or "youthful" population.

A very significant aspect of the youthful age structure of Sri Lanka's population is the resultant high dependency ratio. It is conventional to regard children below 15 years of age and older persons aged 65 years and over as belonging to the "un-productive" or "dependant" age groups, while those between 15 and 64 years are considered as belonging to the "productive" or "supporter" age groups. On the basis of these conventional classifications, the dependency ratios (children under 15 plus those aged 65 and over as a proportion of those aged 15 to 64 years) for various census years in Sri Lanka are as follows:

Census year	Dependency ratio
1881	84.6
1891	83.4
1901	77.5
1911	76.1
1921	71.8
1946	68.6
1953	76.1
1963	84.2
1971	76.1

In Sri Lanka, where the young and old age groups are disproportionately large, the burden of supporting these two unproductive ends of the age scale falls on the relatively small proportion in the working ages. Today, roughly about 100 persons in the productive ages have to support 77 dependants in terms of food, clothing, health, education and the like. This is in contrast to the situation in the developed countries where there are only about 45 to 65 dependants per 100 persons in the productive group.

It must, however, be noted that the true dependency load (ratio of non-workers to workers in the population) in Sri Lanka is very much higher than is indicated by the conventional dependency ratios, because not all persons in the working age are actually at work. In the first place, since the participation of women in economic activity is comparatively low in Sri Lanka, a sizeable proportion of women in the working ages have to be counted as dependants. For instance, according to the 1971 census data, only about 32 per cent of the women in the age group 15-64 years were economically active while the cor-

Table 71 Percentage distribution of population by broad age group and dependency ratio in selected countries and territories

	Census year	Percentage population in age group			Dependency ratio <u>a/</u>
		0-14	15-64	65 and over	
Asia					
Hong Kong	1971	35.8	59.7	4.5	67.4
India	1971	41.8	54.9	3.3	82.3
Iraq	1965	47.9	46.8	5.3	113.8
Japan	1970	23.9	69.0	7.1	44.9
Malaysia	1970	44.8	52.1	3.1	91.9
Philippines	1970	45.6	51.4	2.9	94.3
Republic of Korea	1971	42.1	55.5	2.4	80.3
Sri Lanka	1971	39.0	56.8	4.2	76.1
Thailand	1970	45.1	51.9	3.0	92.9
Europe					
Finland	1970	24.2	66.4	9.4	50.6
France	1968	23.8	62.8	13.4	59.1
German Democratic Republic	1971	23.3	61.1	15.6	63.5
Greece	1971	24.9	64.0	11.1	56.3
Sweden	1970	20.8	65.5 ^{b/}	13.7 ^{c/}	52.8
Union of Soviet Socialist Republic	1970	30.9	57.3 ^{b/}	11.8 ^{c/}	74.5
United Kingdom	1971	23.9	63.0	13.1	58.8
Oceania					
Australia	1971	28.8	62.9	8.3	59.0
New Zealand	1971	31.8	59.7	8.5	67.5
America					
Brazil	1970	41.7	53.2	5.1	88.0
Canada	1971	29.6	62.3 ^{b/}	8.1 ^{c/}	60.4
Chile	1970	39.0	56.3 ^{b/}	4.7 ^{c/}	77.7
Cuba	1970	37.0	57.1	5.9	75.1
Mexico	1970	46.2	50.1	3.7	99.7
United States of America	1970	28.5	61.6	9.9	62.2
Africa					
Algeria	1966	47.1	48.5	4.4	106.4
Ghana	1970	46.9	49.5	3.6	102.3
Kenya	1969	48.4	48.0	3.6	108.1
Morocco	1971	46.2	49.1	4.7	103.4
Zambia	1969	45.8	52.0	2.2	92.3

Source: Computed from the data published in the United Nations, *Demographic Yearbook, 1972* (Sales No. E/F.73. XIII.1).

Notes: a/ Ratio of persons in the age groups 0-14 and 65 and over to the population in the age group 15-64 years.
b/ Proportions in respect of the numbers in age groups 15 to 60 years.
c/ Proportions in respect of the numbers in age groups 60 years and over.

responding ratio for men was 84 per cent.^{26/} Secondly, the 1971 census showed that nearly 12 per cent of the men aged 15 to 64 years were unemployed.^{27/} These unemployed persons should not be included in the category of workers as they cannot provide any support to the young and old dependants. On the other hand, these unemployed themselves have to depend on those who are working for economic support and should therefore be regarded as dependants.

Further, according to the 1971 census, about 21 per cent of those in the 15 to 24-year age group were found to be full-time students.^{28/} Since these full-time students are not employed and since they depend on the employed members of their families for support, they should strictly be classified as dependants. Thus in Sri Lanka, where the population is loaded with large numbers of children, women, old persons

^{26/} Government of Sri Lanka, *Census of Population 1971, vol. II, All Island Tables, part I, General Characteristics of the Population* (Colombo, Department of Census and Statistics, 1975), table 16.

^{27/} *Ibid.*

^{28/} *Ibid.*

and unemployed, the true burden of dependency is heavier. This is further confirmed by the results of the 1971 census which shows that there were about 248 dependants per 100 employed persons in the country.^{29/}

Another significant feature of the youthful age-structure of Sri Lanka's population lies in its enormous built-in potential for further rapid increase in the future. A high proportion of young people in the total population means that each year the number of young people who become parents is greater than the number of parents who move out of their reproductive years. In other words, potential parents are much more numerous than the present reproducing cohorts. Further, the most important feature of the increase in the young population is that the first additions to the ranks of potential mothers will precisely be to those age groups which are normally the most fertile. Thus given the present patterns of family formation and levels of fertility, the population of Sri Lanka is bound to increase rapidly in the future.

^{29/} *Ibid.*

CHAPTER VI

ETHNICITY AND RELIGION

Sri Lanka is a multi-racial, multi-religious and multi-linguistic country. The important racial or ethnic groups in the country are the Sinhalese, Tamils, Moors, Burghers and Eurasians, Malays and Veddahs. The people of Sri Lanka profess four major religions, namely Buddhism, Hinduism, Christianity and Islam, and speak three languages, Sinhalese, Tamil and English. Hence, the various censuses that have been carried out in the country have collected information in regard to the ethnicity and religion of the people.^{1/}

A. ETHNIC COMPOSITION

Although, as stated earlier, particulars were obtained at the various censuses on the subject of "race", the terms used to denote the several differentiated groups have not been uniform. At the 1824 census, the population of the country was classified by caste and not according to race. The Sinhalese and Tamils were not reported as such, but as members of their respective castes. The term "nationality" was used in the earlier censuses until 1901. From 1911, the term "race" was used in place of "nationality" and it had recognition in all official and unofficial records. "In spite of the former use of the word nationality, it cannot be regarded as an appropriate description of the various peoples in Ceylon. The races in Ceylon are clearly differentiated — inter-marriages between them have been rare; they have each their own particular religion to which the large majority belong and they speak different languages."^{2/}

It has, however, been observed that the term "race" has been used in Sri Lanka to "signify not a biological but a social grouping, and like all social groupings, allocation of individuals into water-tight compartments is impossible and there is a wide border region where one group cannot be distinguished from the other. Yet the social grouping represented by race is a real issue in contemporary Ceylon society and politics, and the space devoted

^{1/} The 1946 census superintendent observed: "The fact of 'race' is a phenomenon which no demographer or sociologist can refrain from investigating, for it is generally acknowledged that it has some bearing upon sex ratios, birth rates, death rates, illness rates and other vital statistics of a population." See A.G. Ranasinha, *Census of Ceylon 1946, vol. I, part I, General Report* (Colombo, Department of Census and Statistics, 1950), p. 150.

^{2/} E.B. Denham, *Ceylon at the Census of 1911 Being the Review of the Results of the Census of 1911* (Colombo, Government Record Office, 1921), p. 194.

to it in the Census and Registrar-General's Reports is a reflection of the importance attached to it."^{3/}

As stated in the Introductory chapter, the Sinhalese are believed to be the descendants of Vijaya, a north Indian exile prince who arrived in the country with his retinue of 700 followers in the fifth century B.C. They are usually classified into low-country Sinhalese and up-country Sinhalese, a differentiation based purely on the geographical location of the districts in which they live but with no ethnic significance.^{4/} The Tamils who are of Dravidian origin are settlers from South India. They are also divided into two groups, the Sri Lankan Tamils and the Indian Tamils. The Sri Lankan Tamils are the descendants of South Indian Tamils who came into the country as conquerors in the second century B.C. The Indian Tamils are those who immigrated during the course of the nineteenth and twentieth century, mostly to be employed on the plantations. The Moors^{5/} are also classified into two groups,

^{3/} N.K. Sarkar, *The Demography of Ceylon* (Colombo, Ceylon Government Press, 1957), p. 190.

^{4/} It was observed at the beginning of this century that the Kandyan and low-country Sinhalese "are as distinct from each other in their dress, habits, manners and customs and in their very ideas and manner of thinking as if they formed two different races rather than two sections of one nation". See, E. Goonetilleke, *The Orientalist* (Colombo), vol. IV, p. 93. However, the 1911 census superintendent was of the view that "the distinction between Kandyan and Low-country Sinhalese is every year lessened; in fact one of the most conspicuous features of the decade has been the amalgamation which is steadily taking place of Low-country and Kandyan Sinhalese. ---- The changes that are taking place are very similar to those which have made Englishmen and Scotchmen both British, each preserving certain national traits, prejudices and peculiarities, but recognizing a common unity, and associating on such terms as that it is difficult for a foreigner to recognize any difference in the type". See E.B. Denham, *op.cit.*, p. 213.

^{5/} E.B. Denham, *op.cit.*, p. 234, has observed: "The term 'Moor' is of course a misnomer, and its use is due to the Portuguese, who styled all Muhammadans whom they met with on their voyages to India 'Mouros' or 'Moors', as the only Muhammadans they had previously encountered were the inhabitants of Mauritania, to whom alone the name Moor strictly applied. The origin and dates of arrival of the various colonies of Moors who settled in Ceylon are matters of historical speculation. There is no doubt, however, that from the tenth to the fifteenth centuries the Arabs were undisputed masters of the trade and commerce of the East; they were in a position to land and to make settlements on any coast. They probably found earlier settlements on the coast of Ceylon. According to one tradition, Muhammadans driven from Arabia sought an asylum in Ceylon in the eighth century. These settlers no doubt inter-married with the native races, who embraced Muhammadanism, and their descendants are the Ceylon Moors of today".

Table 72. Numerical and percentage distribution of population by race, 1881-1971

Race	1881		1891		1901		1911		1921		1946		1953		1963		1971	
	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
All races	2,759,738	100.00	3,007,789	100.00	3,565,954	100.00	4,106,350	100.00	4,497,854 ^{a/}	100.00	6,657,339	100.00	8,097,895	100.00	10,582,064	100.00	12,689,897	100.00
Low-country Sinhalese ^{b/}	1,846,614	66.91	2,041,158	67.86	1,458,320	40.90	1,716,859	41.81	1,926,892	42.84	2,902,509	43.60	3,469,512	42.84	4,470,276	42.24	5,425,780	42.76
Kandyan Sinhalese					872,487	24.47	998,561	24.32	1,089,078	24.21	1,717,998	25.81	2,147,193	26.52	3,042,639	28.75	3,705,461	29.20
Sri Lankan Tamils ^{c/}	687,248	24.90	723,853	24.07	951,740	26.69	528,024	12.86	517,189	11.50	733,731	11.02	884,703	10.93	1,164,689	11.01	1,423,981	11.22
Indian Tamils							530,983	12.93	602,510	13.40	780,589	11.73	974,098	12.03	1,122,961	10.61	1,174,606	9.26
Sri Lankan Moors, ^{d/}	184,542	6.69	197,166	6.56	228,034	6.39	233,901	5.70	251,925	5.60	373,559	5.61	463,963	5.73	625,301	5.91	828,304	6.53
Indian Moors							32,724	0.80	32,923	0.73	35,624	0.54	47,462	0.59	56,913	0.54	27,420	0.22
Burghers and Eurasians	17,886	0.65	21,231	0.71	23,482	0.66	26,663	0.65	29,403	0.65	41,926	0.63	45,950	0.57	45,944	0.43	45,376	0.36
Malays	8,895	0.32	10,133	0.34	11,902	0.33	12,990	0.32	13,395	0.30	22,508	0.34	25,464	0.31	33,430	0.32	43,459	0.34
Veddahs	2,228	0.08	1,229	0.04	3,971	0.11	5,332	0.13	4,510	0.10	2,361	0.04	803	0.01	397	0.00		
Europeans	4,836	0.18	4,678	0.16	6,300	0.18	7,592	0.18	8,099	0.18	5,418	0.08	6,508	0.08	9,596	0.09	15,510	0.12
Others	7,489	0.27	8,341	0.28	9,718	0.27	12,721	0.31	21,930	0.49	41,116	0.62	32,239	0.40	9,918	0.09		

Sources: A.G. Ranasinha, *Census of Ceylon 1946, vol. I, part II, Statistical Digest* (Colombo, Department of Census and Statistics, 1950), table 28; H.E. Peries, *Census of Ceylon 1953, vol. I, General Report* (Colombo, Department of Census and Statistics, 1957), appendix 3, table 16; unpublished data for 1963 Census (Colombo, Department of Census and Statistics); Government of Sri Lanka, *Census of Population 1971, vol. II, All Island Tables, part I, General Characteristics of the Population* (Colombo, Department of Census and Statistics, 1975), table 9.

- Notes: ^{a/} Exclusive of miscellaneous population of 751.
^{b/} No distinction between Kandyan and low-country Sinhalese made in 1881 and 1891.
^{c/} No distinction between Sri Lankan Tamils and Indian Tamils made in 1881, 1891 and 1901.
^{d/} No distinction between Sri Lankan Moors and Indian Moors made in 1881, 1891 and 1901.

the Sri Lankan Moors and the Indian Moors.^{6/} The Sri Lankan Moors are the descendants of the Arabs who settled in the country during the eleventh century A.D., while the Indian Moors are those who immigrated along with the Indian Tamils. The Malays, whose origin is traced to Java, are supposed to have been brought in as soldiers by the Dutch in the seventeenth century. The Burghers and Eurasians are the descendants of the Portuguese and the Dutch who ruled the country from A.D. 1505 to 1706.

The numerical and percentage distribution of Sri Lanka's population by races for various census years is given in table 72. The Sinhalese, both low country and Kandyan, are the largest ethnic group in Sri Lanka, forming nearly 72 per cent of the total population in 1971. The proportionate share of the Sinhalese in the total population has been almost steadily increasing from about 67 per cent in 1881, except in 1901 and 1911 when this proportion dropped to 65 per cent and 66 per cent respectively. Though from 1911 to 1953 the Indian Tamils were numerically larger than the Sri Lankan Tamils, in 1963 and 1971 the Sri Lankan Tamils outnumbered the Indian Tamils. The decline in the proportionate share of the Indian Tamils in recent decades has been due, as noted in chapter I, to the emigration of these people to India consequent to the implementation of the Srimavo-Shastri Agreement. The Sri Lankan Moors have always been the fifth largest ethnic group in the country, while the other ethnic groups together formed about 1 per cent of the total population in 1971. The Malays have more or less remained constant in their proportionate share of the total population while the Veddahs have been mostly absorbed into other races. It may also be noted that while in 1911, the immigrant races together constituted about 14 per cent of the total population, in 1971 their combined proportionate share was less than 10 per cent.

The percentage increase of the various races between 1911^{7/} and 1946 and between 1946 and 1971 are shown in table 73. Between 1911 and 1946 the

6/ The Indian Moors were also referred to as the Coast Moors or "those Muhammadans who, having arrived from the Coromandel Coast or inner districts of South India as traders or labourers, continue steadily to maintain relations of amity and inter-marriage with their friends in South India". See Sir P. Ramanathan, "Moors of Ceylon", in *Journal of the Royal Asiatic Society (Ceylon Branch)*, vol. X, No. 36, quoted in E.B. Denham, *op.cit.*, p. 233.

7/ It was 1911 that a distinction was made in census tabulations between Sri Lankan Tamils and Indian Tamils and between Sri Lankan Moors and Indian Moors. See footnotes to table 72

Table 73. Percentage increase in population by race, 1911-1946 and 1946-1971

Race	Percentage increase in population	
	1911-1946	1946-1971
Low-country Sinhalese	69.06	86.93
Kandyan Sinhalese	72.05	115.68
Sri Lankan Tamils	38.96	94.07
Indian Tamils	47.01	50.48
Sri Lankan Moors	59.71	121.73
Indian Moors	8.86	-23.03
Burghers and Eurasians	57.24	8.23
Malays	73.27	93.08
Others	90.66	-68.28
All races	62.12	90.62

Source: Based on data in table 72.

greatest proportionate increase has been in respect of the miscellaneous category of "others".^{8/} Of the races indigenous to Sri Lanka, the highest percentage increase during this 35-year period was among the Malays, followed by the Kandyan Sinhalese, low-country Sinhalese and the Sri Lankan Moors. The Sri Lankan Tamils among the indigenous races and the Indian Moors among the immigrant races had the lowest rates of growth between 1911 and 1946. During the subsequent 25-year period, the Sri Lankan Moors had the highest rate of increase followed by the Kandyan Sinhalese. Among the indigenous races, the Burghers and Eurasians had the lowest rate of growth while there has been a decrease in the absolute number of Indian Moors and the miscellaneous group of "others" between 1946 and 1971.

An interesting demographic feature in Sri Lanka is the concentration of the different racial groups in specific parts of the country. The low-country Sinhalese mostly occupy the southern and southwestern parts of the country, while the Kandyan Sinhalese inhabit the central districts. The Sri Lankan Tamils live mostly in the northern and eastern parts and the Indian Tamils are concentrated largely in the plantation districts of the hilly regions. This is evident from the numerical and percentage distribution of the races by provinces and districts shown in table 74.

It will be seen that in 1971, nearly 79 per cent of the low-country Sinhalese lived in the two adjacent provinces, Western (50.8 per cent) and Southern

8/ For purposes of this analysis, "others" include Europeans, Veddahs and others.

Table 74. Numerical and percentage distribution of the races by province and district, 1971^{a/}

Province/district	Low country Sinhalese	Percentage	Kandyan Sinhalese	Percentage	Sri Lankan Tamils	Percentage	Indian Tamils	Percentage	Sri Lankan Moors	Percentage	Burghers and Eurasians	Percentage	Malays	Percentage	Others	Percentage
Sri Lanka	5,445,706	100.00	3,700,973	100.00	1,415,567	100.00	1,195,368	100.00	824,291	100.00	29,416	100.00	41,615	100.00	13,957	100.00
Western Province	2,768,198	50.83	89,109	2.41	175,090	12.37	99,635	8.34	196,614	23.85	7,600	25.84	27,121	65.17	9,305	66.67
Colombo	2,140,437	39.31	81,806	2.21	167,204	11.81	61,186	5.12	147,973	17.95	7,135	24.26	26,479	63.63	9,026	64.67
Kalutara	627,761	11.53	7,303	0.20	7,886	0.56	38,449	3.22	48,641	5.90	463	1.58	642	1.54	279	2.00
Central Province	208,625	3.83	950,368	25.68	83,203	5.88	573,491	47.98	124,345	15.09	6,682	22.72	4,492	10.79	1,452	10.40
Kandy	132,535	2.43	604,939	16.35	50,226	3.55	290,592	24.31	97,286	11.80	4,377	14.88	3,177	7.63	1,013	7.26
Matale	37,849	0.70	196,405	5.31	11,552	0.82	48,385	4.05	20,092	2.44	1,004	3.41	578	1.39	130	0.93
Nuwara Eliya	38,241	0.70	149,024	4.03	21,425	1.51	234,514	19.62	6,967	0.85	1,301	4.42	725	1.77	309	2.21
Southern Province	1,565,344	28.74	12,511	0.34	7,234	0.51	35,407	2.96	41,010	4.98	565	1.92	3,600	8.65	309	2.21
Galle	689,037	12.65	5,782	0.16	3,708	0.26	15,830	1.32	21,790	2.64	1,59	5.44	1,000	2.44	147	1.05
Hambantota	548,297	10.07	3,588	0.10	2,008	0.14	19,094	1.60	14,763	1.79	81	0.28	100	0.24	120	0.86
Matara	328,010	6.02	3,141	0.08	1,518	0.11	483	0.04	4,457	0.54	15	0.05	83	0.19	42	0.30
Northern Province	12,184	0.22	27,327	0.74	747,032	52.78	52,374	4.38	35,133	4.26	2,722	9.25	220	0.53	288	2.06
Jaffna	4,888	0.09	15,514	0.42	648,462	45.81	24,581	2.06	9,720	1.18	592	2.01	323	0.73	103	0.74
Mannar	2,344	0.04	1,224	0.03	39,751	2.81	13,602	1.14	19,032	2.31	1,846	6.28	48	0.11	18	0.12
Vavuniya	4,952	0.09	10,589	0.29	58,819	4.16	14,191	1.19	6,381	0.77	284	0.97	117	0.26	35	0.25
Eastern Province	65,460	1.20	83,998	2.27	302,404	21.36	17,433	1.46	245,821	29.82	2,375	8.75	4,190	9.47	767	5.48
Batticaloa	5,467	0.10	5,815	0.16	174,736	12.34	7,925	0.66	61,188	7.42	577	1.96	2,555	5.10	82	0.59
Ampanar	30,985	0.57	51,883	1.40	60,152	4.25	3,769	0.32	123,935	15.04	1,158	3.94	182	0.44	56	0.40
Trincomalee	29,008	0.53	26,300	0.71	67,516	4.77	5,739	0.48	60,698	7.36	840	2.86	526	1.26	97	0.69
North-Western Province	448,907	8.24	811,166	21.92	38,409	2.71	20,013	1.68	82,709	10.03	2,453	8.34	2,140	5.14	1,074	7.70
Kurunegala	177,298	3.26	713,477	20.90	13,620	0.96	13,808	1.16	45,527	5.52	1,771	6.02	683	1.54	544	3.90
Puttalam	271,609	4.99	37,689	1.02	24,789	1.75	6,205	0.52	37,182	4.51	682	2.32	340	0.77	530	3.80
North-Central Province	130,784	2.40	366,663	9.91	13,936	0.98	4,149	0.35	35,694	4.33	991	3.37	378	0.91	220	1.58
Anuradhapura	83,825	1.54	266,798	7.21	8,772	0.62	3,139	0.26	25,189	3.06	770	2.62	316	0.76	209	1.50
Polonnaruwa	46,959	0.86	99,865	2.70	5,164	0.36	1,010	0.08	10,505	1.27	221	0.75	62	0.15	11	0.08
Uva Province	85,606	1.57	448,268	12.11	24,663	1.74	217,991	18.24	25,277	3.07	2,472	8.40	964	2.18	654	4.69
Badulla	49,945	0.92	311,892	8.43	21,401	1.51	206,271	17.26	21,350	2.59	2,386	8.11	910	2.06	431	3.09
Monaragala	35,661	0.65	136,376	3.68	3,282	0.23	11,720	0.98	5,927	0.48	86	0.29	54	0.12	223	1.60
Sabaragamuwa Province	160,598	2.95	911,563	24.63	23,576	1.67	174,875	14.63	37,688	4.57	3,356	11.41	992	2.38	420	3.01
Ratnapura	111,604	2.05	414,592	11.20	11,115	0.79	112,441	9.41	8,614	1.05	2,097	7.13	435	0.98	273	1.96
Kegalla	48,994	0.90	496,971	13.43	12,461	0.88	62,434	5.22	29,074	3.53	1,259	4.28	301	0.68	147	1.05

Source: Government of Sri Lanka, The 1971 Census - Preliminary Release No. 1 (Colombo, Department of Census and Statistics, 1972), table 3.

Note: a/ The data included in this table have been compiled from Enumerator's Abstracts (that is summaries prepared by the enumerators) and hence there are differences between the totals given in this table and table 72.

Table 75. Race composition of the population of provinces and districts, 1971 ^{a/}

(proportion in the total population of the province/district)

Province/district	All persons	Low country Sinhalese	Kandyan Sinhalese	Sri Lankan Tamils	Indian Tamils	Sri Lankan Moors	Indian Moors	Burghers and Eurasians	Malays	Others
Sri Lanka	100.00	42.84	29.12	11.14	9.40	6.48	0.23	0.35	0.33	0.11
Western Province	100.00	81.31	2.62	5.14	2.93	5.78	0.22	0.93	0.80	0.27
Colombo	100.00	80.08	3.06	6.26	2.29	5.54	0.27	1.17	0.99	0.34
Kalutara	100.00	85.78	1.00	1.08	5.25	6.65	0.06	0.05	0.09	0.04
Central Province	100.00	10.66	48.57	4.25	29.31	6.35	0.34	0.21	0.23	0.07
Kandy	100.00	11.16	50.96	4.23	24.48	8.19	0.37	0.25	0.27	0.09
Matale	100.00	11.96	62.09	3.65	15.30	6.35	0.32	0.11	0.18	0.04
Nuwara Eliya	100.00	8.44	32.88	4.73	51.74	1.54	0.29	0.16	0.16	0.06
Southern Province	100.00	93.92	0.75	0.43	2.12	2.46	0.03	0.04	0.22	0.02
Galle	100.00	93.44	0.78	0.50	2.15	2.95	0.06	0.06	0.03	0.02
Matara	100.00	93.21	0.61	0.34	3.25	2.51	0.01	0.03	0.02	0.02
Hambantota	100.00	96.19	0.92	0.45	0.14	1.31	0.00	0.02	0.95	0.00
Northern Province	100.00	1.39	3.11	85.11	5.96	4.00	0.31	0.06	0.03	0.03
Jaffna	100.00	0.69	2.20	92.07	3.49	1.38	0.08	0.05	0.02	0.02
Mannar	100.00	3.01	1.57	51.04	17.46	24.44	2.37	0.06	0.03	0.02
Vavuniya	100.00	5.18	11.08	61.57	14.85	6.68	0.30	0.12	0.04	0.18
Eastern Province	100.00	9.06	11.62	41.83	2.41	34.01	0.40	0.56	0.10	0.01
Batticaloa	100.00	2.12	2.25	67.70	3.07	23.71	0.22	0.87	0.03	0.03
Amparai	100.00	11.36	19.02	22.05	1.38	45.43	0.42	0.25	0.07	0.02
Trincomalee	100.00	15.11	13.70	35.17	2.99	31.62	0.44	0.66	0.27	0.04
North-Western Province	100.00	31.89	57.62	2.73	1.42	5.87	0.17	0.07	0.15	0.08
Kurunegala	100.00	17.26	75.23	1.32	1.34	4.43	0.17	0.07	0.13	0.05
Puttalam	100.00	71.52	9.92	6.53	1.63	9.79	0.18	0.09	0.20	0.14
North-Central Province	100.00	23.65	66.30	2.52	0.75	6.45	0.18	0.05	0.07	0.04
Anuradhapura	100.00	21.54	68.55	2.25	0.81	6.47	0.20	0.05	0.08	0.04
Polonnaruwa	100.00	28.66	60.95	3.15	0.62	6.41	0.13	0.04	0.04	0.00
Uva Province	100.00	10.60	55.49	3.06	26.99	3.12	0.31	0.12	0.24	0.07
Badulla	100.00	8.10	50.61	3.47	33.47	3.46	0.39	0.15	0.28	0.07
Monaragala	100.00	18.62	71.21	1.71	6.12	2.05	0.04	0.03	0.09	0.12
Sabaragamuva Province	100.00	12.22	69.38	1.79	13.31	2.87	0.26	0.06	0.08	0.03
Ratnapura	100.00	16.87	62.65	1.68	16.99	1.30	0.32	0.07	0.08	0.04
Kegalla	100.00	7.51	76.21	1.91	9.57	4.46	0.19	0.05	0.07	0.02

Source: Same as table 74.

Note: a/ Same as in table 74.

(28.7 per cent), while about 72 per cent of the Kandyan Sinhalese were concentrated in three adjoining provinces, viz., Central (25.7 per cent), Sabaragamuva (24.6 per cent) and North-Western (21.9 per cent). Nearly 74 per cent of the Sri Lankan Tamils inhabited Northern (52.8 per cent) and Eastern (21.4 per cent) provinces. The largest concentration of Indian Tamils (48 per cent) was in Central Province, while a further 33 per cent of them lived in the Uva (18.2 per cent) and Sabaragamuva (14.6 per cent) provinces. Nearly 30 per cent of the Sri Lankan Moors occupied Eastern Province while a further 24 per cent of them lived in Western Province. About 72 per cent of the Burghers and a little over 65 per cent of the Malays and "others" were concentrated in Western Province.

The proportionate share of the different races in the total population of each province and district in 1971 is given in table 75. The low-country Sinhalese constituted over 70 per cent of the population in six districts, viz., Puttalam (71.5 per cent), Colombo (80.1 per cent), Kalutara (85.8 per cent) Galle (93.4 per cent), Matara (93.2 per cent) and Hambantota (96.2 per cent). The Kandyan Sinhalese formed over 50 per cent of the population in nine districts, viz., Badulla (50.6 per cent), Kandy (51.0 per cent), Polonnaruwa (61.0 per cent) Matale (62.1 per cent), Ratnapura (62.7 per cent), Monaragala (71.2 per cent), Kurunegala (75.2 per cent) and Kegalla (76.2 per cent). The Sri Lankan Tamils formed 51 per cent of the population of Mannar District, 61 per cent in Vavuniya, 67 per cent in Batticaloa and 92 per cent in the Jaffna District. The Indian Tamils were in a majority only in one district, Nuwara Eliya (51.7 per cent) while the Sri Lankan Moors formed the largest single ethnic group (45.4 per cent) in the Amparai District.

The proportionate distribution of the races by urban, rural and estate sectors in 1971 is given in table 76. Nearly 75 per cent of the Malays and 80 per cent of the Burghers reside in urban areas where they are largely engaged in government and mercantile employment. The Sri Lankan Moors and the Indian Moors who are mostly traders are proportionately more "urbanized" than the other race groups. The least urbanized are the Kandyan Sinhalese, a large majority of whom still live in rural areas. Nearly 80 per cent of the Indian Tamils live in the estate sector.

B. RELIGIOUS COMPOSITION

Information regarding the religious affiliations of the people has been collected at all censuses held

Table 76. Percentage distribution of races by sector, 1971 ^{a/}

Race	Proportion in the total population			
	All Island	Urban	Rural	Estate
All races	100.0	22.4	68.5	9.1
Low-country Sinhalese	100.0	28.3	70.4	1.3
Kandyan Sinhalese	100.0	6.6	92.0	1.4
Sri Lankan Tamils	100.0	35.1	59.9	5.0
Indian Tamils	100.0	9.3	11.1	79.6
Sri Lankan Moors	100.0	44.0	55.3	0.7
Indian Moors	100.0	40.1	37.5	22.4
Burghers and Eurasians	100.0	80.1	17.2	2.7
Malays	100.0	75.1	22.2	2.7
Others	100.0	71.0	23.6	5.4

Source: Government of Sri Lanka, *The 1971 Census-Preliminary Release No. 1* (Colombo, Department of Census and Statistics, 1972), table 2.

Note: ^{a/} Same as in table 74.

in the country. "Superficially, it may appear that religion is not of very great importance as a basis of classification in demography, since it implies an attitude of man, not so much towards his fellow-men, as to some power outside and beyond them. Moreover, it may be urged that religion is a personal affair, and as such can be divorced from social relationships. But this seems fallacious, and the divorce, even if it were practicable, could scarcely be complete. For, an individual is the inheritor of the mores of his social group. These are themselves founded on the codes of conduct inherent in, or prescribed by, the religious beliefs of his group, for 'ethnography knows no race devoid of religion'. The individual's personal values and the pattern of his social behaviour, such as that, for instance, which is related to the exercise of his reproductive powers, cannot fail to be influenced in some degree at least by them." ^{9/}

The numerical and percentage distribution of the population by various religions from 1911 to 1971 are shown in table 77. Buddhism has been and continues to be the most widely professed faith in Sri Lanka. Numerically as well as in terms of percentage the adherents of this religion have been increasing over the years. In 1971 over 67 per cent of the people of Sri Lanka were Buddhists compared with 60 per cent in 1911. Hinduism is the religion which throughout had the second largest number of followers in the country, though the proportion of Hindus in the total population has registered an almost continuous

^{9/} A.G. Ranasinha, *op.cit.*, p. 172.

Table 77. Numerical and percentage distribution of the population by religion, 1911-1971

Religion	1911		1921		1946		1953		1963		1971	
	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
Buddhists	2,474,170	60.25	2,769,805	61.57	4,294,932	64.51	5,209,453	64.33	7,003,287	66.18	8,536,868	67.27
Hindus	938,260	22.85	982,073	21.83	1,320,352	19.83	1,610,561	19.89	1,958,394	18.51	2,238,666	17.64
Christians	409,168	9.96	443,400	9.86	603,235	9.06	724,461	8.95	884,949	8.36	1,004,326	7.91
Muslims a/	283,631	6.91	302,532	6.73	436,556	6.56	541,506	6.69	724,043	6.84	901,785	7.11
Others	1,121	0.03	795	0.02	2,264	0.03	11,937	0.15	11,391	0.11	8,252	0.07
All religions	4,106,350	100.00	4,498,605	100.00	6,657,339	100.00	8,097,918	100.00	10,582,064	100.00	12,689,897	100.00

Source: Reports of relevant censuses.

Note: a/ Prior to the 1946 census, the term "Muhammadanism" was used to refer to Islam.

decline from about 23 per cent in 1911 to 18 per cent in 1971. Numerically, the Christians^{10/} are the third largest religious group in Sri Lanka and like the Hindus, their proportion in the total population had a continuous decline from about 10 per cent in 1911 to about 8 per cent in 1971. The Muslims, or persons who profess Islam, form the fourth largest religious group and their proportion in the total population has remained more or less constant at about 7 per cent in all years.

The percentage increase of the various religious groups between 1911 and 1946 and between 1946 and 1971 is shown in table 78. It will be noted that

Table 78. Percentage increase in population by religion, 1911-1946 and 1946-1971

Religion	Percentage increase in population	
	1911-1946	1946-1971
Buddhists	73.59	98.77
Hindus	40.72	69.55
Christians	47.43	66.49
Muslims	53.92	106.57
Others	101.96	264.49
All religions	62.12	90.62

Source: Computed from data in table 77.

of the four major religious groups, the Buddhists recorded the highest percentage increase between 1911 and 1946 followed by the Muslims. Between 1946 and 1971, however, the highest percentage increase was recorded by Muslims while the percentage increase of Buddhists was second highest and Christians recorded the lowest percentage increase. It may be interesting to note that during the 30-year period, 1881-1911, the highest percentage increase (52.69 per cent) was recorded in respect of the Christians, and the second highest (58.65 per cent) was observed in regard to Hindus. During this period, Buddhists recorded the third highest percentage increase (45.70 per cent) while Muslims were a close fourth with an increase in their number by 43.41 per cent.^{11/}

10/ A distinction has been made in the censuses between Roman Catholics and other Christians. In the 1971 Census, the Roman Catholics (899,032) constituted 89.5 per cent of all Christians, while other Christians (105,294) formed the balance 10.5 per cent.

11/ E.B. Denham, *op.cit.*, p. 246. Denham, however, observed, "These increases are, however, considerably affected by immigration and other causes, and it is not possible to estimate exactly how far they represent a gain in converts to any particular religion".

As was noted in the Introductory chapter, the major religions in Sri Lanka, except Christianity, are very closely related to race. A cross-classification of the census data by race and religion indicates that in 1911 nearly 91 per cent of the Sinhalese were Buddhists while only 9 per cent were Christians. In the same year, among the Tamils, 87.6 per cent were Hindus and 12.4 per cent were Christians.^{12/} A similar analysis of the 1946 census data^{13/} shows that nearly 88 per cent of the low-country Sinhalese and 99 per cent of the Kandyan Sinhalese were Buddhists. The proportion of Hindus was higher among the Indian Tamils (89.3 per cent) than among the Sri Lankan Tamils (80.6 per cent). Thus the analysis shows that Buddhists are proportionately more among the Sinhalese than are Hindus among the Tamils. It will also be observed that a larger proportion of Tamils than Sinhalese are Christians, the proportions in 1911 being 12 per cent and 9 per cent respectively. In 1946, 11.9 per cent of the low-country Sinhalese and 16.5 per cent of the Sri Lankan Tamils were Christians. The analysis for 1946 also indicated that nearly 99 per cent of Sri Lankan Moors, 95 per cent of Indian Moors and 92 per cent of Malays were Muslims, and that 96 per cent of the Burghers were Christians. "Religion has thus become to be closely associated with race and both are integrated together into the cultural values of the people. In consequence, the rise of nationalism has also seen the rise of religious consciousness."^{14/}

The numerical as well as proportionate distribution of the various religious groups by provinces and districts in 1971 are shown in table 79. It will be observed that nearly 86 per cent of the Buddhists live in five provinces, viz., Western, Southern, Central, North-Western and Sabaragamuva, which as noted in the preceding section also contain the majority of the low-country and Kandyan Sinhalese. The Hindus, nearly all of whom are Tamils are concentrated mostly in four provinces, viz., Northern (29.97 per cent), Central (26.80 per cent), Eastern (12.85 per cent) and Uva (10.24 per cent). Nearly 51 per cent of the Christians are to be found in Western Province while a further 32 per cent live in the North-Western (18.76 per cent) and Northern (12.87 per cent) provinces. Nearly 78 per cent of the Muslims

12/ E.B. Denham, *op.cit.*, pp. 246-247.

13/ N.K. Sarkar, *op.cit.*, p. 203. Similar cross tabulations are not available for the 1953, 1963 and 1971 censuses.

14/ N.K. Sarkar, *op.cit.*, p. 203.

Table 79. Numerical and percentage distribution of the religious groups by province and district, 1971 ^{a/}

Province/district	Buddhists	Percentage	Hindus	Percentage	Christians	Percentage	Muslims	Percentage	Others	Percentage
Sri Lanka	8,567,570	100.00	2,239,310	100.00	986,687	100.00	909,941	100.00	7,635	100.00
Western Province	2,469,264	28.82	186,138	8.31	507,330	51.42	237,587	26.11	4,125	54.03
Colombo	1,855,318	21.66	145,560	6.50	479,838	48.63	187,987	20.66	3,917	51.30
Kalutara	613,946	7.17	40,578	1.81	27,492	2.79	49,600	5.45	208	2.72
Central Province	1,151,697	13.44	600,084	26.80	68,195	6.91	135,903	14.94	876	11.47
Kandy	733,012	8.56	308,717	13.79	40,375	4.09	104,469	11.48	597	7.82
Matale	231,495	2.70	54,420	2.43	8,465	0.86	21,825	2.40	137	1.79
Nuwara Eliya	187,190	2.18	236,947	10.58	19,355	1.96	9,609	1.06	142	1.86
Southern Province	1,575,546	18.39	36,167	1.62	9,494	0.96	45,149	4.96	354	4.64
Galle	692,302	8.08	16,549	0.74	5,917	0.60	22,555	2.48	128	1.68
Matara	551,970	6.44	18,237	0.81	2,935	0.30	14,960	1.64	152	1.99
Hambantota	331,274	3.87	1,381	0.06	642	0.07	7,634	0.84	74	0.97
Northern Province	34,973	0.41	671,132	29.97	126,950	12.87	44,429	4.88	284	3.72
Jaffna	18,210	0.21	585,418	26.14	85,031	8.62	15,520	1.71	171	2.24
Mannar	2,629	0.03	23,278	1.04	30,001	3.04	21,910	2.41	64	0.84
Vavuniya	14,134	0.16	62,436	2.79	11,918	1.21	6,999	0.77	49	0.64
Eastern Province	144,919	1.69	287,771	12.85	39,320	3.99	250,715	27.55	158	2.07
Batticaloa	9,624	0.11	167,597	7.48	18,316	1.86	62,519	6.87	48	0.63
Amparai	81,762	0.95	57,346	2.56	7,625	0.77	126,033	13.85	24	0.31
Trincomalee	53,533	0.62	62,828	2.81	13,379	1.36	62,163	6.83	86	1.13
North Western Province	1,097,755	12.81	35,723	1.60	185,087	18.76	88,429	9.72	900	11.79
Kurunegala	925,347	10.80	17,493	0.78	35,759	3.62	48,881	5.37	627	8.21
Puttalam	172,408	2.01	18,230	0.81	149,328	15.13	39,548	4.35	273	3.58
North Central Province	491,893	5.74	13,970	0.62	8,146	0.83	38,877	4.27	179	2.34
Anuradhapura	346,580	4.05	9,306	0.42	5,895	0.60	27,274	3.00	152	1.99
Polonnaruwa	145,313	1.70	4,664	0.21	2,251	0.23	11,603	1.28	27	0.35
Uva Province	534,069	6.23	299,284	10.24	15,677	1.59	28,483	3.13	307	4.02
Badulla	361,658	4.22	215,506	9.62	14,635	1.48	24,288	2.67	228	2.99
Monaragala	172,411	2.01	13,778	0.62	1,042	0.11	4,195	0.46	79	1.03
Sabaragamuwa Province	1,067,454	12.46	179,041	8.00	26,488	2.68	40,369	4.44	452	5.92
Ratnapura	526,295	6.14	111,648	4.99	13,253	1.34	10,218	1.12	296	3.88
Kegalla	541,159	6.32	67,393	3.01	13,235	1.34	30,151	3.31	156	2.04

Source: Same as table 74.

Note: ^{a/} Same as in table 74.

Table 80. Religious composition of the population by province and district, 1971, a/

Province/district	All persons	Percentage	Buddhists	Percentage	Hindus	Percentage	Christians	Percentage	Muslims	Percentage	Others	Percentage
Sri Lanka	12,711,143	100.00	8,567,570	67.40	2,239,310	17.62	986,687	7.76	909,941	7.16	7,635	0.06
Western Province	3,404,444	100.00	2,469,264	72.53	186,138	5.47	507,330	14.90	237,587	6.98	4,125	0.12
Colombo	2,672,620	100.00	1,855,318	69.42	145,560	5.45	479,838	17.95	187,987	7.03	3,917	0.15
Kalutara	731,824	100.00	613,946	83.89	40,578	5.54	27,492	3.76	49,600	6.78	208	0.03
Central Province	1,956,755	100.00	1,151,697	58.86	600,084	30.67	68,195	3.49	135,903	6.95	876	0.04
Kandy	1,187,170	100.00	733,012	61.74	308,717	26.00	40,375	3.40	104,469	8.80	597	0.05
Matale	316,342	100.00	231,495	73.18	54,420	17.20	8,465	2.68	21,825	6.90	137	0.04
Nuwara Eliya	453,243	100.00	187,190	41.30	236,947	52.28	19,355	4.27	9,609	2.12	142	0.03
Southern Province	1,666,710	100.00	1,575,546	94.53	36,167	2.17	9,494	0.57	45,149	2.71	354	0.02
Galle	737,451	100.00	692,302	93.88	16,549	2.24	5,917	0.80	22,555	3.06	128	0.02
Matara	588,254	100.00	551,970	93.83	18,237	3.10	2,935	0.50	14,960	2.54	152	0.03
Hambantota	341,005	100.00	331,274	97.15	1,381	0.40	642	0.19	7,634	2.24	74	0.02
Northern Province	877,768	100.00	34,973	3.98	671,132	76.46	126,950	14.46	44,429	5.06	284	0.03
Jaffna	704,350	100.00	18,210	2.59	585,418	83.11	85,031	12.07	15,520	2.20	171	0.02
Mannar	77,882	100.00	2,629	3.38	23,278	29.89	30,001	38.52	21,910	28.13	64	0.08
Vavuniya	95,536	100.00	14,134	14.79	62,436	65.35	11,918	12.47	6,999	7.33	49	0.05
Eastern Province	722,883	100.00	144,919	20.05	287,771	39.81	39,320	5.44	250,715	34.68	158	0.02
Batticaloa	258,104	100.00	9,624	3.73	167,597	64.93	18,316	7.10	62,519	24.22	48	0.02
Amparai	272,790	100.00	81,762	29.97	57,346	21.02	7,625	2.80	126,033	46.20	24	0.01
Trincomalee	191,989	100.00	53,533	27.88	62,828	32.72	13,379	6.97	62,163	32.38	86	0.04
North-Western Province	1,407,894	100.00	1,097,755	77.97	35,723	2.54	185,087	13.15	88,429	6.28	900	0.06
Kurunegala	1,028,107	100.00	925,347	90.00	17,493	1.70	35,759	3.48	48,881	4.75	627	0.06
Puttalam	379,787	100.00	172,408	45.40	18,230	4.80	149,328	39.32	39,548	10.41	273	0.07
North Central Province	553,065	100.00	491,893	88.94	13,970	2.53	8,146	1.47	38,877	7.03	179	0.03
Anuradhapura	389,207	100.00	346,580	89.05	9,365	2.39	5,895	1.51	27,274	7.01	152	0.04
Polonnaruwa	163,858	100.00	145,313	88.68	4,604	2.85	2,251	1.37	11,603	7.08	27	0.02
Uva Province	807,820	100.00	534,069	66.11	229,284	28.38	15,677	1.94	28,483	3.53	307	0.04
Badulla	616,315	100.00	361,658	58.68	215,506	34.97	14,635	2.37	24,288	3.94	228	0.04
Monaragala	191,505	100.00	172,411	90.03	13,778	7.19	1,042	0.54	4,195	2.19	79	0.04
Sabaragamuwa Province	1,313,804	100.00	1,067,454	81.25	179,041	13.63	26,488	2.02	40,369	3.07	452	0.03
Ratnapura	661,710	100.00	526,295	79.54	111,648	16.87	13,253	2.00	10,218	1.54	296	0.04
Kegalla	652,094	100.00	541,159	82.99	67,393	10.33	13,235	2.03	30,151	4.62	156	0.02

Source: Same as table 74.

Note: a/ Same as in table 74.

are distributed in four provinces, viz., Eastern (27.55 per cent), Western (26.11 per cent), Central (14.94 per cent) and North-Western (9.72 per cent).

The religious composition of the population by provinces and districts is shown in table 80. The geographical concentration of Buddhists and Hindus is very marked. In seven provinces and 14 districts, Buddhism was the religion followed by over 55 per cent of the population, while Hinduism was the religion of over 50 per cent of the population in one province and four districts. In none of the districts was Christianity or Islam followed by over 50 per cent of the population of those districts, though

Christians formed the single largest religious group in Mannar District (38.5 per cent) and the Muslims constituted the single largest group in the Amparai District (46.2 per cent). The districts in which adherents of two or more different religions are fairly evenly distributed are Nuwara Eliya with 52.3 per cent Hindus and 41.3 per cent Buddhists; Mannar with 38.5 per cent Christians, 29.9 per cent Hindus and 28.1 per cent Muslims; Amparai with 46.2 per cent Muslims, 30.0 per cent Buddhists and 21 per cent Hindus; Trincomalee with 32.7 per cent Hindus, 32.4 per cent Muslims and 27.9 per cent Buddhists; Puttalam with 45.4 per cent Buddhists and 39.3 per cent Christians; and Badulla with 58.7 per cent Buddhists and 35.0 per cent Hindus.

CHAPTER VII

MARITAL STATUS

A. INTRODUCTION

The term "marital status", or "conjugal condition" or "civil condition" means the state of being unmarried, married, widowed, separated or divorced. In Sri Lanka each status has religious and legal as well as social significance.

The importance of the statistics on the marital status of the population need hardly be emphasized. The proportion of married persons in a population has a direct and important bearing on the fertility rate and hence on the rate of growth of the population. The fluctuations of prices and other changes in the social and economic conditions influence greatly the marriage rates. The establishment of the family has important sociological significance. As was observed by Ranasinha:

"Marriage has been defined as the physical, legal, and moral union between a man and a woman in complete community of life for the establishment of a family. It is thus the social sanction to that kind of sex behaviour which makes possible the procreation of new lives and the perpetuation of the race. Most reproduction takes place within marriage, and the marriage rate has a direct bearing on the birth rate. Moreover, marriage gives stability to one of the profoundest impulses of man's organic nature — that of mating, procreation, and the care and nurture of the young. It also satisfies many of his secondary needs — emotional, cultural, and economic. Many men and women yearn for romantic love and seek in marriage its fulfilment. Many others seem to long for a home, which they would wish personally to create, and where they could find shelter from life's 'sea of troubles' in the close companionship of a loving and understanding mate. Some are influenced by a desire for economic security, or for personal possession, or even for the continuation of a name of which they are proud. A whole complex of motives may be present in a given case. Marriage, then is a social phenomenon of which the student of a particular society must necessarily take

account if he desires to have a good understanding of the object of his study."^{1/}

Information relating to marital status or conjugal condition was collected at the first comprehensive census held in 1871. However, on account of the prevalent uncertainty as to what constituted a marriage in Sri Lanka, the information collected was considered to be unreliable and therefore not tabulated. The census schedules of 1881 and 1891 did not include any questions on marital status. Subsequently, the judiciary ruled that registration was not essential to the validity of a marriage in Sri Lanka and that a marriage relationship could be presumed on adequate evidence of cohabitation and repute. Since 1901 "civil condition" was included in the census schedules as a subject of inquiry.

In order to eliminate any vagueness or misunderstanding, on the part of the respondent, a more direct and explicit question "are you unmarried, married, widowed or divorced?" was asked. Enumerators were carefully instructed to accept whatever statements were made to them by persons as to whether they were married or not. In other words, the entry "married" was to be made in the case of a person claiming to be married according to custom or repute, though the marriage may not have been registered according to the law. However, the census superintendents of 1911 and 1921 have observed that the enumerators had tended to enter the parties to unregistered marriages as "unmarried" and hence the data were subject to errors of under-statement.^{2/}

^{1/} A.G. Ranasinha, *Census of Ceylon 1946, vol. I, part I, General Report*, (Colombo, Department of Census and Statistics, 1950), pp. 192-193.

^{2/} "The results may be accepted as a close approximation to the actual facts, but it is probable that, at this census, the tendency on the part of the enumerators has been to enter persons living together whose marriage has not been registered as unmarried; while at the 1901 Census, being the first at which information on this subject was obtained, enumerators probably entered such persons as married", E.B. Denham, *Ceylon at the Census of 1911 Being the Review of the Results of the Census of 1911* (Colombo, Government Record Office, 1912), p. 323. Also, L.J.B. Turner, "As the Census enumerators tend to enter the parties to unregistered marriages as 'unmarried', the result is that the number of married persons in Ceylon is probably considerably understated" in *Report of the Census of Ceylon 1921* (Colombo, Government Press, 1922), vol. I, part. II, p. 31.

With a view to eliminating this source of error, the 1946 census made a distinction between registered marriages and customary marriages. The subsequent censuses have maintained this distinction.

B. MARRIAGE CUSTOMS AND LAWS

In Sri Lanka, as in most oriental countries, the marriage of the daughters is considered a sacred duty which should be performed as soon as possible. An unmarried or childless woman is regarded as an anomaly by the indigenous ethnic groups and is often debarred from taking part in social functions such as weddings. In the past, it was a fairly general custom that marriage should take place at an early age. "Old bachelors and old maids are rarely to be seen amongst the Singhalese; almost every man marries and marries young".^{3/} The numerous sayings among the various communities emphasize the importance of marriage and of having children.^{4/}

Child-marriages are unheard of in Sri Lanka; a girl must attain puberty before she could be considered for marriage. The importance which is from the start attached to the marriage of a girl is indicated by the elaborate ceremonies that are performed on her attaining puberty.^{5/} While in the past, these ceremonies were regarded by all as of utmost importance, today they are not rigidly followed in the urban areas while in the rural areas there is adherence to these formalities.

Monogamous marriages are by and large the rule among the various ethnic groups in the country. Polygamy and polyandry^{6/} appeared to have been prevalent in some areas of the Kandyan Districts

^{3/} J. Davy, *An Account of the Interior of Ceylon and of its Inhabitants with Travels in that Islands* (1821) (reprinted, Dehiwela, Tisara Prakasakayo, 1969), p. 213.

^{4/} Some of the numerous sayings on the subject among the people of Sri Lanka are: (a) She who marries will do well, whether her husband be old or poor; (b) She who has no husband is like sand in the bed of a river; (c) A shrine without fame and wealth without a child are useless.

^{5/} For details regarding these ceremonies, see E.B. Denham, *op.cit.*, pp. 325-327.

^{6/} It was noted that: "In the country each Man, even the greatest, hath but one wife; but a Woman often has two Husbands, for it is lawful and common with them for two Brothers to keep house together with one wife, and the Children to acknowledge and call both Fathers". See R. Knox, *An Historical Relation with Ceylon* (London, 1681) (reprinted Dehiwela, Tisara Prakasakayo, 1966).

from very early times. These practices which were not confined to any caste or class were legally abolished in 1859. Though the 1901 census superintendent reported that "Polyandry has ceased to exist",^{7/} the 1911 census superintendent argued that, "It is undoubtedly rare in Ceylon, and it may not be admitted to exist in many parts, but it undoubtedly does prevail, and only in so far as public opinion is influenced by being in touch with modern civilization is the practice considered objectionable".^{8/} The 1921 census superintendent said that "the custom is undoubtedly dying out". He also reported that "polygamy, however, has disappeared as a social institution in Ceylon, except among the Muhammadans, whose religion and law allows a man four wives at a time, though in practice the number is usually less. Both among the educated and the less wealthy Muhammadans, monogamy may be said to be very general".^{9/} Today these practices are virtually non-existent.

There are however, two kinds of marriages among the Kandyans: (a) *diga*, by which a girl becomes a member of the husband's family, thereby losing all claims upon her ancestral property, except for maintenance, if she becomes a destitute; and (b) *binna*, where the husband enters the wife's family and is dependent on her and her parents. He is liable to be turned out of the house at short notice and the wife may take another husband more agreeable to her or to the rest of the family.^{10/}

Registration of marriages in Sri Lanka is governed by three Ordinances: (a) Ordinance No. 6 of 1847 as revised by Ordinance No. 19 of 1907 relating to general marriages; (b) Ordinance No. 3 of 1870 as revised by the Kandyan Marriage and Divorce Act. No. 44 of 1952 relating to marriages among Kandyan Sinhalese; and (c) Muslim Marriages and Divorce Act No. 13 of 1951 relating to Muslim marriages. If the two contracting parties to the marriage are Muslims, then they have to marry under the Muslim Law, but the Kandyans are not precluded from marrying under the General Marriage Ordinance. According to these Ordinances,

^{7/} P. Arunachalam, *Report of the 1901 Census of Ceylon*, vol. I, (Colombo, Government Printer, 1902), p. 109.

^{8/} E.B. Denham, *op.cit.*, p. 329.

^{9/} L.J.B. Turner, *op.cit.*

^{10/} Hence the common Kandyan saying to the effect that a *binna* husband should not remove any property to his wife's house except a torch and a walking stick, as with these he may at any time depart and find his way back.

the boy as well as the girl should have attained majority, that is the age of 21, to contract a marriage on their own, i.e., without the consent of the parents. Even when parental consent is given, the law requires that the minimum age of marriage for a girl should be 12 years and for a boy 16 years.^{11/}

C. CHANGES IN MARITAL STATUS

1. Over-all trends

Table 81 gives a classification of the total popu-

married as well as of those who were widowed.

The proportion married has increased from 33.7 per cent in 1901 to 37.5 per cent in 1946, but since 1946 there has been a gradual decline in the proportion married which was estimated at 34.3 per cent in 1971. The proportion widowed which was around 7 per cent until 1921, has gradually declined to 3.4 per cent in 1971, reflecting the mortality declines in recent years.

It has, however, to be noted that the trends observed in the preceding paragraph give only a crude

Table 81. Population of all ages, classified by marital status, Sri Lanka, census years 1901-1971

Census year	Unmarried		Married		Widowed		Divorced/separated		All statuses	
	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
1901 ^{a/}	2,132,396	59.8	1,200,137	33.7	233,168	6.5	-	-	3,565,954 ^{b/}	100.0
1911 ^{c/}	2,459,844	59.9	1,378,242	33.6	268,249	6.5	-	-	4,106,350 ^{d/}	100.0
1921 ^{c/}	2,692,560	59.9	1,495,292	33.2	310,753	6.9	-	-	4,498,605	100.0
1946	3,783,464	56.8	2,498,532	37.5	363,235	5.5	12,108	0.2	6,657,339 ^{f/}	100.0
1953 ^{e/}	4,720,708	58.3	2,953,132	36.5	398,841	4.9	20,626	0.3	8,097,895 ^{f/}	100.0
1963 ^{g/}	6,478,873	61.2	3,668,538	34.7	412,280	3.9	18,720	0.2	10,582,064 ^{h/}	100.0
1971	7,865,293	62.0	4,355,777	34.3	427,750	3.4	41,077	0.3	12,689,897	100.0

Sources: A.G. Ranasinha, *Census of Ceylon 1946, vol. I, part II, Statistical Digest* (Colombo, Department of Census and Statistics, 1950), table 19; H.E. Peries, *Census of Ceylon 1953, vol. I, General Report* (Colombo, Department of Census and Statistics, 1957), appendix 3, table 12; unpublished data of 1963 Census (Colombo, Department of Census and Statistics); Government of Sri Lanka, *Census of Population 1971, vol. II, All Island Tables, part I, General Characteristics of the Population* (Colombo, Department of Census and Statistics, 1975), table 8.

- Notes: ^{a/} In 1901 no "divorced/ separated" persons were specified.
^{b/} Includes 253 persons "not specified".
^{c/} In 1911 and 1921 "widowed" and "divorced/separated" persons were classified together.
^{d/} Includes 15 persons "not specified".
^{e/} Marital status particulars in respect of population aged 15 years and over.
^{f/} Includes 4,588 persons "not specified".
^{g/} Marital status particulars in respect of population aged 10 years and over.
^{h/} Includes 3,653 "unspecified".

lation by marital status for the various census years from 1901 to 1971. It will be observed that the unmarried or never-married persons have constituted around 60 per cent of the total population in all years. However, in recent years, the proportion of unmarried persons in the total population has shown a tendency to increase and consequently there has been a decline in the proportion of those who were

indication of changes in marital status of the population. In Sri Lanka, only a very few children under 15 years of age get married^{12/} and hence it will be more appropriate to consider the changes in the marital composition of the population aged 15 years and over. The discussions in the subsequent sections will therefore be based on an analysis of the data relating to the population aged 15 years and over.

^{11/} For details, see chapter XVII.

^{12/} The number of married persons below 15 years has shown a progressive decline from 10,580 in 1901 to 1,929 in 1971.

2. Married population

a. Number and proportion

The married population aged 15 years and over classified by sex for various census years from 1901 to 1971 is given in table 82. It will be observed that over 55 per cent of the population aged 15 years and over has remained married in all census years, the proportion being higher among females than among males. The comparatively lower proportion of married among males may possibly be due to the fact that, as noted in chapter V, males are numerically more than females in almost all age groups. The trend in these proportions for both males and females has been similar, showing a decline in the proportion married to total population in recent years.

The proportion of married persons to population in each age-sex group shows marked variations as is evident from table 83. It will be observed that the proportions married for both males and females increases with age up to a peak in the middle ages and declines gradually thereafter. The largest proportion of married persons among males in all years was in the age groups 35 to 59 years while for females it was in the ages 25 to 49 years. The proportion of married is lowest in the younger age group 15-19 years. Only 1 per cent, or less than 1 per cent, of the males in this age group were enumerated as married in all censuses while the proportion among females, which was about 24 per cent in 1946 and 1953, declined to 14.7 in 1963 and to 10.4 in 1971. A similar trend is observed in respect of persons aged 20-24 years, the proportion of married males in this age group declining from 18.9 per cent in 1946 to 13.3 per cent in 1971, and the corresponding proportions for females recording a similar decline from 68.4 per cent in 1946 to 45.9 per cent in 1971. These declines reflect the increase in age at marriage observed in recent decades.

It will also be noted that between ages 15 and 39 years the proportions married were higher among females than among males in all census years. In the subsequent age groups, higher proportion of males than females were married. This is due to the higher incidence of widowhood among females. Further, the proportions of males and females currently married in the higher age groups have shown a steady increase over the 1946-1971 period due to a reduction in the incidence of widowhood. The decline in the over-all proportion of currently married persons observed in recent years is thus largely due to

the marked reduction in the proportion of married persons at younger ages.

b. Age at marriage

For a long time in Sri Lanka, the average age at marriage, especially of females, has remained at low levels but in recent years there has been an increasing trend in the mean age at marriage, though this is not fully reflected in the data relating to registered marriages presented in table 84. However, the singulate mean age at marriage calculated on the basis of the census data and presented in table 85 shows that there was an increase in the mean age at marriage between 1901 and 1971 and that in recent years this increase has been more marked in the case of females.

It will be observed that "singulate mean age at marriage in 1971 was 28 years for males and 23.5 years for females. Though there is not much of a change in the male age at marriage, the female age at marriage has increased by 1.4 years during the period 1963 to 1971. Looking at the sequence of the mean age at marriage from 1901 onwards, it is evident that there has been a steady increase in female singulate mean age at marriage up to the end of 1921 when it reached 21.4 years. In 1946 it dropped slightly to 20.7 years and since then it has steadily increased to 23.5 years in 1971. The singulate mean age at marriage has increased by 1.2 years in the decade 1953 to 1963 and by 1.4 years during the intercensal period 1963-1971."^{13/}

It is also evident from table 86 that an increase in the female singulate mean age at marriage has been recorded in all 22 administrative districts of the country between 1963 and 1971. In 18 of these, this increase has been more than the national increase of 1.4 years. The highest increase of 2.3 years was recorded in respect of Anuradhapura District in which the female singulate mean age at marriage was one of the lowest in 1963. The lowest increase of 1.0 year occurred in Galle District which had the highest singulate mean age at marriage for females in 1963.

The analysis in the preceding paragraphs indicate that in Sri Lanka, age at marriage and the proportion marrying have been undergoing a change in the direction of delayed and reduced marriages. "This delay in marriage is also confirmed by the historical data on the percentage of persons marrying under 21 years of age. In 1935, this percentage for general

^{13/} CICRED, *The Population of Sri Lanka*, (Colombo, Department of Census and Statistics, 1974), p. 40.

Table 82. Married population 15 years of age and over by sex, Sri Lanka, census years 1901-1971

Census year	Both sexes			Male			Female		
	Population 15 years and over	Married population 15 years and over	Percentage married	Population 15 years and over	Married population 15 years and over	Percentage married	Population 15 years and over	Married population 15 years and over	Percentage married
1901	2,060,075	1,189,557	57.7	1,102,005	607,549	55.1	958,070	582,008	60.7
1911	2,426,662	1,372,835	56.6	1,302,640	696,208	53.4	1,124,022	676,627	60.2
1921	2,727,219	1,491,458	54.7	1,464,823	755,098	51.5	1,262,396	736,360	58.3
1946	4,178,895	2,494,851	59.7	2,268,334	1,264,410	55.7	1,910,561	1,230,441	64.4
1953	4,882,966	2,953,132	60.5	2,634,949	1,493,280	56.7	2,248,017	1,459,852	64.9
1963	6,192,409	3,666,194	59.2	3,271,351	1,827,209	55.9	2,921,058	1,838,985	63.0
1971	7,745,212	4,353,854	56.2	4,018,116	2,152,330	53.6	3,727,096	2,201,524	59.1

Sources: A.G. Ranasinha, *Census of Ceylon 1946, vol. I, part II, Statistical Digest* (Colombo, Department of Census and Statistics, 1950), tables 12 and 21; H.E. Peries, *Census of Ceylon 1953, vol. I, General Report* (Colombo, Department of Census and Statistics, 1957), appendix 3, table 12; unpublished data of 1963 Census (Colombo, Department of Census and Statistics); Government of Sri Lanka, *Census of Population 1971, vol. II, All Island Tables, part I, General Characteristics of the Population* (Colombo, Department of Census and Statistics, 1975), table 8.

Table 83. Age-sex specific proportions of married persons, Sri Lanka, census years 1946-1971

Age group	1946		1953		1963		1971	
	Male	Female	Male	Female	Male	Female	Male	Female
15 - 19	1.1	23.9	0.9	23.6	0.9	14.7	0.6	10.4
20 - 24	18.9	68.4	15.8	65.8	15.0	57.6	13.3	45.9
25 - 29	55.1	84.4	53.3	84.4	49.0	81.0	46.2	73.4
30 - 34	75.3	87.1	76.4	87.7	72.8	88.6	73.4	85.8
35 - 39	84.2	85.4	85.4	86.5	85.2	89.8	85.0	88.9
40 - 44	86.0	78.4	87.2	80.7	87.0	86.1	88.7	86.9
45 - 49	86.0	71.5	86.5	73.8	88.6	81.6	89.1	83.5
50 - 54	83.3	61.3	84.2	62.6	86.6	72.0	88.2	76.1
55 - 59	82.2	54.3	81.9	55.2	84.3	64.9	86.9	69.7
60 - 64	77.7	43.2	78.2	41.9	80.4	50.4	83.8	57.9
65 and over	71.1	30.8	69.7	28.3	71.9	33.5	76.3	40.7
All ages	55.7	64.4	55.9	64.9	55.9	63.0	53.6	59.1

Source: Computed from data of the 1946, 1953, 1963 and 1971 censuses.

Table 84. Mean age at marriage, selected years, 1932 to 1973

Year	General marriages		Kandyan marriages		Muslim marriages	
	Male	Female	Male	Female	Male	Female
1932	27.2	21.6	26.2	19.5	...	...
1935	28.7	21.9	25.6	18.7	...	...
1939	28.6	22.2	27.6	20.5	28.4	18.4
1945	28.9	20.6	27.5	19.6	...	...
1946	28.8	22.9	27.7	21.1	28.3	19.8
1947	28.6	22.7	26.9	20.2	28.9	19.6
1948	28.6	22.8	26.9	20.0	29.1	19.0
1950	28.7	22.6	26.3	22.5	28.7	18.9
1953	28.8	23.0	26.4	20.4	27.9	18.7
1955	28.5	22.9	28.1	21.5	27.1	18.4
1958	28.5	23.1	27.6	21.2	27.1	18.3
1960	28.3	23.1	27.6	21.5	27.1	18.5
1963	28.8	23.2	29.2	20.0	28.6	19.5
1964	29.4	23.8	31.2	24.5	26.5	18.5
1965	29.6	24.7	33.7	26.7	27.5	19.7
1966	27.2	22.4	28.5	21.8	26.1	18.3
1967	27.9	23.2	31.3	24.7	26.0	18.1
1968	29.1	23.6	21.2	25.1	26.5	18.7
1969	27.9	23.3	27.8	22.3	26.9	18.0
1970	28.6	23.4	29.8	23.1	26.8	18.6
1971	28.5	23.4	29.8	23.2	26.8	18.6
1972	28.5	23.4	30.0	23.3	26.9	18.6
1973	27.7	23.3	26.7	21.7	25.9	19.4

Source: Reports of the Registrar-General on Vital Statistics.

Table 85. Singulate mean age^{a/} at marriage, census years 1901-1971

Census year	Singulate mean age at marriage	
	Male	Female
1901	24.6	18.3
1911	26.5	20.8
1921	27.0	21.4
1946	27.0	20.7
1953	27.2	20.9
1963	27.9	22.1
1971	28.0	23.5

Source: CICRED, *The Population of Sri Lanka* (Colombo, Department of Census and Statistics, 1974), table 3.11.

Note: ^{a/} An estimate of the mean number of years lived by a cohort before first marriage.

Table 86. Singulate mean age at marriage for females by district, 1963 and 1971

District	Female singulate mean age at marriage		Increase 1963-1971
	1963	1971	
Colombo	23.3	24.4	1.1
Kalutara	24.0	25.2	1.2
Kandy	22.0	24.0	2.0
Matale	20.8	22.7	1.9
Nuwara Eliya	21.6	23.4	1.8
Galle	24.8	25.8	1.0
Matara	24.2	25.7	1.5
Hambantota	21.4	23.5	2.1
Jaffna	21.7	23.4	1.7
Mannar	18.5	20.2	1.7
Vavuniya	18.6	20.3	1.7
Batticaloa	18.2	20.1	1.9
Amparai	18.2	20.1	1.9
Trincomalee	18.1	19.7	1.6
Kurunegala	20.9	22.8	1.9
Puttalam	20.7	22.1	1.4
Anuradhapura	19.1	21.4	2.3
Polonnaruwa	19.0	21.0	2.0
Badulla	21.2	23.3	2.1
Monaragala	18.8	21.0	2.2
Ratnapura	22.0	23.8	1.8
Kegalla	22.5	24.4	1.9
Sri Lanka	22.1	23.5	1.4

Source: CICRED, *The Population of Sri Lanka*, (Colombo, Department of Census and Statistics, 1974), table 3.12.

marriage was in respect of women and 1.3 for men. That is 41 percent of the brides contracting marriages under the General Marriage Ordinance were under 21 years of age. Today only 27 percent of the brides are under 21 years. In other words, 73

percent of the brides are over 21 years old. In the case of the Kandyan marriages, the number of brides under 21 years of age in 1935 formed 74 percent while today only about 50 percent of the Kandyan brides are under 21 years. In the case of Muslim marriages, this proportion however appears to have increased from about 65 percent in 1939 to 81 percent today" ^{14/}

c. Marriage squeeze

There are several factors responsible for the reduction in the proportion of married persons and the delay in marriages observed in recent years. In Sri Lanka, females tend to marry males who are about 5 years their senior in age^{15/} and the availability of males and females at the "marriageable age" is therefore an important factor. It has also been observed that in Sri Lanka, a very high proportion of women marry for the first time between ages 15 and 29 years while most men do so between ages 20 and 34 years. Hence the ratio of males aged 20-34 years to females aged 15-29 years provides a fairly reliable index of the availability of men and women for marriage. The number of males per 100 females in the various age groups^{16/} for the census years 1901 to 1971 are given in table 87.

It will be observed from table 87 that the ratio of males per 100 females in the appropriate "marriageable" age groups for the period 1901 to 1953 do not indicate any imbalances in the sexes as far as the popular ages (men aged 20-34 years and women aged 15-29 years) are concerned. Similarly, the male/female ratio in the ages at which practically first marriages take place (20-44 for males and 15-39 for females) also shows no sex imbalance during this period. However, "in 1963, there appears to be a minor imbalance at the most popular mar-

^{14/} S. Selvaratnam, *Demographic Aspects of Family Life*, Keynote address, Family Life Education Workshop, YWCA - Colombo Plan Bureau, Colombo, October 1973.

^{15/} A.J. Coale has observed, "couples marry within a range of socially accepted ages, and postpone marriage within that range because of inability to satisfy the current norms (e.g., of dowry, property ownership or income) for marriage", in "The Demographic Transition", *IUSSP International Population Conference* (Liege, 1973), vol. I, p. 57.

^{16/} Marriages where brides are older than their grooms, though rare in Sri Lanka, have been taken into account in computing these ratios. Since a few female first marriages occur in the ages 30-34 years and 35-39 years, the availability of mates in the 35-39 and 40-44 year age groups is also shown in the table.

Table 87. Males per 100 females in various age groups, Sri Lanka, census years 1901 to 1971

	1901	1911	1921	1946	1953	1963	1971
<u>Males (20-24)</u>	88.6	114.8	111.1	103.7	116.4	88.3	90.6
<u>Females (15-19)</u>							
<u>Males (25-29)</u>	112.1	106.2	99.6	97.9	99.7	85.1	73.4
<u>Females (20-24)</u>							
<u>Males (30-34)</u>	70.7	87.2	86.4	91.2	84.5	95.9	77.7
<u>Females (25-29)</u>							
<u>Males (20-34)</u>	90.4	102.3	99.0	97.9	100.2	89.3	81.1
<u>Females (15-29)</u>							
<u>Males (35-39)</u>	153.4	108.6	115.7	128.3	124.1	109.2	102.2
<u>Females (30-34)</u>							
<u>Males (40-44)</u>	67.3	101.4	95.2	88.0	86.5	83.4	87.0
<u>Females (35-39)</u>							
<u>Males (20-44)</u>	94.3	103.3	101.3	101.1	101.7	91.1	84.9
<u>Females (15-39)</u>							

Source: Dallas F.S. Fernando, "Changing nuptiality patterns in Sri Lanka, 1901-1971", *Population Studies* (London), vol. XXIX, No. 2, July 1975, table 4.

riageable ages, since for 100 females at ages 15-29 there are 89.3 males at ages 20-34 and the imbalance persists if we consider the ratio M(20-44)/F(15-39). In 1971, the situation seems to have deteriorated since at the popular marriageable ages there are only 81.1 males per 100 females indicating a serious "marriage squeeze", while in the extended age group the figure is 84.9. If the relative availability of males and females at the popular mar-

riageable ages is confined to never married males and females who are potential marriage partners, there are only 81.9 single males per 100 single females in the popular age group, and 84.7 in the extended age group 15-39. The relative availability of eligible males is further aggravated by the serious unemployment situation, as male unemployment is quite pronounced at ages 20-29.^{17/}

d. Registered vs. customary marriages

It was noted earlier that information relating to registered and customary marriages were collected separately only at the censuses taken since 1946. The number of registered and customary marriages recorded in these censuses are shown in table 88.

It will be seen that the proportion of persons who had registered their marriages has increased considerably from about 69 per cent in 1946 to 81 per cent in 1971. Consequently there has been a decline over the years in the proportion of these married according to custom.

3. Unmarried population

The proportion of unmarried or never-married persons to population in each sex-age group is given in table 89. It will be seen that in all census years

^{17/} Dallas F.S. Fernando, "Changing nuptiality patterns in Sri Lanka, 1901-1971", *Population Studies* (London), vol. XXIX, No. 2, July 1975, p. 186.

Table 88. Married population by type of marriages, Sri Lanka, census years 1946-1971

Census year	Total married	Married (registered)		Married (customary)	
		Number	Percentage	Number	Percentage
1946	2,498,532	1,722,099	68.9	776,433	31.1
1953 ^{a/}	2,953,132	2,113,018	71.6	840,114	28.4
1963 ^{b/}	3,668,538	2,936,724	80.1	731,814	19.9
1971	4,355,777	3,546,701	81.4	809,076	18.6

Sources: A.G. Ranasinha, *Census of Ceylon 1946, vol. I, part II, Statistical Digest* (Colombo, Department of Census and Statistics, 1950), table 20; H.E. Peries, *Census of Ceylon 1953, vol. I, General Report* (Colombo, Department of Census and Statistics, 1957), appendix 3, table 12; unpublished data of 1963 Census (Colombo, Department of Census and Statistics); Government of Sri Lanka, *Census of Population 1971, vol. II, All Island Tables, part. I, General Characteristics of the Population* (Colombo, Department of Census and Statistics, 1975), table 8.

Notes: ^{a/} Married population aged 15 years and over.
^{b/} Married population aged 10 years and over.

Table 89. Age-sex specific proportions of unmarried persons, Sri Lanka, census years 1946-1971

Age group	1946		1953		1963		1971	
	Male	Female	Male	Female	Male	Female	Male	Female
15-19	98.8	75.4	98.7	75.7	99.0	85.0	99.4	89.4
20-24	80.5	29.4	83.5	32.5	84.7	41.3	86.6	53.2
25-29	43.4	11.8	45.4	12.8	50.2	17.1	53.2	24.6
30-34	22.4	6.6	21.7	7.5	26.1	8.3	25.6	10.9
35-39	12.5	4.3	11.8	5.4	13.1	4.8	13.4	5.8
40-44	9.3	4.1	8.7	5.0	10.3	4.3	9.2	4.7
45-49	7.6	3.4	7.6	4.4	7.4	3.9	8.0	4.1
50-54	7.5	3.6	7.2	4.5	7.4	4.3	7.5	4.5
55-59	6.5	3.1	6.6	3.7	7.4	3.7	7.2	4.4
60-64	7.1	3.2	6.7	4.6	8.0	4.5	7.5	4.8
65 and over	6.6	3.3	6.2	3.4	7.4	5.1	7.5	4.5
All ages	39.8	21.2	38.8	21.5	40.6	26.2	43.7	31.3

Source: Computed from data of the 1946, 1953, 1963, and 1971 censuses.

and in each age group, the proportion of unmarried males is considerably higher than the proportion of unmarried females. This may be due to two important factors. In the first place, as mentioned earlier, males outnumber females in almost all age groups. Secondly, social norms require that a girl should be married as soon after she has attained the age of puberty as possible.

It will also be observed that there has been an increase over the years in the proportion of unmarried or never-married persons both among males and females in all age groups. In 1946, about 40 out of every 100 males and 21 out of every 100 females aged 15 years and over were unmarried. In 1971, these proportions increased to 44 for males and 31 for females. The increase in the proportion unmarried has been greater in the case of females than males during the 25-year period. The increase in the proportion unmarried or never-married has been spectacular in the case of females aged 20-24 years and 25-29 years. In 1946, only about 29 per cent of females aged 20-24 years were unmarried. In 1971 this proportion increased to as much as 53.2 per cent. The proportion of unmarried females in the 25-29 age group recorded a more than twofold increase from 11.8 per cent in 1946 to 24.6 per cent in 1971.

The highest proportion of unmarried persons are to be found in the 15-19 age group. For males nearly everyone in this age group remained unmarried at the 1971 census while the proportion of unmarried females in this age group has shown a steady increase from 75.4 per cent in 1946 to 89.4 per cent in

1971. In all census years, the proportions unmarried both among males and females aged 15-59 years has been decreasing with increasing age. The decreasing trend, however, is interrupted at ages 60-64 years but thereafter the proportions continue to decline.

4. Widowed, divorced or separated

Persons who are widowed, divorced or separated from their spouses constitute that fraction of the ever-married population who are living in a state of marital disruption. The proportion of population in this state is no doubt important demographically but marital disruption also very seriously affects family life.

As noted earlier, data relating to marital status of the population was collected at all censuses held in Sri Lanka from 1901 onwards. However no divorced or separated persons were specified in the 1901 census. In 1911 and 1921 widowed and divorced/separated were classified together. It was in 1946 that figures relating to widowed and divorced were tabulated separately. It was only in 1971 that divorced and separated were tabulated separately for the first time.

a. Widowed

The number of widowed persons 15 years and over classified by sex for the various census years since 1946 are given in table 90.

It will be seen from table 90 that, compared with

Table 90. Number of widowed persons and proportion widowed to population aged 15 years of age and over, 1946-1971

Census year	All widowed		Widowed males		Widowed females	
	Number	Proportion	Number	Proportion	Number	Proportion
1946	363,011	8.7	95,341	4.2	267,670	14.0
1953	398,841	8.2	105,575	4.0	293,266	13.0
1963	405,461	6.6	104,807	3.2	300,654	10.4
1971	427,649	5.5	92,769	2.3	334,880	9.0

Sources: A.G. Ranasinha, *Census of Ceylon 1946, vol. I, part II, Statistical Digest* (Colombo, Department of Census and Statistics, 1950), table 23; H.E. Peries, *Census of Ceylon 1953, vol. I, General Report* (Colombo, Department of Census and Statistics, 1957) appendix 3, table 12; unpublished data of 1963 Census (Colombo, Department of Census and Statistics); Government of Sri Lanka, *Census of Population 1971, vol. II, All Island Tables, part I, General Characteristics of the Population* (Colombo, Department of Census and Statistics, 1975), table 8.

Table 91. Age-sex specific proportions of widowed persons, Sri Lanka, census years 1946-1971

Age group	1946		1953		1963		1971	
	Male	Female	Male	Female	Male	Female	Male	Female
15-19	0.1	0.6	0.2	0.3	-	0.2	-	0.1
20-24	0.5	1.8	0.3	1.2	0.2	0.8	0.1	0.5
25-29	1.2	3.4	0.8	2.2	0.4	1.4	0.2	1.2
30-34	2.0	5.9	1.4	4.1	0.8	2.6	0.5	2.3
35-39	2.9	9.8	2.1	7.5	1.3	4.8	0.9	4.3
40-44	4.4	17.1	3.4	13.6	2.2	9.0	1.3	7.5
45-49	6.1	24.8	5.2	21.1	3.5	14.0	2.2	11.5
50-54	8.9	34.8	7.9	32.3	5.6	23.2	3.6	18.6
55-59	11.0	42.4	10.8	40.5	7.9	31.0	5.2	25.2
60-64	14.9	53.4	14.4	53.0	11.2	44.6	8.0	36.7
65 and over	22.3	65.6	23.4	68.0	20.3	61.1	15.6	54.4
All ages	4.2	14.0	4.0	13.0	3.2	10.4	2.3	9.0

Source: Same as table 89.

males, the number as well as the proportion widowed was higher among females in all years. In 1971, there were about 23 widowers in every thousand males compared with 90 widows in every thousand females aged 15 years and over. The over-all incidence of widowhood among men and women has declined over the years reflecting to a certain extent, the declining mortality trends of the post-1946 period. However, "in the past, death rates for females in all age groups were higher than those of males. Hence incidence of widowhood should have been more among males than females. But in Sri Lanka a widowed male has a better chance of re-marriage than the widowed female and thus end his widowhood. For instance, according to the Registrar General's *Re-*

port on Vital Statistics, there were 1,004 widowers as against 573 widows getting married in 1965, and in earlier years, the proportion of widowers getting married has still been higher. Thus the data on the number of widowed persons does not truly reflect the incidence of widowhood in most countries" ^{18/}.

The proportion of widowers and widows in each five-year age group is given in table 91. As is to be

^{18/} S. Selvaratnam, *op.cit.*, p.8. It has also been pointed out that "that are more widows than widowers, a normal feature in every country because husbands are generally older than wives and are more likely to die first, and because more widowers remarry", A.G. Ranasinha, *op.cit.*, p. 196.

Table 92. Divorced/separated persons 15 years of age and over, Sri Lanka, census years 1946 to 1971

Census year	All divorced/separated persons		Divorced/separated males		Divorced/ separated females	
	Number	Proportion	Number	Proportion	Number	Proportion
1946	12,069	0.29	5,500	0.24	6,569	0.34
1953	20,626	0.42	9,824	0.37	10,802	0.48
1963	18,506	0.30	8,127	0.25	10,379	0.36
1971	41,077	0.32	17,410	0.27	23,667	0.38

Source: Same as table 90.

Table 93. Percentage distribution of total population by marital status and sex for Sri Lanka by urban and rural sectors, 1946 and 1971

Marital status and sex	1946			1971		
	Both sectors	Urban sector	Rural sector	Both sectors	Urban sector	Rural sector
Both sexes	100.0	100.0	100.0	100.0	100.0	100.0
Never married	56.8	57.7	56.7	62.0	62.7	61.8
Married (registered)	25.9	31.2	24.9	27.9	29.7	27.4
Married (customary)	11.7	5.9	12.7	6.4	4.0	7.1
Widowed	5.5	5.0	5.5	3.4	3.2	3.4
Divorced and separated	0.1	0.2	0.2	0.3	0.3	0.3
Male	100.0	100.0	100.0	100.0	100.0	100.0
Never married	61.3	61.5	61.3	65.4	66.2	65.1
Married (registered)	24.9	30.0	23.8	26.9	28.5	26.4
Married (customary)	11.0	6.2	11.9	6.1	3.8	6.7
Widowed	2.7	2.2	2.8	1.4	1.2	1.5
Divorced and separated	0.1	0.1	0.2	0.2	0.3	0.3
Female	100.0	100.0	100.0	100.0	100.0	100.0
Never married	51.8	52.4	51.6	58.4	58.7	58.3
Married (registered)	26.9	32.9	26.0	29.1	31.0	28.5
Married (customary)	12.5	5.4	13.6	6.7	4.2	7.4
Widowed	8.6	8.9	8.5	5.4	5.6	5.4
Divorced and separated	0.2	0.3	0.2	0.4	0.4	0.4

Sources: A.G. Ranasinha, *Census of Ceylon 1946, vol. I, part II, Statistical Digest* (Colombo, Department of Census and Statistics, 1950), tables 16 and 16a; Government of Sri Lanka, *Census of Population 1971, vol. II, All Island Tables, part I, General Characteristics of the Population* (Colombo, Department of Census and Statistics, 1975), table 8.

Table 94. Age-sex specific proportions of never-married and married persons by urban and rural sectors, Sri Lanka, 1971

Age group	Never married				Married ^{a/}			
	Male		Female		Male		Female	
	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural
15-19	99.4	99.4	90.9	88.9	0.5	0.6	8.9	10.8
20-24	90.2	85.2	58.7	51.6	9.7	14.6	40.6	47.4
25-29	61.5	50.1	29.9	23.0	38.2	49.3	68.5	74.8
30-34	31.2	23.6	14.0	10.0	68.1	75.3	83.1	86.7
35-39	17.6	12.1	8.4	5.1	81.1	86.2	86.3	89.7
40-44	12.4	8.2	6.8	4.0	85.7	89.6	84.5	87.6
45-49	11.1	7.0	6.2	3.5	86.3	89.9	80.6	84.3
50-54	10.2	6.7	6.7	3.8	86.1	88.8	72.5	77.2
55-59	10.2	6.3	6.6	3.7	84.4	87.6	66.1	70.7
60-64	10.0	6.9	7.5	3.9	82.0	84.3	55.0	58.8
65-69	10.0	6.7	7.3	3.8	78.9	81.6	48.5	50.9
70-74	10.3	7.1	7.6	3.9	74.9	77.2	38.9	38.3
75 and over	9.7	7.0	7.0	3.4	67.1	69.0	32.7	29.7

Source: Government of Sri Lanka, *Census of Population 1971, vol. II, All Island Tables, part I, General Characteristics of the Population* (Colombo, Department of Census and Statistics, 1975), table 8.

Note: ^{a/} Includes married (registered) and married (customary).

expected, the highest proportion of widowed persons are found in the older age groups, the proportion widowed rising gradually with increasing age. In 1946, about 40 per cent of all widows belonged to the reproductive age group, 15-49 years. In 1971, however, this proportion had declined to about 25 per cent.

b. Divorced/separated persons

As stated earlier, it was in the 1971 census that the divorced and the legally separated were classified separately. A divorced person is one whose marriage has legally been rendered null and void. Such persons are, however, free to re-marry. A decree of legal or judicial separation does not have the effect of dissolving marriage but only suspending some of the legal consequences of marriage. The number of divorced or legally separated persons aged 15 years and over at the various censuses since 1946 and their proportion to total population 15 years and over are shown in table 92.

The total number of divorced persons constitutes only a small proportion of the population aged 15 years and over. In 1971, less than three in every 1,000 men and about three in every thousand females 15 years of age and over were divorced or separated from their spouses. The incidence of divorce/separation appears to be higher among females because most of the divorced males tend to re-marry, while divorced women like widows, have been at a disadvantage in this respect^{19/}. However in recent years, an increasing number of divorced women have been re-marrying. Thus the census data on the divorced

population do not give an accurate picture of the incidence of divorces in the country.

5. Rural-urban differentials

The percentage distribution of the total population by marital status and sex for urban and rural areas in 1946 and 1971 is shown in table 93. It will be observed that in 1946 as well as in 1971 the difference in the marital status of the population between urban and rural areas is not very significant. Both among males and females, the proportion never-married was slightly higher in urban than in rural areas, and the proportion married was slightly higher in the rural compared with urban areas. However, in regard to those who were married customarily, there were significant differences in the proportions between urban and rural areas for both sexes, the proportions being higher in the rural areas. It will thus appear that customary marriages are more prevalent in the rural than in the urban areas.

However, the proportions of never-married and married persons in each age group for the urban and rural areas in 1971 shown in table 94 give a different picture. For males and females the proportions never-married were significantly higher in rural than in urban areas, except in the 15-19 age group where the proportions in both areas are the same for males, while in the case of females, the urban proportion is slightly higher than the rural. In regard to the proportions married, for males, the percentages were significantly higher in the rural than in the urban areas for all age groups except the 15-19 group where the proportions were about the same. In the case of females, the rural proportions compared to urban ones were significantly higher in all ages 15 through 69, and lower in ages beyond 70 years.

^{19/} There is a Tamil saying to the effect, "Although a man may even marry a widow, he should on no account marry a divorced woman."

CHAPTER VIII

TRENDS AND DIFFERENTIALS IN MORTALITY

A. INTRODUCTION

Until after the end of the Second World War, mortality was the principal element affecting the growth of Sri Lanka's population. Until then the country's birth rate remained fairly stable at a high level with only minor fluctuations.^{1/} Though the death rate was also high, it was subject to much greater fluctuations due to epidemics and other causes. Thus, it was changes in the death rate that, by and large, determined the magnitude of the natural increase in population of the country. Further, the health policy of the government was concerned only with the control of morbidity and mortality and not of fertility. The government's programme to control infectious diseases and provide better environmental sanitation resulted in a rapid decline in mortality which today remains fairly stable at low levels. The emphasis has now shifted from death rates to birth rates. Nevertheless, the mortality experience of Sri Lanka provides an interesting case study.

An accurate analysis of mortality trends over the years is unfortunately handicapped by the lack of reliable data for the earlier years. Though registration of vital events commenced in 1867, registration was not made compulsory until 1897. Further, vital registration was not performed with much care in the early years, and hence the data particularly for the years up to the beginning of the century are subject to errors of underreporting^{2/}. However, the data from the registration system provides the only basis for measuring mortality trends in Sri Lanka.

B. CRUDE DEATH RATES

The incidence of deaths among a population is generally measured by the crude death rate which is the number of deaths in a year per thousand of the midyear population. Although the crude death rate

^{1/} See chapter IX.

^{2/} For detailed discussion, see annex II. Also it has been observed by Irene Taeuber, "Island-wide vital statistics exist for the entire span of the census period, but evaluation of trends is complicated by the fact that the early decades were characterised by continuing improvements in the administrative organisation of the statistical system and the habituation of the people to it." in "Ceylon as demographic laboratory: preface to analysis", *Population Index* (Princeton, NJ), vol. 15, No. 4, October 1949.

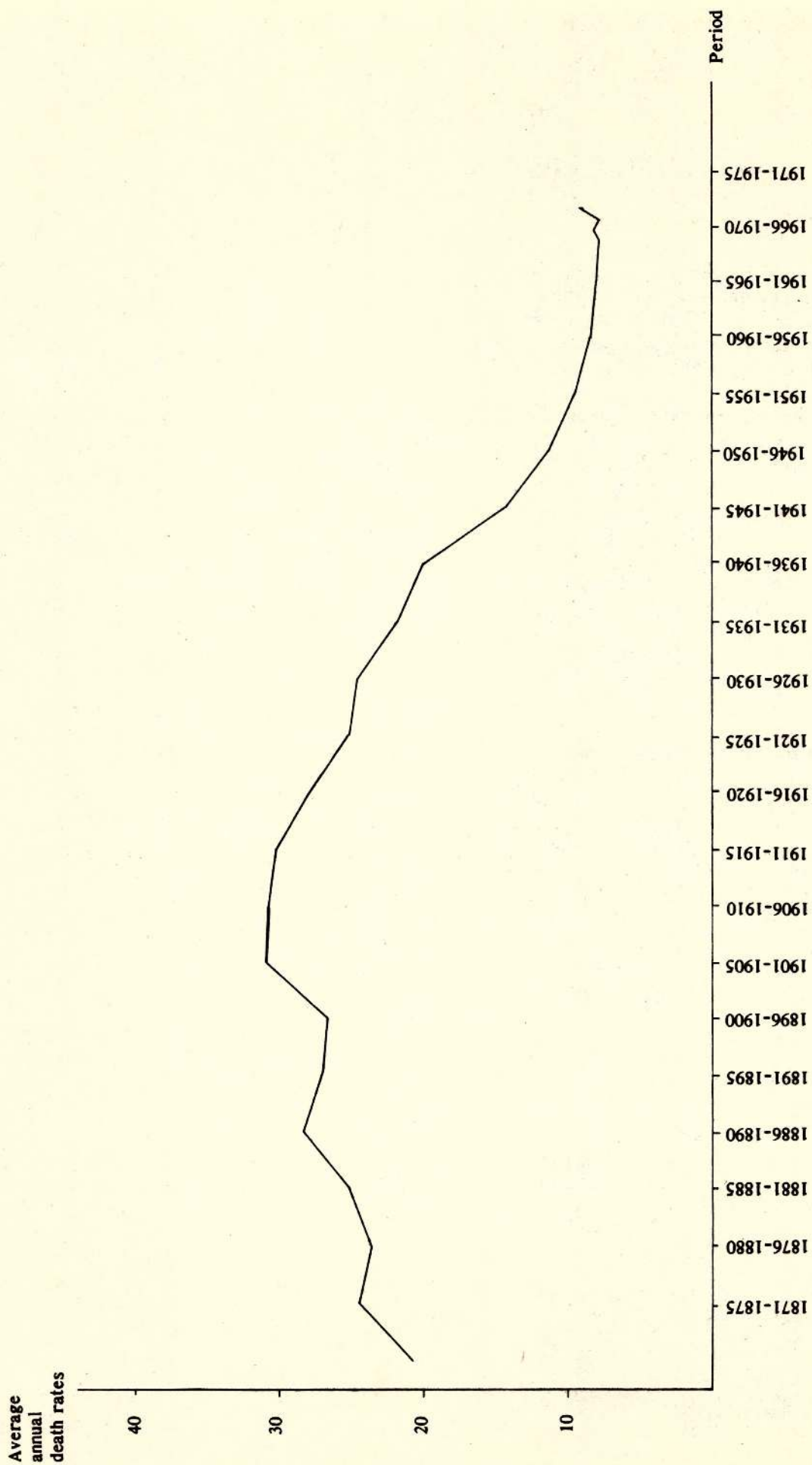
has certain limitations in the detailed study of mortality, it is easily computed and is a simple and convenient measure for examining approximate trends in mortality.

The crude death rates based on the registration data for all years from 1867 are shown in annex III, table 1. Average crude death rates for quinquennial periods commencing 1871 are shown in table 95 and figure 11. The five-year average rates show a rising trend until 1906-1910 and remain stable at a little over 30 during the next three quinquennial periods. Thereafter the rates show a gradual decline up to 1941-1945 quinquennium. Between 1941-1945 and 1946-1950 there is a sharp drop in the average rate which, thereafter shows a gradual decline to an average of 8 per thousand during the 1971-1974 period.

Table 95. Annual average deaths and death rates for quinquennial periods, 1871-1974

Quinquennium	Annual average number of deaths	Annual average death rates
1871-1875	51,405	20.8
1876-1880	66,266	24.5
1881-1885	65,534	23.5
1886-1890	72,941	25.1
1891-1895	88,017	28.3
1896-1900	91,310	27.0
1901-1905	99,335	26.7
1906-1910	121,359	30.8
1911-1915	128,884	30.6
1916-1920	136,848	30.1
1921-1925	129,992	27.8
1926-1930	127,841	25.1
1931-1935	134,937	24.6
1936-1940	124,179	21.4
1941-1945	126,605	19.9
1946-1950	103,045	14.3
1951-1955	93,107	11.2
1956-1960	88,805	9.5
1961-1965	89,920	8.4
1966-1970	94,237	7.9
1971	97,374	7.7
1972	104,080	8.0
1973	101,150	7.7
1974	119,125	8.9

Source: Based on data given in annex III, table 1.



Source: Reports of Registrar General on Vital Statistics.

Figure 11. Average crude death rates for quinquennial period, 1871-1974

1. 1871-1875 to 1906-1910

It will be seen from table 95 that the average quinquennial crude death rates based on registration data show an increase from 20.8 during 1871-1875 to 26.7 during 1901-1905 and to 30.8 during 1906-1910. It is very unlikely that the death rate could have actually risen during the period 1871 to 1910. There were of course bad years during this period when exceptionally high death rates were recorded e.g. 31.7 in 1877, 30.6 in 1899 and 35.1 in 1906^{3/}. But there is no evidence to substantiate an upward trend in the death rate during this period. The observed rising trend until 1910 is almost certainly due to a gradual improvement in the completeness of registration particularly as registration of deaths was not made compulsory until 1897. A similar upward trend until 1901-1905 in the registered birth rates as well as the infant mortality rates gives greater validity to this conclusion. The registered death rates do not therefore, offer a satisfactory basis for analysing the mortality trends or its level in the early years of registration up to about 1910.

Since, as noted earlier, death registration was incomplete particularly during the early years, the death rate based on registered deaths would be too low and the true level of the death rate would have been higher. A measure of the extent of under-registration during this period is also not available.^{4/} But the highest average death rate recorded for any quinquennium is 30.8 for 1906-1910. If it is, therefore, assumed that under-registration of deaths during the period 1871-1901 was of the same order as during the period 1906-1910, then the average quinquennial death rates during 1871-1905 too would have been about the level of 30 per 1,000 persons. Death rates for individual years would have fluctuated around this level.

Further, since death registration was found to be about 10 per cent incomplete in 1953, it will be rea-

^{3/} A total of 136,271 deaths were registered in 1906 as against an annual average of 99,592 for the period 1900-1905.

^{4/} See annex II. The first investigation into the extent of under-registration of births and deaths was undertaken in 1953 by the Department of Census and Statistics. This investigation showed that death registration was 88.6 per cent complete while registration of births was 88.1 per cent complete in 1953. An analytical assessment made by the United Nations in one of their studies, estimates that five-sixths (83 per cent) of all deaths and eight-ninths of all births were registered thus increasing the confidence of the results of the investigation conducted by the Department of Census and Statistics.

sonable to assume that the period prior to 1953 would also have suffered from under-registration, and that the degree of under-registration prior to the 1950s would have been higher. If the assumption is made that there was about 20 to 25 per cent under-registration of deaths during the early years of this century, then the death rate during the quinquennium 1906-1910 would have averaged about 38-42 per thousand. It could also be safely assumed that a death rate of about 38-42 would have prevailed during the preceding period, 1871-1905.

2. 1906-1910 to 1916-1920

During the three quinquennia, 1906-1910, 1911-1915 and 1916-1920, the average death rate shows a very slight downward trend. The trend is almost imperceptible and it could be stated that the rate was almost static although there were violent fluctuations in the rates for individual years. There were two epidemics, the malaria epidemic of 1911 and the influenza epidemic of 1919, during this period. In the year 1911, the number of deaths registered was 143,380 compared with 110,195 in the previous year. The epidemic seems to have affected the number of deaths in the following year 1912 as well; 134,383 deaths were recorded in that year. The death rate for infants under 1 year also rose from 176 per 1,000 live births in 1910 to 218 in 1911 and 215 in 1912.

The influenza epidemic of 1918-1919 was responsible for the highest death rate of 37.6 ever recorded in Sri Lanka. The number of deaths rose from 113,389 in 1917 to 149,407 in 1918 and to 168,323 in 1919. The 1921 census superintendent estimated the excess number of deaths from the influenza epidemic as approximately 57,000^{5/}.

If a slow but gradual improvement in the completeness of registration is assumed, it could be stated that the downward trend in the death rate commenced even earlier in the period 1906-1910. However, the violent nature of the fluctuations in the rates for individual years, the imperceptible trend in the quinquennial averages and the fact that the highest death rate ever recorded in Sri Lanka was for the year 1919 cast considerable doubt on the

^{5/} L.J.B. Turner, *Report of the Census of Ceylon 1921, vol. I, part II*. (Colombo, Government Printer, 1923), p. 74.

correctness of a conclusion that the downward trend commenced in the period 1906-1910.^{6/}

3. 1921-1925 to 1941-1945

A definite downward trend in the death rate is, however, noticeable since 1921. The decline in the quinquennial average continued at a fairly uniform rate until 1941-1945. The annual fluctuations too were less violent except for 1935, the worst malarial year when the maximum number of deaths (204, 823) for the country was recorded. (See annex III, table I, and also figure 5 in chapter I). The epidemic actually started in October 1934 and the mortality from malaria rose by leaps and bounds from 2,332 in 1934 to 47,326 in 1935. During 1935 the number of cases of malaria reported to have been treated in government hospitals and dispensaries was 5,459,539 compared with 2,333,945 in 1934 and only 1,116,543 in 1933. The infant death rate also recorded a sharp rise from 173 per 1,000 live births in 1934 to 262 in 1935. The maternal death rate too rose sharply from 20.1 per 1,000 live births in 1934 to 26.8 in 1935.

The registrar-general of the time reported that the 1935 malaria epidemic was no less disastrous than the influenza epidemic of 1918-1919. The epidemic swept over the southwestern part of the island with devastating effect, causing considerable damage.^{7/} He also stated that the infection might have been less fatal but for the impact of the long and severe economic depression, and attributed the rise in maternal deaths to the disastrous effect the epidemic had on pregnant women^{8/}. According to the registrar-general "the epidemic was of a complicated

6/ N.K. Sarkar, *The Demography of Ceylon* (Colombo, Ceylon Government Press, 1957), p. 117. Sarkar has observed: "On the basis of the census population figures, uncorrected for under-enumeration, the rising trend in the death rate continued until the decade 1911-1920; on the basis of the corrected population figures the rise ended a decade earlier, 1901-10. A study of the external evidence such as economic development, the rise in export and income, government stability and the expansion of health services, point to a declining rather than an increasing death rate, at least from the beginning of the century. It is probable, therefore, that the rise in the rate as calculated from 1900 to 1910 is due to an improvement in registration rather than an increase in the true death rate itself". He further continues "The reality of the apparent rise in mortality prior to 1910 is open to doubt, but there can be no doubt about its subsequent fall".

7/ *Report of Register-General on Vital Statistics for 1934*. (Colombo, Government Press), p. 126.

8/ *Report of Register-General on Vital Statistics for 1935*, (Colombo, Government Press), p. 27.

nature having been accompanied by a dysentric form of diarrhoea and by convulsions in children, and the large increase in mortality from convulsions, diarrhoea and dysentery may be mainly attributed to the epidemic".^{9/}

Owing to the inaccuracy of the malaria mortality returns, the registrar-general adopted a different method of assessing the ravages of the epidemic. The total deaths during the epidemic was compared with the average total deaths during the period 1930-1933 and the excess was ascribed to the epidemic. The estimate so obtained was 85,598 deaths.^{10/} As in the influenza epidemic year of 1919, the number of deaths exceeded the number of births during the year.

Though there were occasional bad years, the period 1921-1945 may be regarded as a period of general decline in mortality. This slow downward trend could "be ascribed to the impact of general economic progress and to the concomitant improvements in health services."^{11/} Among the factors which could have contributed to the gradual decline in mortality may be mentioned improvements in medical and public health services and environmental sanitation, provision of educational facilities, the construction of roads and railways, restoration of irrigation works etc.

A number of these developments were commenced in the period prior to 1920, but for various reasons their effects may have been delayed. For instance, the Civil Medical Department was created in 1859 but its activities were largely limited to the control of large scale epidemics. A bacteriological institute was set up in 1899 and a clinic for tropical diseases in 1965. Professional medical training was commenced in 1870 and helped to supply a part of the requirements of medical officers and apothecaries in charge of dispensaries. Quarantine arrangements as well as inoculation and vaccination against smallpox were introduced as far back as 1897.

However, it was "not until 1912 did public health in its broad aspects receive the attention of the Medical Department. In that year, a Commission was appointed to report on the establishment of a Sanitation Department, and in 1913 a Sanitation Branch

9/ *Ibid.*, p. 26.

10/ *Ibid.*, p. 25.

11/ Government of Ceylon, *The Ten-Year Plan* (Colombo, National Planning Council, 1959), p. 10.

of the Medical Department was formed under the charge of a Sanitation Commissioner and staffed with about half a dozen Sanitation Officers later called Medical Officers of Health. Owing to the outbreak of World War I and the limited personnel available, nothing more than a very elementary type of public health service was possible. This service addressed itself to the problems of sanitation and the control of communicable diseases. An important development, however, of the early public health service was the inauguration in 1916 of a Hookworm Campaign with the co-operation of the Rockefeller Foundation. This Campaign despite considerable opposition in its early stages was a great success. It demonstrated effectively the desirable results of public health work and the need to incorporate in the public health programme the then new aspect of personal hygiene. This led to the inauguration in 1926 on an experimental basis, of the Health Unit at Kalutara and subsequently of 8 other Health Units located in different provinces of the Island. Each Health Unit had a defined area of operation within which it carried out intensive health activities consisting of health surveys, health education, tabulation and study of vital statistics, maternity and child health work, school health work, sanitation and control of communicable diseases".^{12/}

The construction of roads and the railway leading to better transport facilities would certainly have played a part in facilitating relief to areas of food shortages and scarcities. In addition, the development of transport would have contributed to the general economic and social progress. The joint and cumulative effect of all these measures was successful in effecting a gradual reduction in the death rate from a level of well over 30 in the pre-1920 period to a level of about 20 in the 1940-1946 period.

4. 1946-1950 to 1970-1974

The quinquennium 1946-1950 ushered in a new era for mortality in Sri Lanka. The absolute number of deaths declined from an annual average of about 136,000 during 1943-1946 to about 95,000 on the average *per annum* during 1947-1950 — a decline of 30 per cent despite an increase in population. The crude death rate, declined from an average of 20.7 during 1943-1946 to an average of 13.0 during 1947-1950 or by about 37 per cent. In fact, the greatest fall in the absolute number of deaths and in the

^{12/} Government of Ceylon, *Six-Year Programmes of Investment 1954-55 to 1959-60* (Colombo, Planning Secretariat, 1955), pp. 379-380.

crude death rate took place between 1946 and 1947, the number of deaths declining by about 27.5 per cent and the crude death rate by 29.2 per cent. "The estimated expectation of life at birth increased from 43 years in 1946 to 52 in 1947. The gain achieved in this one year had taken half a century in most Western countries."^{13/} This amazing decline in mortality which coincided with the country's anti-malaria programme has been commented on by WHO as an "unparalleled achievement in world demography"

The post-1946 mortality experience of Sri Lanka has been repeated in a number of developing countries of the world since then, and these unprecedented declines in the death rates have become the subject of controversy both within demographic and medical circles. However, Sri Lanka has become a test case for this debate since the country has relatively reliable vital statistics and other ancillary data over the relevant period. There are two aspects to the controversy in respect of the mortality decline since the Second World War. The first relates to the magnitude of the decline, and the other to the factors contributing to this decline.

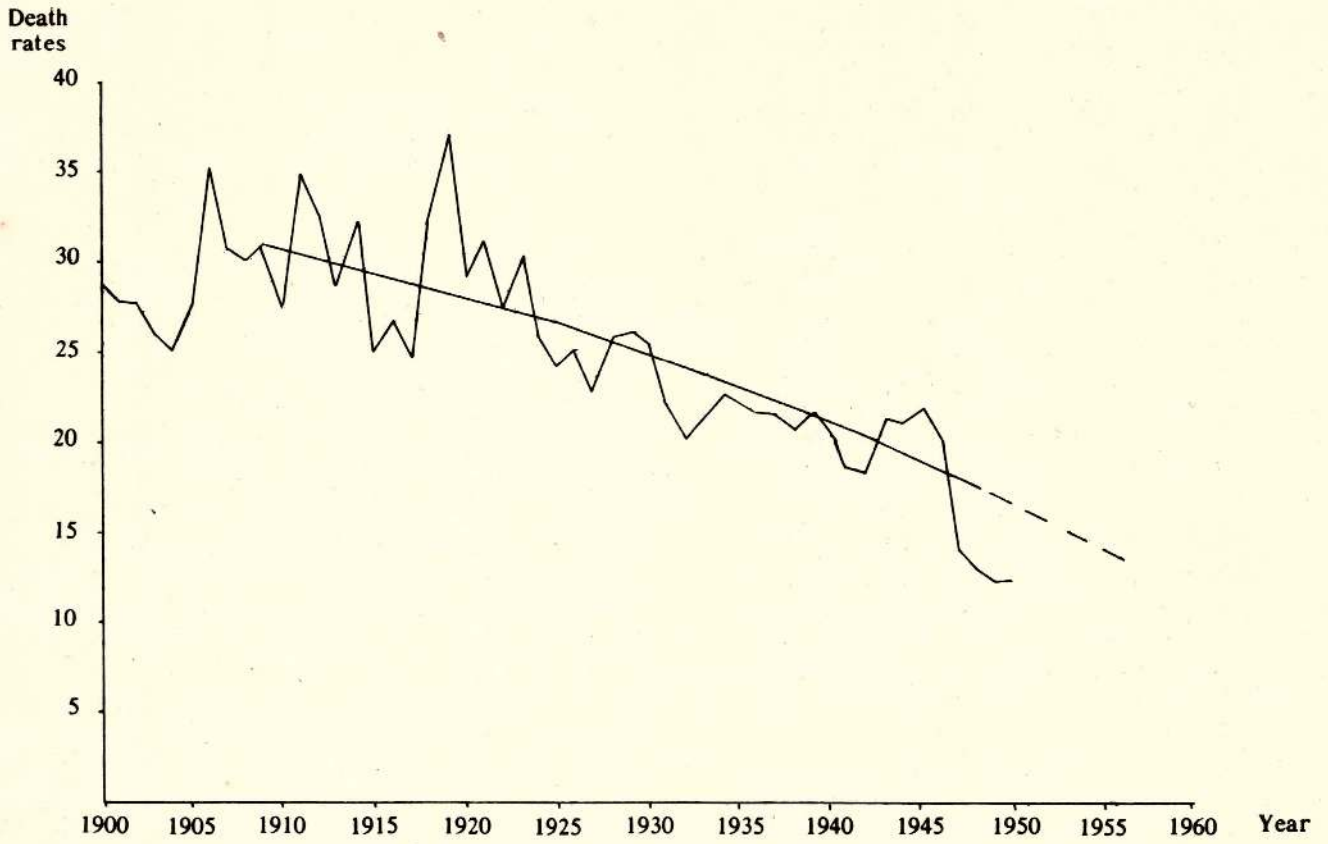
In regard to the first aspect, it has been argued by Gray on the basis of five-year moving averages of the annual crude death rates over the period 1925 to 1960 and the linear trend of mortality between 1925 and 1945, that the death rate declined gradually prior to 1945 and that in the immediate period after the Second World War the crude death rate fell dramatically and there was a deviation from the pre-war mortality trend^{14/}. Collumbine in an exhaustive study of mortality trends in Sri Lanka remarked that "the general death rate has fallen precipitously".^{15/} However, Frederiksen has maintained that the decline in mortality was merely a continuation of pre-war trends which were interrupted by war-time shortages of food.^{16/} Jones and Selvaratnam have also pointed out that "the death

^{13/} William Petersen, *Population* (2nd ed.) (New York, The MacMillan Company, 1972), pp. 560-562.

^{14/} R.H. Gray, "The decline of mortality in Ceylon and the demographic effects of malaria control" in *Population Studies* (London), vol. XXVIII, No. 2, July 1974, p. 205.

^{15/} H. Collumbine, "An analysis of the vital statistics of Ceylon" in *The Ceylon Journal of Medical Science*, (Colombo), vol. VII, parts 3 and 4, December 1950, p. 245.

^{16/} H. Frederiksen, "Malaria control and population pressure in Ceylon", *Public Health Reports*, vol. 75, 1960, pp. 865-868; and "Determinants and consequences of mortality trends in Ceylon", *Public Health Reports*, vol. 76, 1961, pp. 659-663.



Source: N.K. Sarkar, *The Demography of Ceylon* (Colombo, Ceylon Government Press, 1957), p. 123.

Figure 12. Death rate and its trend, 1900-1950

rate in 1946 was well above the trend line for the 1910-1946 period, a period during which there had already been substantial declines in the death rate and therefore a part of the sharp decline between 1946 and 1948 was a return to the trend line rather than a radically new departure from historical mortality conditions"^{17/} (see figure 12). This view is also supported by Meegama who said that "to concentrate on the fall in the death rate between 1946 and 1947 obscures the fact that between 1937 and 1942 death rates had already fallen substantially, both in the endemic and non-endemic years, to levels not attained before"^{18/}.

It must, however, be mentioned that when viewed in relation to the downward trend of the death rate which occurred from 1939 to 1942, the drop to 14.0 in 1947 does not seem so spectacular. A definite downward trend in the death rate is noticeable from 1939 until 1942. The rate then rose to 21.5 in 1945 and stood at 19.8 in 1946 due to a minor epidemic of malaria. There were 12,587 deaths from malaria in 1946 compared with 8,539 in 1945. The fall in 1947 was therefore from an "abnormal" epidemic year. If there was no epidemic, the death rate would have been about 18.0 and the fall would have been only by 4.0 points instead of the actual fall of 5.8 points. A more correct statement would be that the rate fell from 18.1 in 1942 to 14.0 in 1947 or by 23 per cent in five years. Also the quinquennial averages calculated for the periods 1938-1942 and 1943-1947 are 20.0 and 19.4 respectively showing only an insignificant drop.

Even if we succeed in depriving the sharp drop in the death rate from 19.8 in 1946 to 14.0 in 1947 of the sensation that has been ascribed to it, the fact remains that in 1947 the death rate reached a new low, very much below what it would have been if it only followed the earlier trend. The year 1947 also commenced a new chapter in mortality in that the violent fluctuations that were characteristic of the earlier periods were to be eliminated although they had been somewhat reduced during the period 1936-1946. Since 1947 the downward trend has continued with only minor fluctuations.

The period 1946-1954 may be regarded as a period in which the mortality decline was more rapid than in the earlier periods, the average decline in the crude death rate being 0.87 points per

year compared to 0.41 points per year in the period 1916-1945. Since 1955 the crude death rate has continued to decline at a much slower pace. The rate has now reached a new low at which it continues to remain more or less unchanged except for minor random fluctuations. The period since 1955 is one in which the fluctuations are minor and negligible compared to the earlier violent fluctuations, and in which epidemics have been brought under almost complete control.

The second aspect of the controversy in regard to Sri Lanka's mortality experience during the second half of the 1940s concerns the underlying factors contributing to this decline. As noted earlier, the spectacular decline in mortality which took place in Sri Lanka between 1946 and 1947 coincided with an island-wide intensive DDT campaign against malaria which hitherto had been the chief cause of morbidity and mortality in the country. Hence it has been argued by Collumbine^{19/}, Abhayaratne^{20/} and Newman^{21/} that the control of malaria was the major factor responsible for the steep decline in the death rate. Newman emphasized both the direct and indirect effects of malaria on mortality rates, particularly the reduced incidence of other insect-borne diseases and especially the mitigation of the debility that malaria brings to those it does not kill.^{22/} On the basis of his analysis based on a linear regression model relating the absolute decline in average crude death rates to the prevalence of malaria as measured by the spleen rate, Newman concluded that malaria eradication played a major role in accelerating the rate of increase in population after the war. "The antimalaria campaign is estimated to have contributed 60% of the rise in the rate of population growth since the war, resulting in a population size that, by the end of 1960 was a million larger than it otherwise would have been"^{23/}

The validity of Newman's conclusion has been questioned by other analysts, notably Frederiksen.^{24/}

^{19/} H. Collumbine, *loc.cit.*

^{20/} O.E.R. Abhayaratne, "The influence of malaria on infant mortality in Ceylon", *Ceylon Journal of Medical Science*, December 1950, vol.VII, part II, pp. 33-54.

^{21/} Peter Newman, *Malaria Eradication and Population Growth with Special Reference to Ceylon and British Guiana*, (Ann Arbor, School of Public Health, University of Michigan, 1965).

^{22/} *Ibid.*, p.78. "Malaria is such a debilitating disease that it has very marked effects on lowering resistance to other diseases, not merely in a long-run sense, but in day-to-day battles against infection".

^{23/} *Ibid.*, p.69.

^{24/} H. Frederiksen, *loc.cit.*

^{17/} Gavin W. Jones and S. Selvaratnam, *Population Growth and Economic Development in Ceylon* (Colombo, Hansa Publishers, 1972), p. 23.

^{18/} S.A. Meegama, "Malaria eradication and its effects on mortality levels" *Population Studies*, vol. XXI, No. 3, November 1967, p. 226.

and Meegama. ^{25/} Frederiksen has shown that the percentage decline in the death rate between 1946 and 1947 was about the same in malarial and non-malarial zones within the country and postulated that this decline was "associated with the development of the economy and a rise in the level of living" ^{26/} Meegama has argued that "There is no doubt that anaemic conditions induced by malaria increased considerably the chance of death from other diseases, but to explain the entire decline in the death rate during this period as being due to malaria eradication may be somewhat of an exaggeration. Other changes which took place during this period may also have played a major part in bringing down mortality levels". ^{27/} He argued that mortality declines also occurred in 1947 in certain non-malarious areas in which there had been no eradication campaign and little new hospital construction apparently as a result of improvements in food supplies following the severe shortages of the war period. He also compared situations in Sri Lanka and Guatemala and concluded that although both countries had malaria eradication programmes, the much more rapid fall of mortality in Sri Lanka was due to the existence of rural hospitals and maternity homes, para-medical services and the distribution of free milk, whereas these favourable conditions were either absent or much less developed in Guatemala. In his view the decline of the great debilitator did not by itself lead to a decline in deaths from other diseases as sometimes believed.

In a recent study using a multiple regression model to correlate the proportional decline in district mortality with the prevalence of malaria, Gray ^{28/} estimated that the malaria control programme contributed "approximately 23 per cent of the total national post-war decline of mortality in Ceylon, largely through the reduction of excess mortality in the more malarious areas". His analysis also showed that changes in the distribution of health services cannot account for the excessive fall of mortality observed in the more malarious

districts and that improvements in health services, nutrition, and economic development contributed individually indeterminate amounts to the over-all mortality decline.

The foregoing discussion, however, point out that most analysts are agreed that malaria was virtually eliminated as a cause of death in Sri Lanka ^{29/} and that malaria eradication was only one of the causes for the sharp decline in mortality during the years following the Second World War. They nevertheless hold divergent views on the extent of its influence, and "the differences among them are interesting for they highlight the difficulties in interpreting what at first appeared to be a simple cause-effect relation" ^{30/}

Further reductions in the death rate that have followed the rapid decline after 1947 may be attributed to the use of powerful chemotherapeutic drugs and antibiotics in medical treatment and to further improvements in medical and health facilities. Considerable improvement in maternal and child care services have led to the reversal of the earlier higher mortality among females, particularly in the reproductive ages. The large proportion of all births, nearly 80 per cent, occurring in institutions or under medical supervision accounts for the low level of maternal mortality now prevailing in the country. "Death rates have already declined to low western levels and have remained more or less stabilised at this level over a number of years. Any substantial decline in these rates will not occur in the future, and even small decreases will require heavy investment in housing, sanitation, medical care and other social welfare programmes." ^{31/}

C. MORTALITY BY AGE AND SEX

The crude death rate in Sri Lanka has now reached a very low level and is even lower than the rate obtaining in many of the developed countries. For example the crude death rate in Sweden in 1971 was 10.2 deaths per 1,000 persons compared with 7.6 in Sri Lanka. This does not, however, mean that

^{29/} Since 1968, there has been a resurgence of malaria morbidity due to a number of factors, amongst them being vector resistance to DDT, failure of the community to take a full course of treatment, unfavourable environmental conditions such as drought and migration of population to malarious areas for gemming.

^{30/} William Petersen, *op.cit.*, p.562.

^{31/} S. Selvaratnam and S.A. Meegama, "Towards a population policy for Ceylon", *Marga*, vol. 1 No. 2, 1971.

^{25/} S.A. Meegama, *loc.cit.*

^{26/} H. Frederiksen, *loc.cit.* It has, however, been observed: "Undoubtedly, there was an improvement in the economic situation and amelioration of war-time food shortages after 1946, though it is difficult to ascertain how much this contributed to the mortality transition". See R.H. Gray, *loc.cit.*, p. 221.

^{27/} S.A. Meegama, *loc.cit.* p. 208. There has also been a discussion between Newman and Meegama over the relative importance of malaria eradication in bringing about the observed decline in Sri Lanka's death rates. See *Population Studies*, vol. XXIII, No. 2, July 1969.

^{28/} R.H. Gray, *loc.cit.*

mortality in Sri Lanka is lower than in Sweden because the crude death rate is influenced by the age structure of a population and is not a good index for comparison of mortality levels. The incidence of deaths is not uniform throughout all ages. Elderly persons are subject to greater risks of death than the young. Also, infants under 1 year of age are subject to a greater risk of death than children of older ages. To measure the risk of death at each age or age period, an age-specific death rate is computed as the number of deaths of the age or age group per 1,000 persons in that age or age group. Typically, the death rate starts at a high peak immediately after birth and falls to a minimum around the early teens and then rises, slowly at first and with increasing rapidity as age advances. Age-specific death rates are usually calculated separately for each sex.

A comparison of the age-specific deaths rates for Sri Lanka with those of Sweden in 1971 (table 96 and figures 13 and 14) shows that in every age group the rates in Sweden are lower than the corresponding rates in Sri Lanka. The explanation for the lower crude death rate in Sri Lanka is the "young" population; Sri Lanka's population has a higher proportion of young persons while Sweden's

population has a larger proportion of old people. Hence there are relatively more deaths in Sweden, and if it had the same age distribution as Sri Lanka its crude death rate would have amounted to only 4.1 per 1,000 persons.

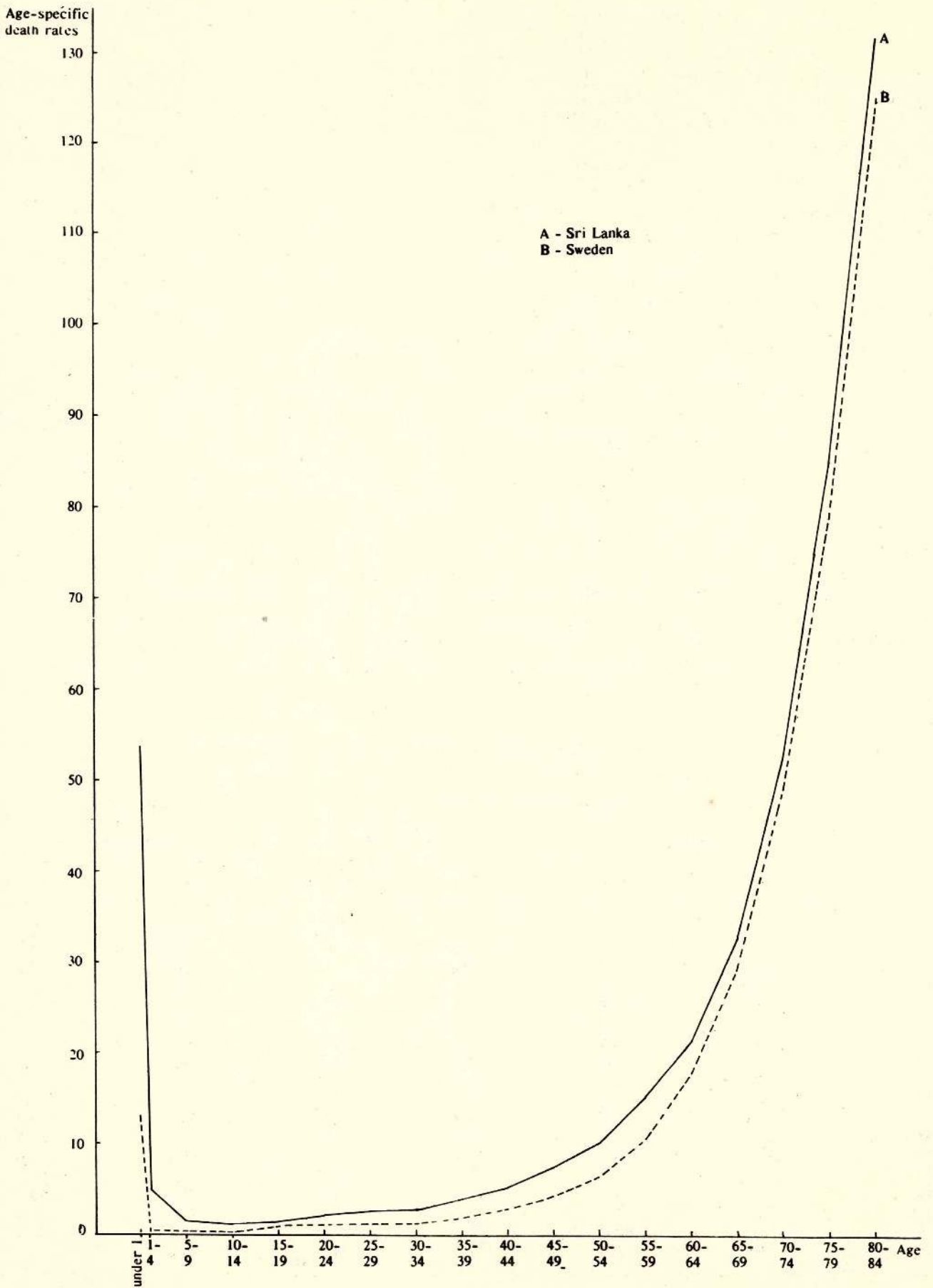
The changes in the risks of death at different ages are reflected in the age-specific death rates presented in table 97 for selected three-year periods. These three-year periods have been chosen so that the population census taken in the middle year of each of the three-year periods will provide the population by sex and age which are necessary for the computation of age-specific death rates. Annual averages for the three-year periods were computed so that any random fluctuation in deaths from year to year would be smoothed out. For the year 1971, however, data for a single year have been used as the figure for 1972 were not available at the time of writing.

Table 98 shows the percentage decline in mortality over the period 1920-1922 to 1971. Substantial declines are in evidence for all age groups but children over 1 year of age and adults under 50 have benefited more than the older ages. Declines in excess of 75 per cent have occurred at ages under

Table 96. Age-specific death rates of Sri Lanka and Sweden in 1971

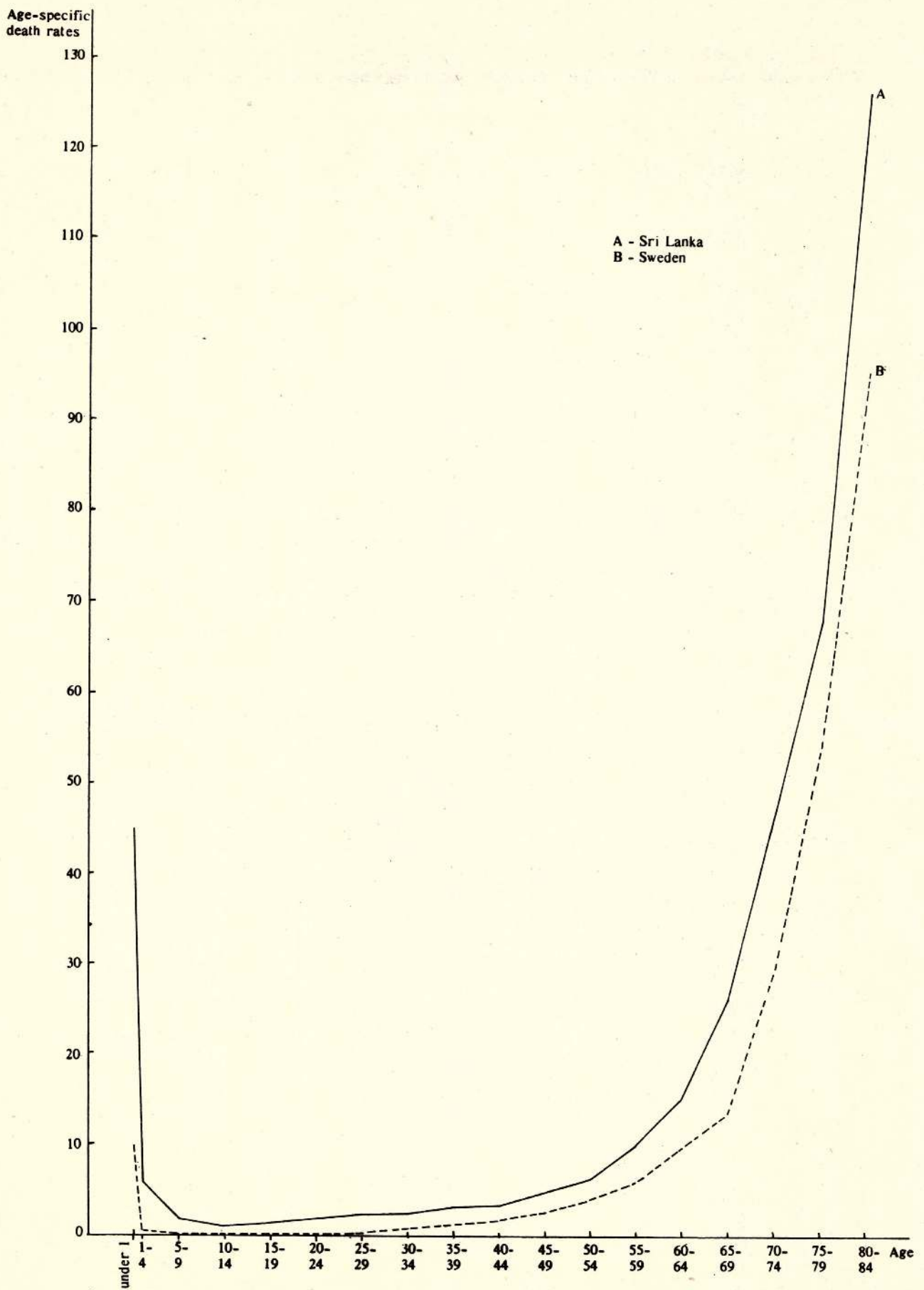
Age	Age-specific death rates				Ratio of Swedish rate to Sri Lanka rate	
	Sri Lanka 1971		Sweden 1971		Male	Female
	Male	Female	Male	Female		
Under 1	54.0	44.9	13.1	9.9	24.3	22.1
1-4	5.1	6.0	0.5	0.4	9.8	6.7
5-9	1.5	1.7	0.4	0.2	26.7	11.8
10-14	1.1	1.0	0.4	0.3	36.4	30.0
15-19	1.5	1.4	1.0	0.4	66.7	28.6
20-24	2.2	1.8	1.1	0.4	50.0	22.2
25-29	2.6	2.4	1.1	0.4	42.3	16.7
30-34	2.8	2.5	1.4	0.8	50.0	32.0
35-39	4.1	3.2	2.0	1.1	48.8	34.4
40-44	5.4	3.4	3.0	1.7	55.6	50.0
45-49	7.6	4.7	4.4	2.6	57.9	55.3
50-54	10.4	6.3	6.7	4.0	64.4	63.5
55-59	15.3	9.9	10.7	5.9	69.9	59.6
60-64	21.3	15.3	18.0	9.5	84.5	62.1
65-69	32.6	26.3	29.7	15.8	91.1	60.1
70-74	52.6	47.1	49.2	29.2	93.5	62.0
75-79	85.4	68.0	79.2	53.6	92.7	78.8
80-84	131.9	126.3	125.0	94.7	94.8	75.0

Sources: Rates for Sri Lanka computed from registered births and population census data; Sweden's rates have been obtained from United Nations, *Demographic Yearbook 1974* (Sales No. E/F. 75. XIII.1), table 26.



Source: Table 96.

Figure 13. Age-specific death rates of Sri Lanka and Sweden in 1971 (male)



Source: Table 96.

Figure 14. Age-specific death rates of Sri Lanka and Sweden in 1971 (female)

Table 97. Age-specific death rates by sex, Sri Lanka, selected periods 1920-1922 to 1971

Age	1920 - 1922		1945 - 1947		1952 - 1954		1962 - 1964		1971	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Under 1	226.9	211.3	147.1	133.6	96.8	78.4	64.6	53.1	54.0	44.9
1-4	46.7	55.0	24.9	30.0	17.1	20.5	8.3	9.8	5.1	6.0
5-9	15.1	16.8	4.3	5.5	3.1	3.7	2.0	2.3	1.5	1.7
10-14	9.5	10.6	4.2	5.2	1.4	1.4	1.2	1.1	1.1	1.0
15-19	9.3	10.5	4.9	6.6	1.6	2.2	1.6	1.6	1.5	1.4
20-24	10.4	14.7	5.5	9.0	2.2	3.7	1.9	2.6	2.2	1.8
25-29	12.0	17.2	6.4	10.6	2.5	4.5	2.3	3.1	2.6	2.4
30-34	12.9	19.3	7.8	11.7	2.9	4.9	2.4	3.3	2.8	2.5
35-39	16.9	19.8	9.4	11.6	3.9	5.4	3.5	4.0	4.1	3.2
40-44	20.5	20.4	11.8	11.9	4.8	5.3	4.4	4.2	5.4	3.4
45-49	25.6	21.1	15.4	13.0	6.8	6.4	6.7	5.7	7.6	4.7
50-54	31.7	25.3	19.8	15.7	9.4	8.4	9.0	7.1	10.4	6.3
55-59	37.6	36.8	25.0	21.5	14.6	12.3	13.9	11.5	15.3	9.9
60-64	47.5	54.5	34.2	31.5	21.5	18.3	19.5	16.6	21.3	15.3
65-69	70.6	80.4	49.8	46.9	33.1	31.0	35.4	33.1	32.6	26.3
70-74	112.0	127.0	71.5	68.9	53.4	50.1	55.7	52.9	52.6	47.1
75-79	166.7	192.9	105.2	105.3	76.4	75.5	84.1	81.6	85.4	68.0
80-84	229.8	260.8	159.8	186.2	125.6	138.7	128.0	132.5	131.9	126.3

Source: Computed from registered births for the respective years and population census data for census years adjusted to midyear.

Table 98. Annual rates of decline in age-specific death rates during selected periods, Sri Lanka, 1920-1922 to 1971

Age	Annual rates of decline (percentage)									
	percentage decline 1920-1922 to 1971		1920-1922 to 1945-1947		1945-1947 to 1952-1954		1952-1954 to 1962-1964		1962-1964 to 1971	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Under 1	76.2	78.7	1.4	1.3	4.9	5.9	3.3	3.2	2.1	1.9
1-4	89.1	89.1	1.9	1.8	4.5	4.5	5.2	5.2	4.8	4.9
5-9	90.1	89.9	2.9	2.7	4.0	4.7	3.1	3.8	3.1	3.3
10-14	88.4	90.6	2.2	2.0	9.5	10.4	1.4	2.1	1.0	1.1
15-19	83.9	86.7	1.9	1.5	9.6	9.5	0.0	2.7	0.8	1.6
20-24	78.8	87.8	1.9	1.6	8.6	8.4	1.5	3.0	-2.0	3.9
25-29	78.3	86.0	1.9	1.5	8.7	8.2	0.9	3.1	-1.6	2.8
30-34	78.3	87.0	1.6	1.6	9.0	8.3	1.7	3.3	-2.1	3.0
35-39	75.7	83.8	1.8	1.7	8.4	7.6	1.0	2.6	-2.1	2.5
40-44	73.7	83.3	1.7	1.7	8.5	7.9	0.8	2.1	-2.8	2.4
45-49	70.3	77.7	1.6	1.5	8.0	7.3	0.2	1.1	-1.7	2.2
50-54	67.2	75.1	1.5	1.5	7.5	6.6	0.4	1.6	-2.0	1.4
55-59	59.3	73.1	1.3	1.7	5.9	6.1	0.5	0.7	-1.3	1.7
60-64	55.2	71.9	1.1	1.7	5.3	6.0	0.9	0.9	-1.2	1.0
65-69	53.8	67.3	1.2	1.7	4.8	4.8	-0.7	-0.8	1.0	2.6
70-74	53.0	62.9	1.5	1.8	3.6	3.9	-0.4	-0.6	0.7	1.4
75-79	48.8	64.7	1.5	1.8	3.9	4.0	-1.0	-0.8	-0.2	2.0
80-84	42.6	51.6	1.2	1.1	3.1	3.6	-0.2	-0.5	-0.4	0.6

Source: Computed from the data of table 97.

40 in the case of males and under 55 for females. The maximum decline of 90 per cent in the case of males has been in the 5-9 age group while in the case of females the maximum decline of 90.6 per cent has been in the 10-14 age group. For both the sexes, the extent of the decline in the older age groups diminish gradually with advancing age. Declines in excess of 50 per cent are evident up to age 75 for males and 85 for females.

It will also be observed that between 1921-1922 and 1971, the mortality declines for females have been greater than that for males at all age intervals except the 1-4 and 5-9 age groups. The greatest differences are in the childbearing ages of 20-44. This could be attributed to the large reductions in maternal mortality effected in recent years.

Although substantial declines have been achieved during the period of half a century from 1921, the declines have not been uniform over the period. It will be appropriate to consider the declines between 1921-1922 to 1971 in four phases: 1921-1922 to 1945-1947; 1945-1947 to 1952-1954; 1952-1954 to 1962-1964; and 1962-1964 to 1971. Since these periods are of unequal length the percentage rates of decline for these periods have been reduced to average annual rates for the respective periods and shown in table 98. An important feature revealed by the table is that the decline in the period 1945-1947 to 1952-1954 immediately following the Second World War has been very much greater than in either the preceding or the following periods.

Further, there are also significant differences in the patterns of the decline for the two sexes during each of these periods as well as contrasts in the patterns of the decline at different ages. During the first period, 1921-1922 to 1945-1947, the declines for females are lower than the decline for males between the ages of 1 and 50 and higher at other ages except ages 80-84. The highest rate of decline occurred in the 5-9 age groups for both sexes. During the second period, 1945-1947 to 1952-1954, the rates of decline at ages over 10 and under 50 are about four times as great. At the other ages, the rates during the second period are very much greater than during the first period. However, in contrast to the first period, the rate of decline for children under 10 are only about half the rate at the higher ages. The difference between the rates of decline for males and females are less significant during this period with female rates of decline being lower only in the age range 15-54.

During the third period, 1952-1954 to 1962-1964

declines in respect of females are higher than that of males at all ages except under 1 year. The largest gains have been under age 10. In fact the male gains at adult ages have been insignificant although female death rates at these ages have continued to decline substantially. It will also be noted that there were some increases in the death rates at ages above 65 for both sexes. During the last period, 1962-1964 to 1971, male death rates above age 20 have risen while female death rates have fallen. Children under 10 have continued to benefit by declining death rates.

The changes in the age-sex-specific death rates during the 50-year period may broadly be summarized as follows:

(a) Death rates of children between 1 and 10 years of both sexes have shown continuous declines during the entire period 1921-1922 to 1971.

(b) The greatest declines occurred in the period 1945-1947 to 1952-1954.

(c) Female death rates declined substantially during the last two periods while male death rates have risen. The larger female gains in age-specific death rates observed in the entire period 1921-1922 to 1971 are therefore primarily due to the large decline in female mortality during the period 1952-1954 to 1971.

Although very large declines in the age-specific death rates have been registered in Sri Lanka over the years, a comparison of these rates with those of an advanced European country like Sweden shows that a large gap still exists and considerable improvement is still possible. The last two columns of table 96 show the age-specific death rates for Sweden as a percentage of the corresponding rate for Sri Lanka in the year 1971.

It may be observed that in all age groups, the Swedish age-specific death rates are lower than the corresponding rates for Sri Lanka. This shows that there is scope for further improvement of Sri Lanka's age-specific death rates. Also the lower percentages for females show that the scope for improvement of the female rates is greater than for males despite the greater gains. It may be seen that in the early childhood ages the Swedish age-specific death rates are only a fraction of the corresponding Sri Lanka rates. The disparity is most marked in the 1-4 age group in which the Swedish rate for males is only about a tenth, and for females is about a fifteenth of the Sri Lanka rate. Swedish rates for males are less than 50 per cent of the Sri Lanka

rates for ages up to 35 in the case of males and 45 in the case of females.

D. INFANT MORTALITY

1. Over-all trends

In all populations, infants under one year of age are subject to much greater death risks than persons at any higher age except old age. For this reason it is customary to calculate an infant mortality rate defined as the number of infants, among each 1,000 infants born alive during a year, who die before reaching their first birthday.^{32/} The infant mortality rates for all years from 1880 to 1974 are shown in annex III, table 1. The quinquennial averages from 1881 to 1970 and for the four year period 1971 to 1974 are shown in table 99.

It will be seen from table 99 and figure 15 that there was a gradual upward trend in the infant mortality rates until about 1915, which as in the case of the crude death rates, has most certainly been due to improvement in death registration. During the quin-

Table 99. Infant mortality in Sri Lanka, average rates for quinquennial periods 1881 to 1974

Period	Infant mortality rate
1881-1885	154
1886-1890	158
1891-1895	169
1896-1900	168
1901-1905	171
1906-1910	189
1911-1915	201
1916-1920	190
1921-1925	190
1926-1930	175
1931-1935	183
1936-1940	160
1941-1945	131
1946-1950	101
1951-1955	75
1956-1960	63
1961-1965	54
1966-1970	51
1971-1974	47

Source: Annex III, table 1.

^{32/} For an accurate calculation of this rate, infant deaths should be allocated to the proper year's cohort of births. As death statistics do not provide the requisite information for such allocation, an approximation acceptable for most purposes is calculated by dividing the number of infant deaths in a year by the total number of live births during that year. For difficulties in the accurate measurement of infant mortality in Sri Lanka, see N.K. Sarkar, *op.cit.*, p. 125.

quennium 1911-1915 the rate averaged 201 per 1,000 live births, which is the highest recorded figure for any quinquennium. It may therefore be assumed that up to this period the infant mortality rate fluctuated around 195 per 1,000 live births. Thereafter the rate declined following more or less the same trend as the crude death rate. The decline was gradual until the quinquennium 1941-1945 when it stood at 131. It registered a sharp drop from 131 in the quinquennium 1941-1945 to 101 in the quinquennium 1946-1950.^{33/} Thereafter the decline was again gradual but continuous. Another striking feature is that the violent fluctuations that prevailed prior to 1946 are almost totally absent after 1946.

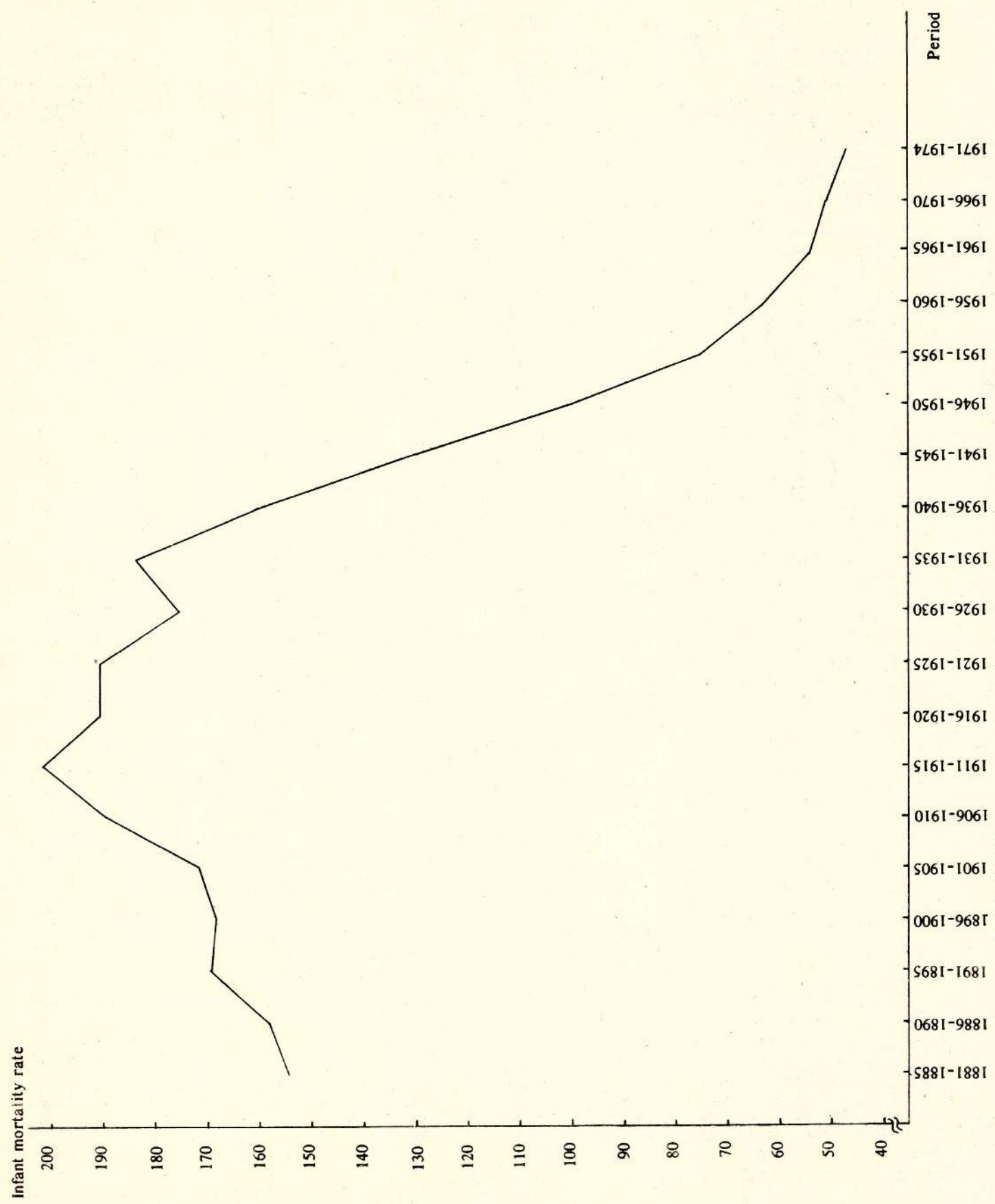
2. Age at infant death

The infant mortality rates per 1,000 live births classified by age at death of the infant at five year intervals commencing from 1921 are shown in table 100. The lower part of the table shows the percentage decreases in the rates during the periods 1921-1946, 1946-1966 and also the period 1921-1966 as a whole.

It will be seen from table 100 that during the period 1921-1946 the death rates for under seven days have registered the largest decline (of 44 per cent) while the death rates at older ages have declined to much smaller extents. In the period 1946-1966, however, death rates at the ages above seven days have declined to somewhat greater extents than the rate for under seven days. In both periods females have registered greater proportionate declines than males. If the period 1921-1966 is considered as a whole, the reductions in the rates at different ages has been more or less uniform for each sex although females have achieved greater proportionate reductions.

In the countries of Northwestern Europe and the United States of America, the decline in neo-natal mortality (i.e. mortality occurring within the first four weeks) has been much less than that of post neo-natal mortality. A large proportion of all infant deaths, nearly 60 per cent in Sri Lanka, occur within the first 30 days of life. This is attributable not only to exogenic and environmental factors after birth but also to endogenous factors such as birth injuries and congenital factors. The endogenous factors are relatively less important in the post neo-natal period when exogenous factors dominate and hence mortality during this period is more amenable to environmental and medical controls. This is the explanation

^{33/} Sri Lanka's infant mortality rate dropped below 100 (92) for the first time in 1948 and below 60(58) in 1959.



Source: Table 99.

Figure 15. Infant mortality in Sri Lanka, average rates for quinquennial periods, 1881 to 1974

Table 100. Infant mortality rates by age at death, Sri Lanka, 1921-1966
(infant deaths per 1,000 live births)

Year	Male					Female						
	Under 7 days	7-30 days	1-3 months	3-12 months	Total under 1 years	Under 7 days	7-30 days	1-3 months	3-12 months	Total under 1 year		
1921	90.7	—	57.4	—	48.3	196.4	78.0	—	56.4	—	53.1	187.5
1926	89.9		50.6		40.5	181.0	76.5		47.7		42.9	167.1
1931	81.4		47.3		37.3	165.9	66.4		44.4		38.7	144.5
1936	76.3		55.3		41.1	172.7	64.0		52.2		41.9	158.1
1941	58.8		44.4		33.0	136.2	47.7		40.9		33.8	122.4
1946	50.8	30.6	23.4		40.3	145.1	43.2	26.6	23.1		42.8	135.8
1951	37.2	16.7	13.7		21.4	89.0	27.5	14.2	12.2		20.9	74.7
1956	32.3	13.0	10.7		16.4	72.3	25.1	10.6	9.3		15.5	60.5
1961	25.4	9.4	7.8		13.4	55.9	20.2	8.5	6.8		12.7	48.1
1966	27.1	9.2	8.2		14.5	59.1	20.6	8.0	7.0		13.5	49.1
Percentage declines												
1921-1946	44.0	—	5.9	—	16.6	26.1	44.6	—	11.9	—	19.4	27.6
1946-1966	46.7	69.1	65.0		64.0	59.3	52.3	69.1	69.7		68.5	63.8
1921-1966	70.1	—	69.7	—	70.0	69.9	73.6	—	73.4	—	74.6	73.8

Source: Registrar-General's Reports.

for the greater proportionate reduction of post neonatal mortality in the West. The trend in Sri Lanka during the period 1946-1966 was somewhat similar to the pattern followed in the West with post neonatal death rates showing the greater declines.

3. Causes of infant deaths

Statistical information relating to causes of infant mortality for earlier years are not available. However, a fair idea could be obtained from the qualitative statements made in relevant reports of the day. The important factors appear to have been the lack of trained midwives, poor nutrition and unhealthy traditional methods of delivery and bad feeding practices. In 1879, the principal civil medical officer commenting on the high infant mortality levels on the estate sector noted.

“the excessive mortality among children is due to bad midwifery and the absence of medical assistance at hand in case of difficulty, imperfect tying of the umbilical cord of the child so that it not infrequently bleeds to death, the habit of denying food to the woman and child for three days after birth”.^{34/}

The situation in the urban areas was also not

^{34/} *Medical Wants of the Coffee Districts*, Sessional Paper 5 of 1879. Colombo, 1879, p. 182. Also the Assistant Government Agent of Hambantota District noted in 1936 that “when the woman is delivered of child, a dirty areca nut cutter is used for cutting the cord. The infant is laid on the bare floor uncovered and unattended until the midwife has attended to the mother”. Quoted in S.A. Meegama, “The decline in maternal and infant mortality and its relation to malaria eradication”, *Population Studies*, vol. XXIII, No. 2, 1969, p. 293.

encouraging. In a survey of the mortality patterns in Colombo city in 1906, the registrar of the Ceylon Medical College observed that one of the important causes of infant mortality was tetanus neonatorum. “The cause of this tetanus is due to infection of the navel after separation of the umbilical cord after birth. The infection is due to dirt and should therefore be preventable”.^{35/} In regard to the bad feeding practices, a medical officer attached to Colombo Municipality noted that there was a widely prevalent custom among Sinhalese, Tamils, Moors and Malays, whereby the new-born infant was given castor oil and sugar, or cow ghee and sugar, during the first three days. He attributed many cases of digestive disturbance to this practice and pointed out that this custom had an injurious effect, in as much as the children were not put to the breast during these three days, the secretion of the milk was thereby much interfered with.^{36/} The prevalence of this type of practice coupled with insufficient pre-natal care of the mother resulted in very high infant mortality rate in the early days of life.^{37/}

^{35/} *Report on the Sanitation of Colombo*, Sessional Paper 16 of 1907, Colombo, 1907. p. 54.

^{36/} *Report of the M.O.H. Colombo, 1911*, Sessional Paper 39 of 1912, Colombo, 1912, p. 52.

^{37/} In 1925, the M.O.H. Colombo observed: “It is evident that if infants die within a few days or hours of birth, or even if dying later, show unmistakable signs of being unequal to the calls of bare physical existence, that there must be something more than internal conditions or food or management which is working to their hurt. The explanation is clearly to be found in ante-natal conditions” in *Report of the M.O.H. Colombo, 1925*, Sessional Paper 26 of 1926, Colombo, 1926, p. 51.

Table 101. Death rates of infants per 1,000 live births by cause and age, and percentage distribution by cause, Sri Lanka, 1934-1965

Cause of death	Under 1 year										Under 1 month					1 - 12 months														
	1934	1939	1944	1950	1955	1960	1965	1950	1955	1960	1965	1950	1955	1960	1965	1950	1955	1960	1965											
	rate	percentage	rate	percentage	rate	percentage	rate	percentage	rate	percentage	rate	percentage	rate	percentage	rate	percentage	rate	percentage	rate	percentage										
All causes	173.0	100.0	165.8	100.0	135.1	100.0	81.6	100.0	71.4	100.0	56.7	100.0	46.9	100.0	34.1	100.0	33.3	100.0	34.7	100.0	29.1	100.0	22.6	100.0						
Convulsions	41.6	24.1	42.3	25.3	32.7	24.2	16.6	20.3	12.6	17.6	8.0	14.0	6.3	11.9	7.1	15.1	5.4	12.8	3.5	10.2	3.0	9.0	7.2	24.6	4.5	20.0	3.3	16.7		
Congenital Debility	35.3	20.4	34.2	20.6	21.9	16.2	17.4	21.4	12.1	16.9	7.6	13.3	5.8	11.0	13.5	28.8	9.5	22.4	5.6	16.3	4.4	13.2	3.9	11.4	2.6	9.0	2.0	8.8	1.4	7.2
Rathe	48.7	28.1	41.1	24.8	30.7	22.8	9.7	11.9	7.7	10.8	4.3	7.6	2.9	5.6	6.1	13.1	4.7	11.2	2.5	7.3	1.6	4.9	3.6	10.2	3.0	10.3	1.8	8.1	1.3	6.8
Promaturity	12.0	7.0	14.3	8.6	16.6	12.3	14.7	18.0	16.9	23.7	16.5	29.1	16.7	31.3	14.0	29.9	16.0	37.9	15.5	45.3	15.7	47.0	0.7	2.0	0.9	3.1	1.0	4.6	5.0	
Other causes	35.3	20.4	34.0	20.5	32.1	24.5	23.2	28.4	22.1	31.0	20.3	36.0	21.5	40.2	6.2	13.1	6.7	15.7	7.0	20.9	8.6	25.9	17.0	49.0	15.4	53.0	13.3	58.5	12.9	64.3

Source: Computed from Registrar General's Reports.

The causes of infant mortality for selected years since 1934 are shown in table 101. The table gives a classification of the principal causes of death by age of the infant only since 1950 as this classification is not available for the years prior to 1950. It will be observed that among deaths under one month, deaths due to congenital debility and rathe registered sharp declines between 1950 and 1965. The rate due to convulsions declined by about 50 per cent. The rate for prematurity has on the other hand been almost static.

It is also evident from table 101 that the distribution of deaths among the various causes has also changed significantly. Deaths due to congenital debility accounted for 29 per cent of the deaths in 1950 but only 15 per cent in 1965. The proportion of deaths due to convulsions also declined from over 15 per cent in 1950 to 9 per cent in 1965.

The sharp reduction in infant mortality since 1946 has been due, besides malaria eradication, to two important medical factors. "One was the greatly improved level of curative facilities available, which would have had an effect on infant mortality at all age intervals. The other, which was due to the provision of midwifery services and maternity and child welfare centres, was mainly reflected in the decline in the neo-natal mortality rate, although it would have had an effect in lowering the rate in the later months of infancy by helping to eliminate unhealthy feeding habits."^{38/}

E. MATERNAL MORTALITY

Maternal mortality refers to deaths among mothers during or as a result of child birth. The maternal mortality rate is thus calculated as the number of female deaths attributed to complications of pregnancy, child-birth and the puerperium per thousand live births. These rates for all years from 1921 to 1973 are shown in annex III table 1. The decennial averages from 1921 to 1970 are shown in table 102.

It will be observed that during the 1920s, the maternal mortality rate averaged about 20 per thousand live births and it is likely that prior to this, the rate may have been higher. In fact, the 1891 census superintendent observed:

"The reasons for the higher female mortality in the adult age period may probably be found

^{38/} S.A. Meegama, "The decline in maternal and infant mortality and its relation to malaria eradication", *loc.cit.*, p. 297.

Table 102. Maternal death rates, Sri Lanka, 1921-1974

Year	Maternal death rate
1921-1930	19.8
1931-1940	20.1
1941-1950	12.0
1951-1960	4.4
1961-1970	2.2
1971	1.2
1972	1.2
1973	1.2
1974	1.2

Source: Reports of Registrar General on Vital Statistics.

in early marriages and consequent diminished vitality. A girl is often a mother before she herself has attained full maturity. Bearing children rapidly under unfavourable conditions she loses her youth, her strength and her life very early. There is also no doubt that mortality in child bearing is excessive. The remedies and appliances made use of in cases of child-birth by native midwives and native doctors are said to be such as science condemns as under the circumstances most hurtful, provocative of the very evils which should be combated. It is said that the ascertained rate of mortality in Ceylon is one death to forty from accouchments, against one in 185 in England. The fact that in the vast majority of the cases the women are without skilled assistance at the time of delivery and that their troubles come upon them in miserable hovels absolutely devoid of sanitary arrangements strengthen the opinion that in this is to be found a very active cause of female mortality"^{39/}.

Though there was a gradual improvement in health conditions over the years, the maternal mortality rate in the 1930s was still as high as in the 1920s due largely to unsatisfactory maternity services and shortage of trained midwives. It has also been observed that the death rate from sepsis amongst cases attended by untrained midwives was very high.^{40/} Though with the gradual improvement in

^{39/} Lionel Lee, *Census of Ceylon 1891 Vol. I: A General Report* (Colombo, 1892).

^{40/} S.A. Meegama, "The decline in maternal and infant mortality and its relation to malaria eradication", *Population Studies*, vol. XXIII, No. 2, 1969, *loc.cit.*, p. 297. Meegama observed: "In 1929, a census of midwifery services in the city revealed that there were still 46 unqualified women practising as midwives. Officials of the department paid surprise visits to these midwives to examine their bags and instruments and in good many cases found them in filthy state. The result of such conditions was a very high death rate from puerperal sepsis."

services, more deliveries were conducted in an a septic manner, some mothers would have died from sepsis resulting from infection from the insanitary surroundings in which they lived.

There was a sharp fall in maternal mortality between 1931-1940 and 1941-1950 and again between 1941-1950 and 1951-1960. The data for individual years also show that since 1950, the maternal mortality rate has shown an almost continuous downward trend and has remained stable at 1.2 since 1971. This fall in maternal mortality rate accounts for most of the large reductions in age-specific death rates which have occurred to women of the reproductive ages since 1953. The reason for this decline is the considerable improvements effected in the maternal and child health services in the country.

The chances of death from maternity at different ages (computed by relating the deaths at each age to the corresponding births) for selected years from 1954 ^{41/} to 1972 are shown in table 103.

It will be observed from table 103 that until 1962 the risk of death from maternity was lowest in the ages 20-29, slightly higher in the ages under 20 and between 30 and 34; thereafter the risk increases with age. Since 1966, the risk is lowest in the under 20 age group, thereafter increasing with advancing age.

F. MORTALITY DIFFERENTIALS

1. Sex differentials

It has been observed in most countries with reliable death statistics that females generally have a lower death rate than males. Sri Lanka, along with India and Pakistan, has often been mentioned as the notable exceptions, with higher female death rates. Although this was true of Sri Lanka until about 1963, the pattern of the sex differential in mortality has changed and since 1963 females have lower death rates than males as is evident from table 104.

The changes in mortality levels of males and females over the years is also reflected in the life expectations of the two sexes shown in table 110. It may be observed that in 1945-1947, the female life expectation at birth was lower than the male by 2.1 years. Since then the male excess has declined and

in 1971 the female expectation exceeded the males by 2.5 years.

The changes in the sex differential in the overall level of mortality as measured by the expectation of life have been the result of significant changes in the death rates of different age groups. Table 105 shows the mortality sex ratio expressed as the ratio of the female age-specific death rate in an age group to the corresponding male rate expressed as a percentage.

In the period 1952-1954, excess mortality of females was confined mainly to the early childhood ages above 1 year and the female reproductive ages, 15-44 years. These excesses accounted for the higher female mortality at all ages. The largest excesses were in the peak child-bearing age range of 30-34 years where female death rates were about 70 per cent higher than the corresponding male rates. These excesses are no doubt due to the hazard of child bearing. By 1962-1964 the female excess mortality in the reproductive age groups declined considerably and by 1971 the pattern had changed with females in these age groups having lower death rates. This change can be attributed to the large reductions in maternal mortality that have taken place over the years.

In the early childhood years, 1-4 and 5-9, however, there has been no significant change in the mortality sex ratio. Female children in these age groups continue to have higher death rates than the corresponding males. Higher female mortality in these ages has been attributed to the preference for male children and relative neglect of female children. In the absence of any other plausible explanation this has to be accepted as the most probable factor. The persistence of higher female childhood mortality implies that there has been no change in the attitude of parents to the sex preference for children. Although female children above 1 year of age have higher female mortality than males, female infant mortality is lower than male infant mortality, and is consistent with the pattern in most countries.

2. Urban-rural differentials

In order to compute death rates separately for urban and rural areas, it is necessary to relate deaths registered in each sector to the appropriate population. Some of the deaths registered in urban areas are those occurring to residents of rural areas admitted to an urban hospital for medical treatment. The changing urban boundaries present another problem in obtaining the correct population base for the

^{41/} Classification of maternal death by age of mother is not available for the years prior to 1954.

Table 103. Age-specific maternal mortality rates, Sri Lanka, 1954-1972

Age of mother	1954	1956	1958	1960	1962	1966	1969	1970	1972
Under 20	4.7	3.6	3.1	2.5	3.1	1.1	1.2	1.0	0.5
20 and under 25	3.6	2.9	2.9	2.6	2.3	1.5	1.2	1.0	1.2
25 and under 30	3.7	3.2	3.6	2.4	2.6	1.9	1.2	1.4	1.3
30 and under 35	5.0	3.9	3.8	3.1	2.9	2.2	1.7	1.5	1.3
35 and under 40	7.7	6.2	5.9	4.7	4.7	3.8	2.4	2.4	2.1
40 and under 45	9.5	9.1	8.2	6.9	4.8	6.5	2.5	2.3	3.6
45 and over	14.2	13.0	23.7	15.1	9.8	12.5	13.6	6.0	5.8

Source: Reports of the Registrar-General on Vital Statistics.

Table 104. Crude death rates by sex, Sri Lanka, 1938-1974

Year	Male	Female
1938	20.2	22.0
1941	18.3	19.4
1942	18.5	18.8
1944	21.0	21.7
1946	19.6	22.1
1947	13.8	14.9
1948	12.7	13.8
1950	12.2	13.0
1952	11.5	12.5
1954	10.1	10.7
1956	9.6	10.1
1958	9.5	9.8
1960	8.6	8.6
1961	8.0	8.0
1962	8.5	8.5
1963	8.6	8.5
1964	8.1	8.1
1965	8.6	7.8
1966	8.6	7.9
1967	8.0	7.0
1968	8.5	7.3
1969	8.7	7.6
1970	8.1	6.9
1971	8.4	7.0
1972	8.8	7.3
1973	8.5	6.9
1974	10.2	7.5

Source: Registrar-General's reports on Vital Statistics.

computation of the urban death rates. As the census provides the most reliable figures on the geographical distribution of population, three year periods centred on the census years of 1953 and 1963^{42/} have

^{42/} Comparable data for 1971, the latest census year, are not yet available.

Table 105. Mortality sex-ratios at different ages, Sri Lanka, selected years, 1952-1954 to 1971

Age	1952-1954	1962-1964	1971
All ages	107	96	82
0	84	84	83
1- 4	120	119	118
5- 9	119	111	110
10-14	106	95	93
15-19	135	101	91
20-24	170	140	81
25-29	179	134	93
30-34	168	135	88
35-39	140	116	79
40-44	109	96	62
45-49	94	86	62
50-54	90	79	61
55-59	84	83	65
60-64	85	85	72
65-69	94	93	81
70-74	94	95	90
75-79	99	97	80
80-84	110	104	96
85 and over	115	111	95

Source: Same as table 104.

been chosen, and the rate calculated for these periods on the basis of deaths to residents are presented in table 106.

The figures in table 106 reveal a general picture of higher urban mortality. Infant mortality was higher in urban areas in both 1952-1954 and 1962-1964. In the case of the crude death rate, however, the 1962-1964 urban rate of 7.8 is lower than the rural death rate of 8.8. Indirect standardization using the Sri Lanka age-specific death rates yields a standardized urban death rate of 8.3 while the standardized rural rate remains at 8.8. Hence even after allowing

Table 106. Crude death rates and infant mortality rates by urban and rural sectors, 1952-1954 and 1962-1964

Sector	Crude death rate			Infant mortality rate		
	1952-1954	1962-1964	Percentage decline	1952-1954	1962-1964	Percentage decline
Sri Lanka	10.9	8.6	21.1	73.9	55.1	25.4
Urban	11.6	7.8	32.8	79.5	64.6	18.7
Rural	10.8	8.8	18.5	72.8	53.4	26.6

Source: Compiled from Registration and Population Census data.

for the effects of the age distribution, the urban death rate is lower than the rural death rate in 1962-1964. The higher infant mortality in urban areas may be due to the poorer economic conditions, less sanitary housing and environmental hygiene of the poorer sections of urban dwellers.

3. Ethnic differentials

The crude death rates as well as infant mortality rates for the various ethnic groups in Sri Lanka for the period 1962-1964 are given in table 107. Apart from the Indian Moors, Burghers and Malays each of which numbered less than 50,000, the Sinhalese enjoy the most favourable mortality conditions while the Indian Tamils have the highest rate. The infant mortality rate of the Indian Tamils is about twice that of either the Sinhalese or the Sri Lankan Tamils.

As direct standardization of the rates for age composition is not possible owing to the absence of age-specific death rates in respect of the ethnic groups, indirect standardized rates using the age

Table 107. Crude death rates and infant mortality rates by ethnic group, Sri Lanka, 1962-1964

Ethnic group	Crude death rates	1962-1964 rate standard-ized for age	Infant mortality rate
	1962-1964		1962-1964
All races	8.6	8.6	55.1
Sinhalese	7.9	7.8	49.2
Sri Lankan Tamils	10.0	9.8	52.0
Indian Tamils	11.4	14.2	102.3
Sri Lankan Moors	10.2	10.8	62.2
Indian Moors	3.1	3.2	35.1
Burghers	9.3	6.6	33.8
Malays	7.3	5.8	47.4

Source: Registrar-General's reports on Vital Statistics.

specific death rates for all races are given in the table. The standardized death rate for Indian Tamils is 14.2 compared to the unstandardized figure of 11.4. The difference between the standardized and unstandardized rates is not appreciable in the case of the other major ethnic groups.

4. District differentials

The crude death rates and infant mortality rates for the 22 districts of the country for the periods 1952-1954 and 1962-1964 and for 1970 are shown in table 108. The crude death rates have been computed using registered deaths and the population of the censuses of 1953 and 1963 adjusted to midyear.^{43/}

It will be observed that crude death rates in 1952-1954 ranged from a low of 9.1 in the Puttalam District to a high of 13.1 in the Batticaloa-Amparai District. There were in all 10 districts whose crude death rates were 10 or below during this period. In 1962-1964, however, the lowest death rate, 5.3, was recorded in Polonnaruwa District and the highest, 11.3, in Batticaloa District. The 1962-1964 pattern appears to have been repeated in 1970 as well. In 1962-1964, besides Polonnaruwa, two more districts, Anuradhapura and Vavuniya had very low death rates. It may be noted that all three districts experienced substantial in-migration, and the fact that in-migrants tend to be young men and women may be an important factor responsible for the low death rates in these districts. Kandy and Matale have high death rates which may be accounted for by the presence of the Indian estate population. Batticaloa, however, has a high death rate despite its being a non-estate district. In 1962-1964 infant mortality rates also ranged from 43.1 in Hambantota District to 84.7 in Nuwara Eliya District. Infant mortality is compa-

^{43/} The mid-1970 population was estimated on the basis of the 1963 census data and does not take into account the inter-district migration between these two years. To this extent, the estimates for 1970 may not be reliable.

Table 108. Crude death rates and infant mortality rates for districts, Sri Lanka, 1952-1954, 1962-1964 and 1970

District	Crude death rate			Infant mortality rate		
	1952-1954	1962-1964	1970	1952-1954	1962-1964	1970
Colombo	11.1	8.9	7.8	71.0	50.7	40
Kalutara	9.2	8.2	7.0	56.4	53.0	44
Kandy	12.2	10.0	8.2	87.0	70.1	57
Matale	12.5	9.8	7.6	84.5	60.0	48
Nuwara Eliya	11.8	10.4	9.9	105.6	84.7	95
Galle	11.2	8.6	7.3	68.4	50.9	49
Matara	9.7	8.1	6.5	53.8	43.5	42
Hambantota	10.0	6.8	5.7	57.8	43.1	36
Jaffna	11.6	9.3	7.5	66.7	39.1	31
Mannar	11.3	8.7	8.1	100.4	56.3	49
Vavuniya	9.6	6.9	6.3	73.3	45.3	43
Batticaloa	13.1	11.3	10.4	97.3	74.5	58
Amparai		8.1	6.8		50.7	45
Trincomalee	10.4	6.8	6.1	78.1	43.3	37
Kurunegala	9.7	7.5	6.4	69.6	48.6	43
Puttalam	9.1	8.2	7.6	59.3	44.8	46
Anuradhapura	9.5	6.9	6.0	73.8	46.3	39
Polonnaruwa		5.3	5.1		43.3	33
Badulla	11.0	9.5	6.4	81.2	63.2	61
Monaragala		7.8	6.4		48.7	40
Ratnapura	11.8	9.4	8.9	77.4	76.7	64
Kegalla	9.8	7.0	6.5	71.5	53.8	49
Sri Lanka	11.1	8.7	7.5	73.9	55.1	48

Source: Department of Census and Statistics.

relatively higher in the estate districts of Kandy, Nuwara Eliya, Badulla and Ratnapura. Batticaloa is again an exception in that it has a high infant mortality rate despite the absence of an estate sector within it. Another interesting feature of the district variation in mortality is the relatively higher mortality level in Colombo District, compared with say, Galle, Matara, Hambantota and Puttalam. "It is possible that there is either an under-registration of deaths or a disparity between the actual place of residence and that reported in the death certificate".^{44/}

G. CAUSES OF DEATH

The discussions in the preceding sections had been centred on the incidence of death in the total population as well as in the various sex and age categories and their trends. Although these an-

^{44/} S.L.N. Rao, "Mortality and morbidity in Sri Lanka" Synopsis of the Paper presented to Seminar on Population Problems of Sri Lanka in the Seventies, (Colombo, Demographic Training and Research Unit, University of Sri Lanka, December 1975), p. 3.

alyses demonstrate the degree of success gained in controlling mortality, they do not give an indication of the distribution of deaths by cause and the extent of control achieved over the different causes of death. From a medical as well as a socio-economic point of view, an analysis of the causes of death is important as it could shed light on the relative influence of each cause on the death rate as well as identify the major causes, thus making it possible to assess the prospects for further reductions.

However, a study of long-term trends in death rates due to specific causes is rendered difficult owing to changes in medical diagnosis as well as revisions in the system of classifying causes of death.^{45/} Further, as was observed by Sarkar, "In rural areas the causes of death are reported by registrars who are not medically qualified. In urban areas registered medical practitioners are appointed

^{45/} In Sri Lanka there was a change in the system of classification of cause of death in 1950. Prior to 1950 deaths were classified according to the fifth revision of the International List of Causes of Death while from 1950 onwards the sixth revision has been adopted.

Table 109. Death rates per 100,000 population by causes of death, Sri Lanka, 1945-1965 and percentage of all deaths due to each cause, 1945 and 1965

Cause of death	Death rate per 100,000 population					Percentage of all deaths 1965 rate as percentage of		
	1945	1950	1955	1960	1965	1945	1945	1965
All causes	2,149.3	1,239.2	1,081.8	858.1	821.6	38.2	100.0	100.0
Infectious, parasitic and respiratory diseases	507.3	273.5	183.1	117.8	90.0	17.7	23.6	11.0
Dysentery, all forms	29.1	10.7	8.4	6.0	5.0	17.2	1.3	0.6
Tuberculosis of respiratory system	49.1	48.1	19.1	12.5	13.0	26.5	2.3	1.6
Anklyostomissis and other diseases due to halminths	91.8	58.9	55.0	25.5	17.4	19.0	4.3	2.1
Typhoid	22.1	8.7	3.6	1.6	0.8	3.6	1.0	0.1
Malaria	128.4	24.8	3.1	0.6	0.1	0.1	6.0	0.0
Influenza	23.2	11.9	8.8	4.1	1.5	6.0	1.2	0.2
Pneumonia	140.0	97.0	73.1	59.2	44.6	31.9	6.5	4.5
Bronchitis	21.8	13.4	12.0	8.3	7.6	34.9	1.0	0.9
Cancer	12.7	13.8	17.0	22.3	27.3	215.0	0.6	3.3
Diseases of the circulatory system	60.6	81.6	85.0	73.4	91.8	151.5	2.8	11.2
Diabetes mellitus	9.5	6.4	6.9	7.4	8.0	84.2	0.4	1.0
Anaemia	42.9	28.8	28.1	26.5	19.6	45.7	2.0	2.4
Gastritis, duodenitis, enteritis and colitis except diarrhoea of new born	88.3	45.7	62.4	43.1	46.6	52.8	4.1	5.7
Complications of pregnancy, child-birth and the puerperium	59.2	22.0	15.1	11.1	7.9	13.3	2.6	1.0
Diseases peculiar to early infancy	276.8	194.3	164.8	136.3	118.4	42.8	12.9	13.0
Convulsions under 5 years	193.0	106.9	78.3	45.0	34.0	17.6	9.0	4.1
Mandama (1 year and over)	106.0	65.0	40.0	25.3	11.6	10.9	4.9	1.4
Violent or accidental deaths	53.6	41.8	42.2	43.2	45.4	84.7	2.5	5.5
Senility without mention of psychosis	140.2	111.3	129.5	118.8	132.9	94.8	6.5	16.2
All other causes	312.9	142.4	143.5	126.4	135.1	43.2	13.3	12.1
Ill-defined and unknown causes	258.7	106.6	85.2	61.6	53.2	18.6	13.3	6.5

Source: Computed from data on causes of deaths published by the Registrar-General, Sri Lanka.

as registrars, but even here the accuracy of reporting of the cause of death cannot be expected to be very high, as very often the patients are not treated by such medical practitioners but by quacks and 'ayurvedic doctors'. Even when the patients are treated by registered medical practitioners, diagnosis may not be correct. Often the social stigma attached to certain diseases lead to the suppression of the true cause of death". ^{46/}

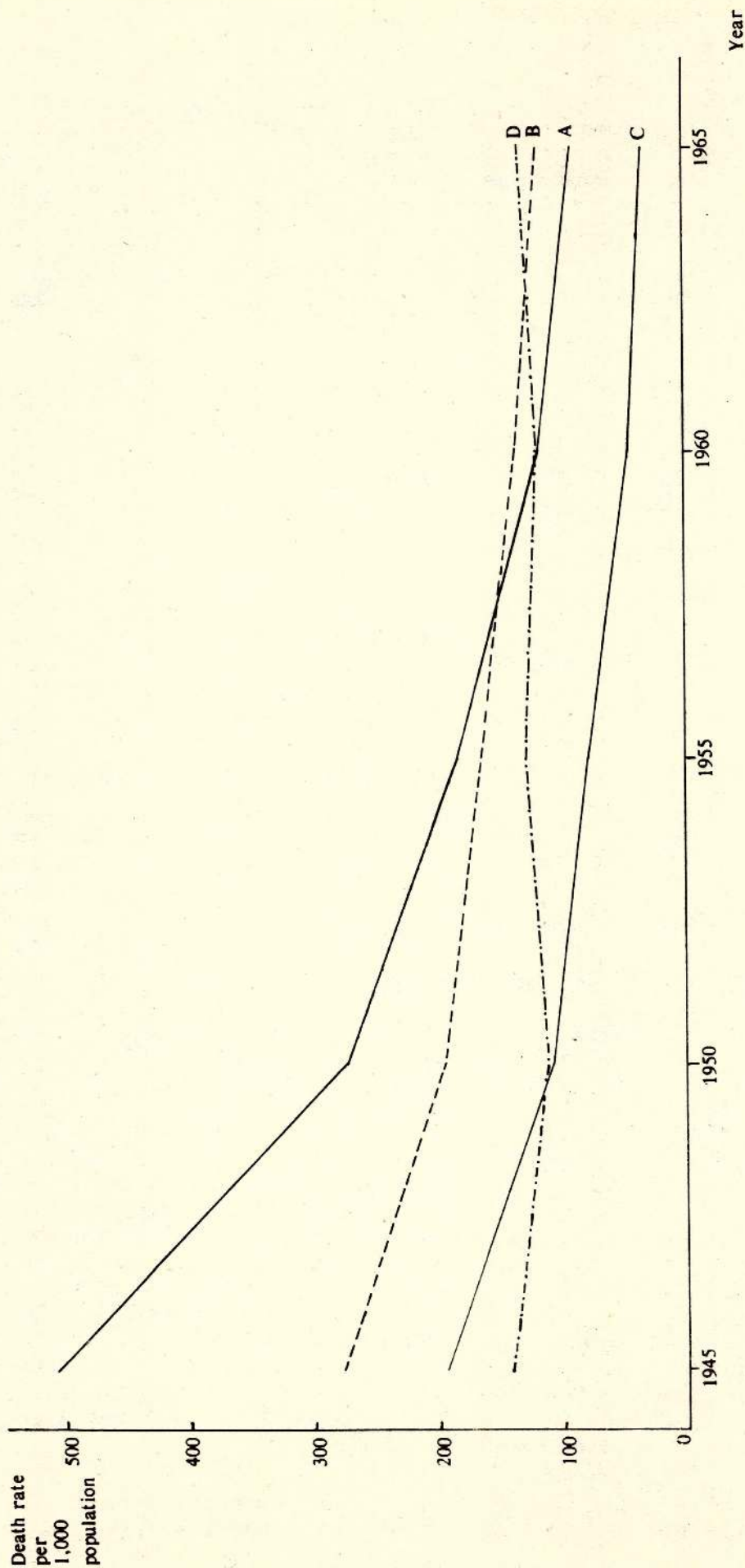
Table 109 gives the death rates from the principal causes at five-year intervals from 1945 to 1965. It also shows the 1965 death rates as a percentage of the death rates in 1945 and the percentage that each cause is of all deaths in 1945 as well as 1965. ^{47/}

^{46/} N.K. Sarkar, *op.cit.*, p. 131.

^{47/} It has to be noted that the percentage distribution of deaths by causes do not provide an accurate comparison of the various causes over time. It merely shows the improvement in one cause of death relative to others, so that if some causes show a rise, others must show a fall

The table reveals certain significant changes in the pattern of mortality over the 20-year period. Infectious, parasitic and respiratory diseases which constituted 24 per cent of all deaths in 1945 accounted for only 11 per cent in 1965. Most significant is the almost complete elimination of malaria deaths which accounted for 6 per cent of the deaths in 1945. Further, typhoid and influenza have been virtually eliminated as causes of death. The death rate per 100,000 population for infectious, parasitic and respiratory diseases has declined from 508 in 1945 to 90 in 1965, a decline of 82 per cent. While the rates for malaria, typhoid and influenza have declined by over 90 per cent the fall in the rates for pneumonia and bronchitis has been less spectacular though substantial, these rates having fallen by about two-thirds.

Cancer, as a cause of death, has become relatively more important over the period 1945-1965. The



Notes: A — Infectious, parasitic and respiratory diseases
 B — Diseases peculiar to early infancy
 C — Convulsions under 5 years; Mandama (1 year and over)
 D — Senility without mention of psychosis

Source: Table 109

Figure 16. Death rates per 100,000 population by major causes of death, 1945-1965

death rate for cancer more than doubled from 12.7 per 100,000 persons in 1945 to 27.3 in 1965 and the proportion of deaths from cancer has risen from 0.6 to 3.3 per cent. Since improvements in medical diagnosis and an increase in the proportion of medically certified deaths may account for the rise in the death rate from cancer, no definite conclusion can be drawn about the cancer death rate. However, the increasing proportion of deaths from cancer is a phenomenon that has been observed in other low mortality countries including the United States of America and England and Wales.

Diseases of the circulatory system have also become relatively more important as a cause of death, the proportion in 1965 being 11.2 per cent compared with 2.8 per cent in 1945. The death rate has increased from 61 per 100,000 persons in 1945 to 92 in 1965, or by 50 per cent. As in the case of cancer, improvements in diagnosis and an increase in the proportion of medically certified deaths may account for some of the rise.

Complications of pregnancy, childbirth and the puerperium form a group which is another cause which has shown remarkable declines in regard to both the rate as well as a proportion of all deaths. The death rate due to these causes has declined by 87 per cent, from 59 per 100,000 persons in 1945 to 8 per 100,000 in 1965. The proportion of these deaths has declined from 2.6 per cent in 1945 to 1.0 per cent in 1965.

The death rate for diseases peculiar to early infancy has declined substantially by 57 per cent but shows no change in the proportion of all deaths due to this cause. Deaths due to convulsions among children under 5 years of age and mandama (malnutrition) among children over 1 year of age show declines of 82 per cent and 89 per cent respectively. The proportion of deaths due to these causes have declined from 9.0 per cent to 4.1 per cent and from 4.9 per cent to 1.4 per cent respectively. Death rates due to anaemia and gastritis, duodenitis, enteritis and colitis except diarrhoea of the new born have declined by 54 per cent and 47 per cent respectively, while their proportions of all deaths has shown only a slight increase.

The death rate due to violent or accidental deaths shows a decline of only 15 per cent but the proportion of all deaths due to this cause has risen from 2.5 per cent to 5.5 per cent in the period. The death rate from "senility without mention of psychosis" does not show any significant trend but the proportion of such deaths have risen from 6.5 per cent to 16.2 per cent. The proportion of deaths due to ill-defined and unknown causes has declined from 13.3 per

cent in 1945 to 6.5 per cent in 1965 and is a reflection of the improvement in the certification of cause of death.

H. LIFE TABLES

The progress made in the over-all level of mortality as well as the risks of death at various ages may also be shown by means of life tables.^{48/} The average length of life or the expectation of life at birth represents the average number of years that each member of a group of new born infants could expect to live if throughout their life they were to be exposed at each age to the risks of death reflected in the age-specific death rates of the period for which the life table is computed. It is a summary of what a current year's rates mean in terms of over-all longevity. The expectation of life at birth provides, a measure of the over-all level of mortality which is free of the distorting effects of the age composition of the population. The higher the longevity as measured by the life expectation at birth the lower the level of mortality.

The first life table for Sri Lanka was prepared in 1888 and published in that year in the Registrar-General's Report for 1887.^{49/} This table which was put forward tentatively was not very accurate. This fact was recognized by the then registrar general who remarked: "Such an extended series of observed facts does not exist in Ceylon to serve as the basis of a life table. Our efforts in the direction must therefore be of a tentative character at present. Apart from the value of life tables as supplying the most important materials for deducing the true principles on which life annuities and life insurance should be funded, such tables are absolutely necessary to give a scientific value to death rates, which in a mixed population consisting of all ages in different proportions are apt to lead to wrong deductions, unless carefully corrected."^{50/}

A second life table was computed for the period 1893-1901 and was published in the 1901 Census

48/ For discussion on history and use of life tables, see P. Arunachalam, *Census of Ceylon 1901, vol. I* (Colombo, Government Printer, 1902), p. 175, and Henry S. Shryock, Jacob S. Siegel and associates, *The Methods and Materials of Demography* (Washington, D.C., US Department of Commerce, Bureau of the Census, 1971), vol. 2, chap. 15, pp. 429-431.

49/ P. Arunachalam, *Ceylon Administration Reports 1887, part IV, Miscellaneous, Vital Statistics* (Colombo, Government Printer, 1887).

50/ Quoted in P. Arunachalam, *Census of Ceylon 1901, vol. I, op.cit.*, pp. 175-176. The census superintendent also reported that this life table was prepared by Mr. T. Ilankaiyar of the Registrar-General's Department.

Table 110. Expectation of life at birth, Sri Lanka, 1900-1902 to 1971

Period	Author	Expectation of life at birth	
		Male	Female
1900-1902 ^{a/}	Fernando	36.4	34.2
1910-1912	Sarkar	33.4	29.3
1920-1922	Sarkar	35.4	31.0
1920-1922	Somasundram and Raja Indra	32.7	30.7
1945-1947	Sarkar	47.8	44.8
1945-1947	Somasundram and Raja Indra	46.8	44.7
1946	-do-	43.9	41.6
1947	-do-	52.7	51.0
1948	-do-	54.9	53.0
1949	-do-	56.1	54.8
1950	-do-	56.4	54.8
1951	-do-	56.1	54.0
1952	-do-	57.6	55.5
1953	Registrar-General	58.8	57.5
1962-1964	Nadarajah	63.3	63.7
1964	-do-	63.0	63.6
1965	-do-	63.7	65.0
1966	-do-	63.6	65.0
1967	-do-	64.8	66.9
1971	-do-	64.2	66.7

Source: See footnotes 48, 49, 50, 51, 52 of chapter VIII.

Note: a/ Refers to the 1893-1901 period.

Report. ^{51/} Since 1901, there was no official attempt to construct a life table for Sri Lanka until 1953 when the Department of Census and Statistics ^{52/} prepared complete life tables for 1920-1922 and 1945-1947 and abridged life tables for each of the years 1946 to 1952. In 1956, Sarkar ^{53/} prepared abridged life tables for the years 1900-1902, 1910-1912, 1920-1922 and 1945-1947. In 1971, complete life tables for each sex for the three-year period 1962-1964 and abridged life tables for the years 1964, 1965, 1966 and 1967 were prepared at the Department of Census and Statistics. ^{54/} Another life table for purposes of this report was also prepared for 1971 by the Department of Census and Statistics. The expectation of life at birth as revealed by the various life tables is shown in table 110.

^{51/} *Ibid.*, pp. 176-186. According to the 1901 census superintendent, these life tables were "prepared by Mr. J.J.L. Fernando, Instructor in Mathematics, Ceylon Technical College."

^{52/} S.J. Somasundram and R. Raja Indra, *Life, Births and Deaths in Ceylon, 1920-1952*, (Colombo, Department of Census and Statistics, 1954).

^{53/} N.K. Sarkar, *op.cit.*, pp. 140-145.

^{54/} T. Nadarajah, "Life tables; Ceylon, 1962-1967", (Colombo, Department of Census and Statistics 1971), (mimeo).

It would appear that according to the life tables prepared for the 1893-1901 period, the expectation of life at birth in Sri Lanka was 36.4 years for males and 34.2 years for females. These values are higher than the values for the 1910-1912 and 1920-1922 periods. It should be noted that the compilers of the 1893-1901 table did not make any corrections for under-reporting of deaths, which as noted earlier, very significant during that period.

The increase in the average life span that has been achieved since 1920-1922 is very impressive. ^{55/} In 1971 the life expectancy of females is more than double that in 1920-1922 while in the case of males it has just failed to double itself. The gain in longevity over the period 1920-1922 to 1967 is 32.1 years for males and 36.0 years for females. The females have gained 3.1 years more than the males.

Also the greatest gain in longevity was achieved during the period 1945-1947 to 1953. During the period the average gain per year for both males and females amounted to 1.3 years. The gains in life expectancy after 1953 have considerably diminished and during the period 1967 to 1971 the expectation fell slightly. While the average annual gain in

^{55/} The discussion in regard to the 1920-1922 and 1945-1947 years are based on the life tables prepared by Somasundram and Raja Indra.

Table 111. Trends in life expectancy at birth by sex, Sri Lanka, 1921-1971, and rapidity of mortality decline by sex and stage, Sri Lanka and United States of America

Year	Expectation of life at birth (e_0^o)	
	Male	Female
1921	32.6	30.6
1946	43.8	41.5
1953	57.8	55.7
1963	62.8	63.0
1971	64.0	66.9

Stage	Rapidity of mortality decline (average annual increased in e_0^o)			
	Sri Lanka		United States of America	
	Male	Female	Male	Female
First	0.45	0.40	0.07	0.06
Second	1.10	1.13	0.41	0.42
Third	0.15	0.49	0.30	0.41

Source: S.L.N. Rao, "Mortality and morbidity in Sri Lanka", synopsis of the paper presented to Seminar on population problems of Sri Lanka in the seventies, (Colombo, Demographic Training and Research Unit, University of Sri Lanka), December 1975, table 1.

longevity for males and females were nearly equal up to 1953, females have achieved greater gains than males since that year.

On the basis of the trends in expectation of life at birth the mortality transition in Sri Lanka could therefore be defined in terms of a stage process - an initial stage of relatively slow gain in life expectancy prior to 1946, a second stage of accelerated gain during 1946-1963, and a third stage of slower gain tending towards a stationary, high expectation of life since 1963.^{56/} This stage process is illustrated in table 111. The main conclusions that could be drawn from the table are that the rate of improvements in life expectancy in each stage is extremely high compared with a highly developed country like United States of America and that the rapidity of mortality decline favouring the males in the first stage has switched in favour of females in the second stage and more significantly in the third stage.

The percentage of survivors up to various ages as computed from life tables and presented in table 112 provide a striking illustration of the way in which the decline in mortality has enabled greater proportions of the population to survive to higher ages thus

considerably reducing the wastage of human life that occurs in conditions of high mortality.

Under the conditions of mortality prevailing in 1920-1922, only 67.2 per cent of the male babies and 66.1 per cent of female babies born alive would have survived to age 5 while under the mortality conditions of 1967, 92.5 per cent of male babies and 93.0 per cent of female babies born alive would live up to 5. Similar increases in the proportions that would survive to 15, 25, 45 and 60 years of age respectively may be observed in the table. Very striking is the fact that while under 1920-1922 mortality conditions only 24.3 per cent of males and 22.8 per cent of females would have lived to age 60, whereas as much as 73.3 per cent of males and 77.5 per cent of females would have survived to age 60 under the 1967 mortality conditions. This may be amplified by stating that every baby has a certain potential for life although the human life span is limited. Under conditions of high mortality, the proportion that could realize the full potential in terms of duration of life, if not in quality, was low. The improved conditions of health resulting in low mortality has enabled a considerably higher proportion of the babies to realize the full or greater part of the potential in terms of length of life.

^{56/} S.L.N. Rao, *op.cit.*

Table 112. Percentage of survivors from birth to various ages by sex, Sri Lanka, selected life tables, 1920-1922 to 1971.

	1 year		5 years		15 years		25 years		45 years		60 years	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
1920-1922	80.5	81.7	67.2	66.1	59.4	57.6	53.8	50.8	39.2	34.6	24.3	22.8
1945-1947	86.7	87.8	78.6	78.1	75.4	74.0	71.6	68.5	60.0	54.5	44.4	42.4
1953	92.0	93.3	86.9	87.0	83.7	84.4	82.3	81.8	76.4	74.4	65.9	65.6
1962-1964	94.0	95.0	91.1	91.5	89.6	90.0	88.1	88.1	82.7	81.7	71.3	72.5
1967	94.8	95.7	92.5	93.0	91.2	91.8	89.7	90.4	84.3	85.5	73.3	77.5
1971	95.1	95.9	93.2	93.6	92.0	92.4	90.3	91.0	83.8	85.9	70.9	77.3

Source: Same as table 110.

Table 113. Phase-specific temporary expectation of life by sex, Sri Lanka, 1921-1971

Year	At birth	Childhood (0-4)	Late childhood (5-14)	Adulthood (15-49)	Late adulthood (50-69)	Old age (70 and over)
Male						
1921	32.637	3.718	9.339	28.463	14.025	6.675
1946	43.762	4.010	9.712	31.050	15.314	8.609
1953	57.801	4.420	9.811	33.377	17.367	9.809
1963	62.781	4.638	9.908	33.566	17.393	9.629
1971	64.002	4.717	9.930	33.440	17.307	9.794
Female						
1921	30.575	3.706	9.270	27.051	14.305	6.107
1946	41.526	4.017	9.662	29.433	15.853	8.154
1953	55.748	4.456	9.778	32.405	17.661	8.158
1963	63.020	4.668	9.899	33.301	17.736	9.590
1971	66.926	4.745	9.925	33.706	18.134	10.397

Source: S.L.N. Rao, "Mortality and morbidity in Sri Lanka," synopsis of the paper presented to Seminar on population problems of Sri Lanka in the seventies (Colombo, Demographic Training and Research Unit, University of Sri Lanka, December 1975), table 2.

It must, however, be mentioned that as the life table assumes constancy of the age-specific death rates, the declines in mortality that have occurred imply that the actual proportions of each year's births surviving to the respective ages referred to above would be somewhat greater than the figures quoted above. For example out of every 100 male births in the year 1946, 75.4 per cent would survive to age 15 according to the 1945-1947 life table. However, as survivors of these persons born in 1946 continue to live, they experience smaller risks of death as the years pass by in view of the declining mortality. Since this proportion of survivors is obtained from the 1945-1947 life table which is based on the assumption of constant mortality, the proportion that will actually survive to age 15 will be somewhat higher.

A recent study by Rao ^{57/} has examined the trends in life expectancy on the basis of a phase-specific rather than an age-specific analysis of mortality. The age classifications in respect of the various phases are: infancy and childhood, 0-4 years; late childhood, 5-14 years; adulthood, 15-49 years; late adulthood 50-69 years; and old-age, 70 years and over. Trends and variations in mortality specific to these phases were attempted in terms

of temporary expectation of life (${}_nL_x/P_x$). The results are presented in table 113.

It will be seen that concomitant with improvements in life expectancy at birth, there have been similar improvements in all phases of life but with varying rapidities. For example, during 1946-1971, among the males, there was a 17 per cent increase in expectation of life in childhood, a 11 per cent in late childhood, a 8 per cent in adulthood, and a 2 per cent in late adulthood. Similarly, among females, the improvements in the corresponding phases are, 19 per cent, 15 per cent, 14 per cent, and 2 per cent.

The sex differential in phase-specific improvements in life expectancy is interesting. Females have all along enjoyed a higher expectation in late adulthood but not so in old age until 1971 and this raises some doubt regarding the accuracy of mortality statistics at older ages in Sri Lanka. Since 1940, females have experienced a higher life expectancy in childhood. The phases of late childhood and adulthood have been, except in 1971, more hazardous to the females in Sri Lanka. However, these differentials are reversed in 1971. With the result, females currently enjoy lower mortality in each phase of life and therefore the expectation of life at birth is now in favour of females. Thus, combining the trends in sex differences in mortality, one can expect a further widening of life expectancy at birth between males and females in Sri Lanka.

^{57/} S.L.N. Rao, *op.cit.*

Table 114. Phase-specific temporary expectation of life by district, Sri Lanka, 1971

District	At birth	Childhood (0-4)	Late childhood (5-14)	Adulthood (15-49)	Late adulthood (50-69)	Old age (70 and over)
Male						
Colombo	62.531	4.737	9.943	33.378	16.495	9.139
Kalutara	67.623	4.786	9.943	33.909	17.768	10.444
Kandy	60.640	4.612	9.905	33.205	17.066	8.866
Matale	63.388	4.728	9.915	32.965	17.496	9.658
Nuwara Eliya	56.630	4.417	9.892	33.134	16.753	7.305
Galle	67.294	4.755	9.933	33.856	17.895	10.606
Matara	68.251	4.777	8.947	33.744	18.096	10.984
Hambantota	67.065	4.757	9.943	33.257	18.367	10.854
Amparai	63.846	4.731	9.898	33.587	17.471	8.624
Trincomalee	65.132	4.758	9.920	33.375	17.391	10.713
Kurunegala	66.382	4.756	9.944	33.467	17.765	10.627
Puttalam	64.163	4.772	9.940	33.277	17.177	9.676
Mannar	63.711	4.730	9.932	33.594	16.972	9.360
Vavuniya	64.877	4.783	9.940	32.995	17.574	9.984
Batticaloa	59.526	4.633	9.880	32.989	16.372	9.615
Anuradhapura	65.209	4.734	9.924	33.293	17.682	10.307
Polonnaruwa	67.009	4.798	9.955	33.391	17.913	10.474
Badulla	61.204	4.649	9.899	33.117	17.161	9.158
Monaragala	67.954	4.741	9.939	33.762	18.404	10.963
Ratnapura	63.772	4.630	9.926	33.564	17.652	10.045
Kegalla	66.771	4.727	9.946	33.622	18.046	10.676
Jaffna	66.040	4.827	9.943	33.569	17.315	9.787
Female						
Colombo	67.871	4.779	9.944	33.875	17.971	10.358
Kalutara	70.818	4.808	9.948	34.137	18.685	10.987
Kandy	62.190	4.644	9.906	33.111	17.573	9.707
Matale	64.122	4.641	9.910	33.522	18.187	9.513
Nuwara Eliya	55.089	4.457	9.871	32.670	16.540	7.058
Galle	70.749	4.794	9.935	34.078	18.724	11.166
Matara	71.361	4.798	9.914	33.867	18.928	12.340
Hambantota	69.298	4.768	9.908	33.970	18.525	11.445
Amparai	66.605	4.696	9.892	33.817	18.313	10.986
Trincomalee	65.440	4.774	9.911	33.451	17.888	9.644
Kurunegala	69.174	4.786	9.937	33.969	18.179	11.128
Puttalam	68.312	4.811	9.954	33.712	18.148	10.358
Jaffna	67.144	4.835	9.939	33.543	17.177	9.882
Mannar	63.241	4.763	9.897	32.863	17.828	8.777
Vavuniya	66.022	4.847	9.905	33.116	17.482	10.407
Batticaloa	60.429	4.635	9.882	33.001	17.261	8.848
Anuradhapura	68.799	4.790	9.949	33.966	18.100	10.677
Polonnaruwa	69.082	4.791	9.967	33.284	18.506	17.743
Badulla	61.907	4.660	9.908	33.162	17.575	8.736
Monaragala	69.371	4.773	9.940	33.749	18.614	11.680
Ratnapura	63.376	4.667	9.893	33.392	17.830	9.700
Kegalla	69.013	4.759	9.918	34.065	18.436	11.050

Source: S.L.N. Rao, "Mortality and morbidity in Sri Lanka" synopsis of the paper presented to Seminar on population problems of Sri Lanka in the seventies (Colombo, Demographic Training and Research Unit, University of Sri Lanka, December 1975), table 3.

The phase-specific temporary expectation of life for males and females by districts is shown in table 114. It will be seen that expectation of life at birth ranges from 56.6 years in Nuwara Eliya to 68.3 years in Matara for males and in the case of females from 55.1 years in Nuwara Eliya to 71.4 years in Matara. These variations are quite large by any standard.

As is the case with over-all expectation of life, variations in phase-specific survival are also substantial. For males, the indexes vary from 4.4 in Nuwara Eliya to 4.8 in Jaffna in the childhood phase; from 9.89 in Nuwara Eliya to 9.96 in Polonnaruwa in the late childhood phase; from 32.97 in Matale to 33.91 in Kalutara in the adult phase; from 16.37 in Batticaloa to 18.37 in Hambantota in the late adult phase; and from 7.31 in Nuwara Eliya to 10.98 in Matara in "old age." By and large, Nuwara Eliya has not only the lowest expectation of life at birth but the lowest expectation in each phase of life. However, there does not seem to be any consistency between the highest expectation of life at birth and the highest expectations in the various phases. Females also share this pattern and, thus, this indicates either a minor variation in the age pattern of mortality among the districts or more probably, some inaccuracies in the age-specific death rates as a result of reporting errors.

Sex differences in mortality vary from an excess of 1.5 years of male expectation of life at birth in Nuwara Eliya all the way to 5.4 years of excess of female expectation at birth in Colombo. Nuwara Eliya, Mannar and Ratnapura have all had lower female than male expectation of life at birth and in the districts of Matale, Trincomalee, Batticaloa and Badulla there is not any significant difference in expectation of life between the sexes. However, Colombo, Kalutara, Galle, Matara, Puttalam and Anuradhapura have at least three years of excess female expectation of life at birth. It is somewhat well established that as over-all mortality declines, sex differences in mortality widens. This is well borne out in Sri Lankan data also since those districts with less than one year of female excess life expectancy have an over-all expectation of life at birth of 61.9 years, while those districts with large sex differences in mortality have 67.7 years as expectation of life at birth.

I. CONCLUSIONS

The analyses in the preceding sections have demonstrated convincingly the downward trends in mortality. The causes and factors underlying these trends, however, are not as easily discerned. A

major difficulty in dealing with the causes is the multitude of factors influencing mortality and the problem of estimating the relative effect of each factor. The paucity of data relating to such factors is a great handicap. Moreover, statistics of death and mortality rates are often utilized as indicators of progress in health and medical standards, living conditions etc. For example, the infant mortality rate is widely accepted as a good indicator of social and economic progress. This difficulty has been clearly stated as follows:

"Statistical analyses which attempt to quantify the influence of the various factors affecting mortality are rarely found in the literature. Because of data deficiencies, the imprecision of analytical tools, and the inherent difficulties resulting from the mutual interdependence of factors, it is not possible to measure separately the effects of such diverse factors as improvements in nutrition, housing, environmental sanitation, personal hygiene, and medical knowledge and services, or the increasing health consciousness of the people. It is even less feasible to isolate the effects of various underlying economic and social changes such as the rise in real wages, the improvement of agricultural techniques, the development of transportation facilities or the enactment of specific laws relating to employment conditions, housing etc." ^{58/}

In the developed countries the decline in mortality has been attributed to more or less continuous economic advances resulting from the so-called agricultural and industrial revolution which made possible the development and application of technology in public health, sanitation and medicine which were crucial for substantial mortality decline. The level of mortality in these countries was inversely correlated with the level of economic development and the decline in mortality was a consequence of economic development. In Sri Lanka and other developing countries, however, the rapid decline in mortality has been largely independent of economic conditions. The developing countries have been able to borrow techniques developed in the industrialized countries and to apply them at relatively low cost in mass public health programmes. The rapid decline in mortality in Sri Lanka after the Second World War clearly demonstrates that economic development and progress is a *sufficient* but not *necessary* condition for achieving substantial reductions in mortality levels.

^{58/} United Nations, *The Determinants and Consequences of Population Trends, New Summary Findings on Interaction of Demographic, Economic and Social Factors*, vol. I, (Sales No. E.71.XIII.5), p. 146.

CHAPTER IX

TRENDS AND DIFFERENTIALS IN FERTILITY

A. FERTILITY TRENDS

1. Over-all trends

The simplest and most common measure of fertility is the crude birth rate^{1/} which is defined as the number of births in a year per 1,000 mid-year population. The crude birth rates for Sri Lanka based on the registration data for all the years from 1867 to 1974 are shown in annex III table 1. The average rate for each quinquennium from 1871 is given in table 115.

It is evident from table 115 that there are three distinct phases in trends of the annual average crude birth rates for the various quinquennial periods as shown by the registration data. The first phase covers the period 1871-1895 when the birth rates appear to be low though the general trend was towards a rise. During the second phase which extends from 1896 to 1955, the birth rates appear to have fluctuated violently around a high level of 37-38 per thousand of the population. During the third phase, since 1956, there has been a definite decline in Sri Lanka's crude birth rates. The discussion in regard to fertility trends in Sri Lanka will therefore be in terms of these three phases.

2. 1871-1895 period

During this 25 year period, the average birth rates ranged from a low of 26.3 in 1876-1880 to a high of 31.7 in 1891-1895. As noted earlier, the rates appear to be too low particularly in comparison with the rates obtaining during the subsequent quinquennium. The low rates have largely to be explained in terms of the incompleteness in birth registration during this period.^{2/} The gradual increase in these rates reflect the improvements in the registration system over the years. It is generally accepted that there has been a decline in the under-registration of both birth and death in Sri Lanka after penalties for failure to register were introduced in 1893. This is evident from the sex ratio of

^{1/} Although the crude birth rate is a valuable measure of fertility, its analytical utility is extremely limited, because it is affected by many factors, particularly the specific composition of a population with respect to age, sex and other characteristics.

^{2/} See chapter VIII.

registered births (female births per male births) shown in table 115. "It is found in many countries that under-registration of female births exceeds that of males, so that the sex ratio of registered births and under-registration are correlated, and, as the sex ratio steadies to its asymptotic limit, under-registration may be taken to have become small."^{3/}

Table 115. Quinquennial average crude birth rates and sex ratios of registered births, Sri Lanka, 1871-1974

Period	Crude birth rate	Female births per male births
1871-1875	28.6	0.922
1876-1880	26.3	0.908
1881-1885	28.6	0.909
1886-1890	30.2	0.918
1891-1895	31.7	0.921
1896-1900	37.1	0.942
1901-1905	38.6	0.949
1906-1910	37.5	0.955
1911-1915	37.0	0.957
1916-1920	38.2	0.959
1921-1925	39.2	0.962
1926-1930	40.4	0.963
1931-1935	36.9	0.961
1936-1940	35.9	0.964
1941-1945	36.6	0.968
1946-1950	38.9	0.964
1951-1955	38.1	0.966
1956-1960	36.5	0.966
1961-1965	34.3	0.965
1966-1970	31.1	0.966
1971-1974	28.7	0.959

Source: Computed from data given in annex III, table 1.

It may also be safely assumed that the birth rates prior to 1896 were as high as, if not higher than, the rates obtaining during the first half of the twentieth century. If the extent of registration was as complete prior to 1896, as it was after, then the crude birth rates would have been around 38 per thousand of the population in the last quarter of the nineteenth century. This assumption is

^{3/} N.K. Sarkar, *The Demography of Ceylon* (Colombo, Ceylon Government Press, 1957), p. 24.

to a large extent confirmed by the child-woman ratios ^{4/} (ratio of children under 5 years old to women of child-bearing age) for the various census years given in table 116. These ratios for 1881 and 1891 were much higher than the ratios for the subsequent years, thereby suggesting a higher level of birth rate in the early years. Thus, it is not safe to draw any conclusions from the registered rates before 1896.

Table 116. Child-woman ratio, census years 1881 to 1971

Census year	Child-woman ratio ^{a/}
1881	775.6
1891	760.5
1901	748.9
1911	642.2
1921	602.4
1946	542.9
1953	653.9
1963	686.4
1971	552.1

Source: Computed from the age-sex data of the various censuses.

Note: ^{a/} Number of children aged 0-4 years per 1,000 women aged 15-49 years.

3. 1896-1956 period

During this period there were violent fluctuations in the crude birth rates which increased from 37.1 in 1896-1900 to 38.6 in 1901-1905, declining during the subsequent two quinquennia and then gradually increasing to an all-time high of 40.4 during 1926-1930. There was a sharp drop in the birth rate between 1926-1930 and 1931-1935, the decline continuing into the next quinquennium, thereafter rising

^{4/} As a measure of fertility, the child-woman ratio has many weaknesses. It is directly affected by the under-enumeration of young children which in Sri Lanka is believed to have been large in the earlier years. Another factor affecting the interpretation of the child-woman ratio is mortality which affects both the women of child-bearing age and the children under 5 who are survivors of births in the preceding five years. Since the survival rate is higher for the women, the ratios always understate recent fertility. Another inherent defect of this ratio is that the broad age range used for women does not take account of their age distribution within this range and fertility is of course closely related to age. See Henry S. Shryock, Jacob S. Siegel and associates, *The Methods and Materials of Demography*, vol. 2, (Washington, D.C., Department of Commerce, 1971), p. 502.

to 38.9 in 1946-1950. Then there was a decline in the birth rate to 36.5 in 1956-1960. Looking at the data for individual years, it will be noted that the crude birth rate reached a low of 33.3 in 1912 and a high of 42.0 in 1926. In all decades during the period, there have been several years when the crude birth rate reached a level of 39 or more.

The slight decline in the average birth rates in 1906-1910 and 1911-1915 was due to a greater increase in population than the increase in births. Between 1901-1905 and 1911-1915, while the population is estimated to have increased by 13.4 per cent, the average number of registered births increased by only about 8.4 per cent. The rise in the birth rates from 1916-1920 to 1921-1925 is unexpected. "The ravages of the influenza and malaria epidemics would suggest a decline in the birth rate instead of a rise. The explanation would appear to lie in the under-enumeration of the 1921 census which exceeded that of the 1911 census. The post-censal estimates which were of course based on the enumerated population until the 1946 census provided a new base, will similarly be deficient." ^{5/}

It may also be pointed out that the fluctuations in the birth rates during this period was to a considerable degree due to the outbreak of epidemics. Sarkar ^{6/} has argued that in Sri Lanka, epidemics and health conditions play an important part in determining the level of fertility both directly and indirectly. The direct influence of epidemics on fertility results from the lowered vitality and reproductive power of men and women through illness, and from miscarriages in women already pregnant. ^{7/} The indirect effect of epidemics on fertility is exerted through marriages. It is customary both among the Sinhalese and Tamils to postpone marriage for a year or so if a death occurs in the family. Simi-

^{5/} N.K. Sarkar, *op.cit.*, p. 97.

^{6/} *Ibid.*, pp. 104-106.

^{7/} It has been observed that "while a mild attack of malaria may not adversely affect the course of pregnancy, a severe attack, or more particularly repeated attacks, are very liable to bring an abortion, miscarriage or premature labour to which fact the epidemic has focussed attention still more strongly. — The high temperature of malaria, particularly malignant malaria, cannot only bring on miscarriage or premature labour but can also cause the death of the foetus in utero. A far more important factor in causing intra-uterine death of the foetus is the massive infection of the placenta with malarial parasites which is seen almost in every case of malaria of any degree of severity". See G.A.W. Wickramasuriya, *Malaria and Ankylostomiasis in the Pregnant Woman* (Colombo) pp. 14-15.

larly it is regarded as improper for a son to marry if his father or mother is seriously ill, unless of course the parents want to see their last duty by their son performed before they die. Epidemics, by causing death and illness in the family, lead to postponement of marriages.^{8/} It is for these reasons that the reproduction rate recovers so rapidly after the passing of an epidemic.

Table 117. Number of deaths, births and marriages, 1907-1939
(in thousands)

Year	Death	Birth	Marriage
1907	119	130	19
1908	118	161	21
1909	123	149	20
1910	110	157	22
1911	143	156	21
1912	134	138	22
1913	120	162	25
1914	136	162	23
1915	110	161	29
1916	120	175	25
1917	113	184	25
1918	149	183	22
1919	168	161	19
1920	133	164	22
1921	141	184	23
1922	127	180	24
1923	142	181	23
1931	117	199	25
1932	111	199	25
1933	115	209	26
1934	127	207	28
1935	204	193	24
1936	123	192	27
1937	124	216	31
1938	122	208	31
1939	129	212	30

Source: N.K. Sarkar, *The Demography of Ceylon*, (Colombo, Ceylon Government Press, 1957), table 12.

^{8/} Another way in which epidemics may cause postponement of marriages is by causing increased economic difficulties. "Loss of income and increase in expenditure due to ill health not only makes the collection of a dowry difficult but also reduces the number of eligible bridegrooms." See N.K. Sarkar, *op.cit.*, p. 104.

In Sri Lanka, the three most important epidemics during the period were the influenza epidemic of 1919 and the malaria epidemics of 1911 and 1935. The number of deaths, births and marriages during these epidemic years and in the four preceding and following years are given in table 117. It will be observed from this table that while the number of deaths increased substantially in the three epidemic years, there has been a decline in the number of marriages and births in these years. It will further be noted that the fall in the number of births appears to last for two years before resuming its old level or even exceeding it.^{9/}

Besides this casual examination of the data, Sarkar also made a careful analysis of the effect of health conditions on marriages and births not only in the epidemic years but also in all years, by computing correlation coefficients between births, deaths and marriage rates. These coefficients computed for the deviation from an 11-year moving average for the years 1900 to 1949 are as follows:-

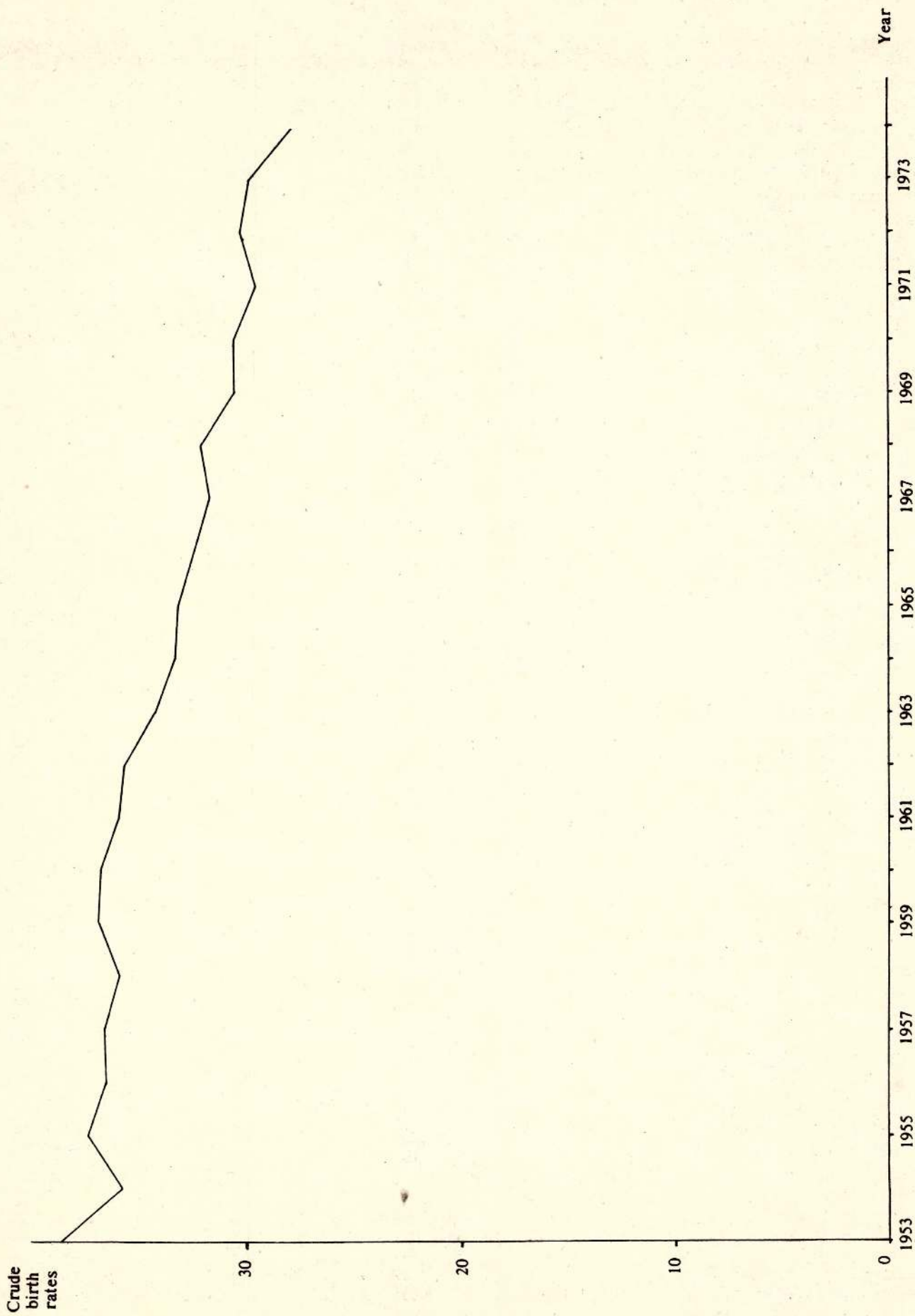
Correlation between death rate	Correlation coefficient	Significance p less than
Birth rate with a year lag	0.5652	0.001
Birth rate of the same year	0.3355	0.05
Marriage rate	0.6050	0.001

On the basis of this analysis, Sarkar concluded that: "Epidemics and health conditions play a significant role in determining fertility in Ceylon. It may be suspected that a substantial proportion of the population live at a marginal level of nutrition and health. The hormone output and general vitality of these persons are such that they exist on the margin between sterility and fecundity as much as on the margin of life and death, and a slight change in the health conditions or in the economic situation may suffice to tip the balance, resulting in the booms and depressions in fertility that we have noticed".^{10/}

It will also be noted that with the eradication of malaria and the control of other diseases, morbi-

^{9/} The 1921 census superintendent also has observed: "In Ceylon possibly owing to the enfeeblement of the population by an unhealthy season, a high death rate in one year is often followed by a low, and not a high birth rate in the following year" See L.J.B. Turner, *Report of the Census of Ceylon 1921, vol. I, Part I* (Colombo Government Printer, 1922), p. 26.

^{10/} N.K. Sarkar, *op.cit.*, p. 106.



Source: Annex III, table I.

Fig. 17. Trend in crude birth rates, Sri Lanka, 1953-1974

dity and mortality were drastically reduced in Sri Lanka during the years following the Second World War. These years also witnessed an upsurge in the number of births as well as in the birth rate. While deaths recorded a decline from 135,937 in 1946 to 98,544 in 1947, births recorded an increase from 256,886 in 1946 to 287,695 in 1948. The crude birth rate increased from 37.4 in 1946 to 39.7 in 1948 and remained more or less at that level until 1951. It will thus be seen that while epidemics tended to decrease the fertility, eradication of malaria resulted in an increase in fertility.

Despite the fluctuations, the crude birth rates obtaining in Sri Lanka during the 1896-1955 period have been rather high as might be expected in a country where mortality rates, although on average lower than previously, were still subject to large fluctuations as a result of epidemics. "A few decades ago death rates, particularly infant and child mortality rates, were very high and only a fraction of the babies born could survive to adulthood. High birth rates were therefore an insurance against high death rates. Parents in their old age depended on their grown-up children for support and the cultural preferences for sons also tended to increase the number of children. Under conditions of rural life and subsistence agriculture, children not only cost little but also began to make economic contributions at an early age. People's aspirations were low, expectations of change and improvement were largely absent and relation between excessive child-bearing and maternal and infant health were not well understood. There were hardly any reasons why parents should think about limiting their family size. The weight of community and family pressures were on the side of high fertility and social values and institutions were designed to obtain a high birth rate."^{11/}

4. 1956-1974 period

As was noted earlier, there was a decline in the average quinquennial crude birth rates from 38.1 in 1951-1955 to 36.5 in 1956-1960 and thereafter these rates recorded a steady decline to an average of 28.7 for the four years, 1971-1974. However, an examination of the data for individual years (annex III and figure 17) shows that the crude birth rates were fluctuating haphazardly between 1953 and 1959 followed by a drop in 1960. It was observed by Snodgrass:

"In any case, the decade of the fifties shows no overall birth rate decline as compared with previous decades. And what many students of population consider to be the basic sociological preconditions for a significant fall in the birth rate - the thoroughgoing urbanization and industrialization of the society (is education, which has swept Ceylon in recent years, an additional or alternative precondition?) - do not seem to have been satisfied yet in Ceylon, or at best have been only partially satisfied. On present evidence, then, it seems unlikely that there will be any significant fall in the birth rate in the immediate future and that if it comes at all it will lag well behind the decline in the death rate, perhaps by some decades. An additional reason for believing that Ceylon can expect a continuation of roughly its present high rate of natural increase is that the government has not as yet even taken a stand on the question of a making a conscious effort to reduce the rate of population growth through birth control."^{12/}

Yet the assessment of Snodgrass was proved to be wrong. The crude birth rate did start on a path of steady decline from 1960, except for the insignificant increases in 1968 and again in 1971, to 27.3 in 1974.^{13/} While between 1953 and 1960, the decline in birth rates averaged 0.79 per cent *per annum*, the annual rate of decline increased to 1.84 per cent between 1960 and 1970 and to 2.21 per cent between 1970 and 1974. Thus in recent years there has been an acceleration in the rate of decline of Sri Lanka's crude birth rates.

The declining trends in crude births are also confirmed by changes in the age-specific fertility rates over the various years from 1952, shown in table 118. These rates show that except during the three years, 1961 to 1963, the highest fertility rate has occurred among women in the age group 25-29 years.

^{12/} Donald R. Snodgrass, *Ceylon: An Export Economy in Transition* (Holmwood, Il. Richard D. Irwin, Inc., 1966), pp. 89-90.

^{13/} Snodgrass was not the only one who was pessimistic about the prospects of fertility decline in Sri Lanka. In 1970, Chandrasekaran observed that the "erratic fluctuations in age at marriage of females coupled with a constancy of age specific fertility rates of married women does not lend enough justification to believe that an era of declining birth rate has set in Ceylon. It might well be that what one has witnessed in recent years is but a temporary phase and that the births saved in the past few years by delay in the age at marriage might be made up during the course of the remaining reproductive years of these married women". C. Chandrasekaran, "Report on a visit to Ceylon," (January 1970, unpublished monograph).

^{11/} S. Selvaratnam and S.A. Meegama, "Towards a population policy for Ceylon", *Marga*, vol. I., No. 2, 1971.

Table 118. Age-specific fertility rates, Sri Lanka, 1952-1971

Year	All ages	Under 15	15-19	20-24	25-29	30-34	35-39	40-44	45-49
1952	137.9	0.43	64.6	253.3	297.8	231.1	141.3	37.3	6.4
1953	131.5	0.39	59.8	249.1	298.5	230.5	142.7	35.6	6.4
1954	121.0	0.39	58.1	227.2	272.1	211.2	131.4	33.6	7.3
1955	126.5	0.47	63.8	231.3	282.3	224.8	103.0	38.2	6.5
1956	130.6	0.41	70.4	230.5	273.4	233.4	142.9	40.7	5.8
1957	130.7	0.33	69.3	226.6	269.7	239.8	147.6	41.5	5.8
1958	128.1	0.34	67.5	220.1	261.6	241.3	144.4	41.7	5.8
1959	132.7	0.34	68.5	225.8	271.2	251.6	153.5	42.6	5.7
1960	132.3	0.42	67.9	227.5	261.8	257.5	154.7	43.9	5.9
1961	128.1	0.34	66.3	220.6	249.9	250.2	152.7	42.4	6.1
1962	127.1	0.28	62.1	215.7	244.3	255.9	154.9	47.4	6.6
1963	122.3	0.30	59.0	207.0	233.0	245.2	153.4	46.3	6.3
1964	120.6	0.31	51.2	226.7	276.1	234.6	154.8	46.6	6.7
1965	116.5	0.16	50.0	218.9	269.2	220.7	153.6	41.9	5.9
1966	113.6	0.20	47.9	211.9	262.5	214.9	151.9	44.3	6.5
1967	111.6	0.19	46.7	209.4	257.9	207.0	145.5	44.1	6.5
1968	112.6	0.24	49.2	216.0	255.1	204.8	152.1	44.2	6.5
1969	107.3	0.19	46.1	212.0	249.8	190.5	137.9	40.4	6.1
1970	103.6	0.20	46.4	204.1	237.0	183.0	129.9	45.0	7.1
1971			43.0	178.0	230.0	203.5	140.3	43.3	6.7

Source: Registrar General's Department.

Note: The rates from 1954 to 1963 are based on the age proportions at the 1953 census while those from 1964 to 1971 are based on the 1963 census proportions.

The second highest rate was experienced by those aged 30-34 years during the 1956-1966 period and in 1971, while during the other years this position was occupied by those women aged 20-24 years. It will also be observed that, except for slight variations, generally there has been a fall in the age-specific fertility rates of the younger age groups and a rise in the rates of the older age groups. On the whole, the trend in age-specific fertility rates conforms to, and confirms, the declining trend in fertility observed in recent years.

The fertility decline in Sri Lanka in recent years has been the subject of investigation by several scholars. These studies were carried out at various times and hence the period covered is not uniform in all studies. In 1966, Jayawardene and Selvaratnam, on an examination of the relevant data for the period 1953 to 1963, attributed the observed decline in fertility to an increase in the mean age at marriage of females.^{14/} In 1968, Wright concluded that "the

crude birth rate decline in Ceylon between 1953-1963 occurred, for the most part, because of changes in the age structure and the marital status of women 15-19. Marital fertility changed very little between the two years. These developments clearly slowed Ceylon's rate of population growth". He has also shown that the continuing decline between 1963 and 1968 occurred in spite of, rather than because of, changes in the age structure, and was caused by continuing postponement of marriage and a decline in marital fertility among women over 25, and possibly among women over 20.^{15/}

In 1970, Dallas Fernando analysed fertility trends during the period 1953 and 1968.^{16/} His analysis focussed attention on the repercussion which the higher infant loss experienced during the malaria

^{15/} Nicholas H. Wright, "Recent fertility change in Ceylon and prospects for the National Family Planning Program", *Demography* vol. 5, No. 2, 1968.

^{16/} D.F.S. Fernando, *Fertility Trends in Ceylon 1953-1968 and the National Family Planning Programme*, Monograph No. 17 (Colombo, Department of Census and Statistics, 1970).

^{14/} C.H.S. Jayawardene and S. Selvaratnam, "Fertility levels and trends in Ceylon," paper presented to the IUSSP Conference, Sydney, August 1967.

epidemic of 1934-1938 might have had on the number of women in the reproductive age groups in 1962 and in the following years and consequently on the birth rate during these years. "The virtual decimation of the (1934-1938) female cohort was partly instrumental in the consequent depression in the mothers of the peak child-bearing age-group (25-29) in 1963" and this "decimation had made a marked contribution in lowering the birth rate in 1963". According to Fernando, the other factors which contributed to the decline in the birth rate in 1963 were the rise in the average age at marriage and the decline in the percentage of currently married women in the age groups 25-29 and 20-24 as compared with 1953, and the decline of the percentage share of married women in these age groups compared with women of child-bearing age. "The decimation of the

Table 119. Age-specific marital fertility rates, Sri Lanka, 1963 and 1971

Age group	Age-specific marital fertility rate		Percentage change
	1963	1971	
15-19	354	418	+18.1
20-24	396	388	-2.0
25-29	344	313	-9.0
30-34	270	237	-12.2
35-39	175	157	-10.3
40-44	53	49	-7.5
45-49	8	8	-
General fertility rate (15-44)	166.8	138.7	-16.8
Total fertility rate	5.04	4.22	-16.3

Source: CICRED, *The Population of Sri Lanka*, (Colombo, Department of Census and Statistics, 1974), table 2.13.

female cohort and the upward shift in the average age at marriage would also have tended to depress child-bearing in the years 1960, 1961, 1962 and 1964 as well".^{17/}

It will thus be seen that the decline in fertility between 1953 and 1963 has been attributed to four interrelated demographic factors: (a) increase in the mean age at marriage of women; (b) changes in the age structure of the population during 1953-1963; (c) decline in the proportion of currently married women; and (d) decline in marital fertility.

^{17/} *Ibid.*, p.4.

The decline in fertility during the period 1963-1969 has been the subject of another study in 1972 by Dallas Fernando.^{18/} This study is based on the data of the 1963 census and the 1969 socio-economic survey supplemented by information from the Registrar-General's Department. According to the study "the most significant contributory factor in the decline of the crude birth rate has been a change in the proportions marrying". According to Fernando's analysis, the proportion of women of reproductive age currently married which was 65.2 per cent in 1963 declined to 60.1 per cent in 1969. The corresponding proportion according to the 1971 census was 59.3 per cent. It was also noted that the fall in the percentage of married women in the age group 20-24 which accounts for about 27 per cent of the country's annual births was particularly pronounced with a decline from 57.4 per cent in 1963 to 42.6 per cent in 1969. There was also a large fall in the proportion married at ages 15-19 and 25-29 to which age groups about 35 per cent of the annual births could be attributed. After standardizing for changes in the age and marital structure, Fernando concluded that "the changes in the marital structure have accounted for the whole of the decline in the crude birth rate between 1963 and 1969. Thus, changes in the marital structure have tended to reduce the birth rate while changes in the age structure worked in the opposite direction. Jointly, they tended to reduce the birth rate".^{19/}

A comparison of the age-specific marital fertility rates (ASMFR) for 1963 and 1971 shows that these rates have declined in all the age-segments except the 15-19 age group (table 119) and it has been estimated that these changes contributed to about 40 per cent in the decline in the birth rate between 1963 and 1971. "The analysis indicates that changes in proportions marrying accounted for 100 per cent of the decline in the crude birth rate while changes in the age-structure was responsible for an increase of 40 per cent. Jointly they accounted for 60 per cent of the decline. Thus changes in marital fertility accounted for 40 per cent of the decline in the crude birth rate".^{20/}

^{18/} Dallas F.S. Fernando "Recent fertility decline in Ceylon", in *Population Studies*, vol. XXVI, No. 3, November 1972, pp. 445-453.

^{19/} *Ibid.*, pp. 342-343.

^{20/} CICRED, *The Population of Sri Lanka*, (Colombo, Department of Census and Statistics, 1974), pp. 14-15.

Table 120. Number of children ever-born per mother, 1946

Age	Per registered married mother	Per customary married mother	Per mother
15 - 19	1.30	1.30	1.30
20 - 24	1.99	1.85	1.89
25 - 29	3.11	2.93	2.98
30 - 34	4.16	4.06	4.03
35 - 39	4.97	5.08	4.94
40 - 44	5.36	5.67	5.39
45 - 49	5.55	5.99	5.62
50 - 54	5.60	6.12	5.70
55 - 59	5.74	6.30	5.82
60 - 64	5.60	6.34	5.75
65+	5.62	6.45	5.96

Source: N.K. Sakar, *The Demography of Ceylon* (Colombo, Ceylon Government Press, 1957), table 14.

B. CUMULATIVE AND COMPLETED FERTILITY

1. Cumulative fertility

An attempt has been made in the previous section measure changes in fertility largely on the basis of trends in the crude birth rate. This rate is only a single figure index and does not accurately measure movements in fertility which is of course affected by many variables. A more meaningful measure of changes in fertility could be obtained by analysing the number of children born to ever married women, or, better still, ever married fertile women in various age groups at various points in time. It has, however, to be noted that this index represents the cumulative fertility or the total reproductive performance of a cohort of women up to the stated age as at a particular date, and reflects either changing marital fertility or changing nuptiality patterns or both.

The number of children ever born to women at different ages in 1946 was computed by Sarkar from the 1946 census data on the number of children born by age of mothers. These ratios, presented in table 120, show that generally, the average number of children increases with the age of the mother, that is, the older age groups have a larger number of children than the younger age groups. It will also be observed that up to age group 30-34 years, the registered married mothers had the larger families, whilst for older age groups, the average family size was larger for mothers who were "customary married." It has, however, to be noted that in the first

instance, "the customary married women would in general be expected to be of a lower social class than the registered married women. Secondly, the experiences at successively older ages in the Table are not those of a generation as it passes through life, but of different generations. Thus the substantial increments shown at successive ages upto 55-59 do not of course represent the additions arising from further child-bearing at these advanced ages, but the larger families borne by the earlier generations. Thirdly, the women who have contributed to the table are not all members of each generation but only those who survived until the 1946 census."^{21/}

At the 1953 census, information on fertility was obtained from a 10 per cent sample households. However, a detailed analysis of the fertility data was carried out only in respect of a sub-sample which was intended to represent 1 per cent of the population.^{22/} In this analysis the average number of children born to ever married women was not tabulated by number of ever-married women in each five-year age group, but only by number of ever-married women aged 44 years and under and 45 years and over. The results of this analysis are given in table 121. It will be observed that "women whose marriages were registered had, on the aver-

^{21/} N.K. Sarkar, *op.cit.*, p. 108.

^{22/} S. Kumaraswamy, *Fertility Trends in Ceylon, 1953 Census* (One per cent sample); Monograph No. 8 (Colombo, Department of Census and Statistics, 1956).

Table 121. Average number of children per ever-married woman by conjugal condition, 1953 census (one per cent sample)

Conjugal condition	44 years and under		45 years and over	
	Total female population ever-married	Average number of children per ever-married female	Total female population ever-married	Average number children per ever married female
Married (registered)	14,194	3.59	4,100	6.22
Married (customary)	4,537	3.54	1,133	5.69
Widowed	711	3.68	3,136	5.46
Divorced	72	1.92	37	4.32
Unmarried	26	4.08	19	5.79
All conjugal conditions	19,540	3.58	8,425	5.86

Source: S. Kumaraswamy, *Fertility Trends in Ceylon, 1953 Census*, Monograph No.8 (Colombo, Department of Census and statistics, 1956), table 6.

age, more children than those who were only customarily married. The former who were over 45 years at the census date had 6.22 children on the average. This average is further depressed to 5.86 children per ever married women, if the customarily married, widowed and divorced women are also included. Those under 45 years in all marital statuses had 3.58 children per ever married women. Total fertility to women of all ages and of all marital statuses, was 4.3 children per ever married woman as obtained for the 1953 census".^{23/}

At the 1971 census of population, information on age at first marriage, duration of marriage and number of children born alive were collected from a 10 per cent sample of ever-married women aged 15-49. On the basis of these data, an analysis of the average number of children ever born to ever-married fertile women was carried out recently.^{24/} However, this analysis did not make a differentiation between women whose marriages were registered and those who were customarily married. Nevertheless, the analysis made a distinction between fertile women

in the rural and in the urban areas. The results of this analysis are presented in table 122.

It is clear from table 122 that the average number of children born per mother increases with age both in the urban and rural sectors of Sri Lanka. The average family size is relatively larger for all fertile women aged 30 years and over in the rural than in the urban sector while the reverse is true in regard to women aged 15-29 years.

2. Completed fertility

The reproductive span of a woman is usually the 30 years beginning at age 15. Since for all practical purposes it could be assumed that women will not bear children after the age of 44 years, the total number of children born per woman in any age group higher than 44 years represents their completed fertility achievement, subject of course to any influence mortality may have had on their records. Also since child-bearing is spread over a 30-year period, "the completed fertility rate for any given cohort cannot be assigned to any particular calendar year as a measure of fertility in that year. The rate certainly does not reflect fertility in the year of birth of the cohort, and it tells us little or nothing about fertility in the year the cohort reached child-bearing age (age 14, say) or in the year the cohort completed child bearing (age 45, say)"^{25/}

^{23/} *Ibid.*, p. 13.

^{24/} B. Hanna and T. Nadarajah, "Fertility differentials in Sri Lanka", paper presented to the Seminar on Population Problems of Sri Lanka in the Seventies, Colombo, December 1975. Hanna and Nadarajah also noted: "Since in many cases where the women had no children the enumerator had left the cage blank instead of entering a zero, it was not possible to distinguish between women who actually had no children and cases where the number of children was not known. Hence for the purpose of this analysis only ever-married fertile women (i.e., women with at least one live birth) were included."

^{25/} Henry S. Shryock, Jacob S. Siegel and associates, *op.cit.*, vol. 2, pp. 488-89.

Table 122. Average number of live births per mother aged 15-49 years currently in their first marriage by age, Sri Lanka, urban and rural sectors, 1971 census

Age of mother	Average number of children born		
	Both sectors	Urban sector	Rural sector
15 - 19	1.25	1.29	1.24
20 - 24	1.95	2.04	1.93
25 - 29	3.08	3.03	3.10
30 - 34	4.23	4.02	4.28
35 - 39	5.44	4.94	5.57
40 - 44	5.96	5.36	6.13
45 - 49	6.17	5.61	6.31
Total 15 - 49	4.33	4.06	4.40

Source: B. Hanna and T. Nadarajah, "Some aspects of fertility differentials in Sri Lanka", *Population Problems of Sri Lanka*, (Colombo, Demographic Training and Research Unit, University of Sri Lanka, December 1976), table VI.

On the basis of the 1946 census data, Sarkar computed the following completed fertility rates:-

Reproductive period	Number of children ever-born per mother
1895 - 1925	5.96
1905 - 1935	5.76
1915 - 1945	5.50

It will be noted that there has been a decline in completed fertility over the various reproductive periods. "The decline would have been greater but for the decline in mortality which counteracts it to some extent in the manner described above. Even so the decline in completed fertility cannot be regarded as very steep and could possibly be explained mainly by the rise in the age at first marriages. This rise removes a portion of the potentially most fertile period of a woman's married life, and this tends to reduce the ultimate size of her family".^{26/}

It was estimated on the basis of the sample data of the 1953 census that the completed fertility of a mother or fertile woman who married during 1870-1899 period was 7.14 while that of a woman marrying during 1900 - 1929 period was 6.65. "The average

mother marrying during the years 1900-1929 had 0.49 children less than the average mother marrying during the years 1870-1899; the decline in fertility representing approximately 7 per cent. How far this decline is directly attributable to factors which influence fertility, for example, mortality conditions, fluctuations in marriage rates, and/or the 'selectivity' conditions is a separate subject for study".^{27/}

As noted earlier, in the 1971 census, fertility particulars were collected only in respect to women aged 15-49 years. The average completed family size was 6.17 for all married fertile women aged 45-49 years.^{28/} This completed family size was however higher (6.31) in rural areas than in the urban areas (5.61). In other words, a mother aged 45-49 years in rural Sri Lanka had on the average 0.70 children more than her urban counterpart.

Though in Sri Lanka "the reproductive period is considered to be the 30-year period between the ages of 15 and 45, the social custom of marriage restricts this span. Consequently an important factor in fertility is the age at marriage which determines the *de facto* reproductive period. The younger a woman is at marriage, the more children she is likely to bear assuming, of course, that planned parenthood plays no part in her behaviour".^{29/} It

^{26/} N.K. Sarkar, *op.cit.*, p. 110.

^{27/} S. Kumaraswamy, *op.cit.*, p. 14.

^{28/} B. Hanna and T. Nadarajah, *op.cit.*,

^{29/} C.H.S. Jayewardene and S. Selvaratnam, *op.cit.*, p. 238.

will therefore be interesting to find out the influence of age at marriage of women on their completed fertility. The average number of children born per fertile woman at various ages at marriage are shown in table 123.

in respect of mother who had married at 15-19 years by 0.4 children. "In considering the possible influence on family size of reductions in age at marriage, it would not be correct to conclude that an increase of 5 years in the age of marriage from 15-19

Table 123. Average number of children ever-born per mother, completed fertility period, Sri Lanka

Age at marriage	Those married between		Those aged 45-49 in 1971
	1900-1929	1930-1953	
Under 15	7.3	7.0	7.3
15 - 19	6.8	5.0	7.0
20 - 24	5.4	5.4	6.0
25 - 29	5.8	4.9	4.7
30 - 34	5.3	4.8	3.6
35 - 39	5.5	4.1	2.9
40 - 44	7.5	4.4	-
45 and over	6.5	5.6	-

Sources: S. Kumaraswamy, *Fertility Trends in Ceylon, 1953 Census*, Monograph No. 8 (Colombo, Department of Census and Statistics, 1956), table 10; B. Hanna and T. Nadarajah, "Some aspects of fertility differentials in Sri Lanka". *Population Problems of Sri Lanka* (Colombo, Demographic Training and Research Unit, University of Sri Lanka, December 1976), table VII.

The analysis indicates that generally, there is a gradual decline in the number of children ever born as age at marriage rises. It will, however, be noted that the average number of children born to mothers marrying at 40-44 years and at 45 years and over during the 1900-1929 period has shown an increase relative to those mothers who have married at younger ages in the same marriage period. "There were 14 mothers in these two groups and it is very likely, if ages and marriage-years were correctly reported, that the ages at marriage of these persons are those at which their marriages were legalized."^{30/}

In considering those who married at ages 15-19, it will be noted that the average number of children born to this group declined from 6.8 children in 1900-1929 to 5.0 in 1930-1953, while in 1971 it increased to 7.0. Also the average number of children born to mothers marrying at ages 20-24 was less than to those marrying at ages 15-19 by 1.4 in 1900-1929 and 1.0 in 1971. But in the period 1930-1953, the average number of children born to mothers who had married at ages 20-24 was more than the average

years to 20-24 years had brought about a decline of 1.4 children during 1900-1929, and that raising the age by 5 years would cause a further decline in births to that extent. There does exist an association between age at marriage and completed size of family not, however, in the manner of 'mechanical causation'. In Ceylon, where little or no family planning is practised by the population, an early marriage results in a larger family size than does a late marriage".^{31/}

However, on the basis of the fertility experience of mothers who had passed their reproductive period in 1971, it was observed that "postponement of marriage to beyond 25 years can reduce fertility but not sufficiently to curtail population growth to desired levels. The relationship between age at marriage and family size may be partly biological but other factors may also influence it, for women who marry late are generally more educated and more likely to be in employment and such women are more likely to practise family limitation to some extent."^{32/}

^{31/} *Ibid.*, p. 15.

^{32/} B. Hanna and T. Nadarajah, *op.cit.*

^{30/} S. Kumaraswamy, *op.cit.*, p. 15.

Table 124. Crude birth rates by major ethnic groups, Sri Lanka, 1946-1971

Year	Sinhalese	Sri Lankan Tamils	Indian Tamils	Sri Lankan Moors
1946	38.7	35.6	41.2	41.7
1953	41.0	39.2	33.0	42.7
1963	34.5	37.6	28.3	42.9
1971 ^{a/}	29.9	31.8	25.7	39.0

Sources: The births according to ethnic groups were obtained from the Registrar General's Department. The population by ethnic group for 1946 and 1953 were obtained from the respective census reports. The population for 1963 by ethnic group are from the complete tabulations of the 1963 census while the 1971 rates are from the *Bulletin on Vital Statistics, 1974*.

Note: a/ Provisional.

C. FERTILITY DIFFERENTIALS

1. Ethnic differentials

As was noted in chapter VI, the population of Sri Lanka consists of several ethnic groups each of which possesses a distinctive consciousness which has developed on the basis of differences in social, historical and religious background. However, in terms of numbers, the Sinhalese, the Sri Lankan Tamils, Indian Tamils and Sri Lankan Moors are the major groups, together accounting for 99 per cent of the total population in 1971. Hence only these four major ethnic groups are included in the analysis of ethnic fertility differentials.^{33/}

The crude birth rates of the major ethnic groups in 1946, 1953, 1963 and 1971 are shown in table 124. It will be observed that in all years the crude birth rates of the Sri Lankan Moors have been higher than the rates for the other ethnic groups.^{34/} There was a significant decline in the crude birth rates of all ethnic groups between 1946 and 1971, except that of the Sri Lankan Moors, which regis-

^{33/} The other three ethnic groups, Indian Moors, Burghers and Malays constituted 0.2, 0.4 and 0.3 per cent respectively of the total population in 1971. Hence small errors in the completeness of birth registration and under-enumeration at censuses in relation to these ethnic groups are likely to cause considerable errors in birth rates.

^{34/} On the basis of the 1 per cent sample tabulation of the 1953 census schedules, it was observed "The Sinhalese, as a whole, had a high fertility rate (6.3 children per married woman) which was excelled only by the Moors who, on the average had 6.7 children. The Ceylon Tamils and the Indian Tamils had about the same degree of fertility with 5.8 children and 5.5 children respectively". S. Kumaraswamy, *op.cit.*, p. 22.

tered a relatively small decline from the high level observed in 1946. The higher fertility of the Sri Lankan Moors could be explained by the fact that this ethnic group which professes the Islamic faith is traditionally and conventionally a pro-natalist society. As observed by Sklar:

"Islamic custom facilitates early wedlock because it places control of marriage partners in the hands of parents for whom early marriage of children is in their best interests. Parents are especially anxious for their daughters to marry young, because in Islamic culture, family honour and esteem depend largely on the sexual conduct of women in the household. A daughter or sister who violates or is suspected of violating the sex code of pre-marital chastity brings disgrace not only to the parents and siblings, but to the entire extended kin grouping. Parents are thus intensely concerned to seclude their daughters from possible contact with strange men before marriage, and to marry them off as early as possible".^{35/}

It would therefore appear that early marriages help buttress pro-natalist tendencies and thus high fertility.

2. Regional differentials

For purposes of the analysis, Sri Lanka has been divided into four zones on an agro-climatic basis.^{36/}

^{35/} June L. Sklar, "The role of marriage behaviour in the demographic transition: the case of Eastern Europe around 1900", *Population Studies*, vol. XXVIII, No.2, 1974, pp. 237-238.

^{36/} This division was first adopted in the Consumer Finance Survey conducted in 1963 by the Central Bank of Ceylon.

Table 125. Crude birth rates, general fertility rates (15-44) and total fertility rates by zone, Sri Lanka, 1963 and 1971

Zone	Crude birth rate			General fertility rate			Total fertility rate		
	1963	1971	Percentage change	1963	1971	Percentage change	1963	1971	Percentage change
I	31.7	27.8	-12.3	150.4	125.4	-16.6	4.61	3.86	-16.3
II	40.0	33.9	-15.3	218.3	167.2	-23.4	6.24	5.10	-18.3
III	36.9	33.3	-13.3	188.4	162.1	-14.0	5.52	4.83	-12.5
IV	34.7	30.1	-12.5	168.3	136.5	-18.9	4.98	4.16	-16.5
Sri Lanka	34.4	30.1	-12.5	166.8	138.7	-16.9	5.04	4.22	-16.3

Source: Based on complete tabulation of the 1963 census data and 10 per cent sample tabulations of the 1971 census data. The births by maternal age for 1963 and 1971 were obtained from the Registrar-General's Department.

Zone I comprises the Colombo, Kalutara, Galle and Matara Districts and corresponds to the wet zone lowlands. Zone II consists of the Hambantota, Monaragala, Amparai, Polonnaruwa, Anuradhapura and Puttalam Districts and corresponds to the dry zone (south). Zone III is the dry zone (north) consisting of Jaffna, Mannar, Vavuniya, Batticaloa and Trincomalee Districts which are characterized by an ethnic preponderance of Sri Lankan Tamils and Sri Lankan Moors. Zone IV consists of the Kandy, Matale, Nuwara Eliya, Badulla, Ratnapura, Kegalla and Kurunegala Districts which cover the mountainous region of the island. In 1971, the proportionate share of the country's population living in each region was: Zone I, 37.2 per cent; Zone II, 13.7 per cent; Zone III, 10.4 per cent; and Zone IV, 38.7 per cent.

Fertility indexes such as crude birth rate, general fertility rate (15-44) and total fertility rate for each of the four zones in 1963 and 1971 are shown in table 125. It will be observed that in terms of these indices Zone II had the highest fertility followed in descending order by Zone III, Zone IV and Zone I. In all four zones, fertility appears to have declined during the period 1963-1971.

The age-specific fertility rates and age-specific marital fertility ratios for each year are shown in tables 126 and 127 respectively. It will be seen that with few exceptions, there has been a decline in the age-specific fertility rates during 1963-1971 in all the zones. In Zone I, the age-specific fertility in the 15-19 group has shown an increase while in Zones III and IV, the increase has been in respect of women aged 45-49 years.

The age-specific marital fertility rates for age groups 20 and above also recorded a decline, with a few exceptions, in all zones during 1963-1971, while the rates for the 15-19 group has shown an increase in all years. It will also be noted that the decline has been more marked among the older than among the younger age groups. In terms of broad age groups, decline in marital fertility was very significantly marked among mothers aged 30-44 compared to mothers aged 15-29 years.

3. Urban-rural differentials

As noted in chapter IV, in Sri Lanka, an urban area is defined as one that comes under the administrative jurisdiction of municipal urban or town councils. Though certain factors which are inimical to child-bearing and child-rearing are associated with urbanization in Sri Lanka, "the difference between a rural and an urban area is a difference in degree rather than in kind. Except for Colombo, there are no cities in Ceylon in the Western-sense of the term. The other urban areas and towns can only be called so by courtesy, and are in fact glorified villages with, perhaps, a few more schools, dispensaries, shops and houses than are found in the village proper..."^{37/} Besides most of the urban towns have a mixed population, more rural than urban, as far as the fertility-influencing factors are concerned. These factors have to be taken into consideration in interpreting the fertility data of urban and rural areas.

^{37/} N.K. Sarkar, *op.cit.*, p. 111.

Table 126. Age-specific fertility rates by zone, Sri Lanka, 1963 and 1971

Age group	Zone I			Zone II			Zone III			Zone IV			Sri Lanka		
	1963	1971	Percent- age change	1963	1971	Percent- age change	1963	1971	Percent- age change	1963	1971	Percent- age change	1963	1971	Percent- age change
15 - 19	30.5	32.4	+6.2	98.2	64.3	-34.5	97.0	77.7	-19.9	50.6	36.3	-28.3	52.2	43.0	-17.6
20 - 24	189.9	148.9	-21.6	311.8	237.4	-23.9	258.9	218.9	-15.3	232.1	176.0	-24.2	227.8	178.0	-21.9
25 - 29	256.8	205.3	-20.1	327.5	278.0	-15.1	308.1	263.3	-14.5	276.9	232.1	-16.2	278.4	230.0	-17.4
30 - 34	235.4	197.5	-16.1	278.4	238.4	-14.4	243.6	223.7	-8.2	230.9	194.1	-15.9	239.5	203.5	-15.0
35 - 39	153.6	136.2	-11.3	177.1	152.4	-13.9	150.2	139.1	-7.4	156.3	140.4	-10.2	157.0	140.3	-10.6
40 - 44	49.2	48.4	-1.6	48.1	42.3	-12.1	42.2	36.3	-14.0	42.3	45.1	+6.6	45.8	43.3	-5.5
45 - 49	6.8	4.9	-27.9	7.6	7.5	-1.3	5.1	6.0	+17.6	6.6	8.5	+28.8	6.6	6.7	+1.5

Source: D.F.S. Fernando, *Inter-regional differences in Fertility: The case of Sri Lanka*, Unpublished Monograph.

Table 127. Age-specific marital fertility rates by zone, Sri Lanka, 1963 and 1971

Year	15 - 19	20 - 24	25-29	30-34	35-39	40-44	45-49	15-29	30-44
Zone I									
1963	398	440	354	277	174	57	8	390	182
1971	486	405	313	240	156	55	6	361	155
Percentage change	+22.1	-7.9	-11.5	-13.3	-10.3	-3.5	-25.0	-7.4	-14.8
Zone II									
1963	338	407	261	302	193	56	9	376	204
1971	374	393	327	261	168	49	9	363	170
Percentage change	+10.6	-3.4	-9.4	-13.5	-12.9	-12.5	-	-3.5	-16.6
Zone III									
1963	330	365	351	264	165	50	7	353	175
1971	393	369	320	250	153	41	7	349	156
Percentage change	+19.1	+1.0	-9.4	-5.3	-6.6	-1.8	-	-1.1	-10.9
Zone IV									
1963	350	373	326	255	173	49	8	349	174
1971	423	378	307	223	156	45	10	346	151
Percentage change	+7.7	+1.3	-5.8	-12.5	-9.8	-8.2	+25.0	-0.9	-13.2
Sri Lanka									
1963	354	396	344	270	175	53	8	366	181
1971	418	388	313	237	157	49	8	354	155
Percentage change	+18.1	-2.0	-9.0	-12.2	-10.3	-7.5	-	-3.3	-14.4

Source: D.F.S. Fernando, *Inter-regional differences in Fertility: The case of Sri Lanka*, Unpublished Monograph.

Table 128. Urban and rural fertility, 1946 census

Area	Crude birth rate	Births per woman 15-44 years 1945-1947	Births per married woman 1946	Children ever-born per woman 15-44 years	Children ever-born per married woman 15-44 years	Percentage ever married at age 45-49 years 1946
Urban	31.2	.148	.243	3.54	3.79	93
Rural	37.9	.181	.263	4.86	4.98	97
Ratio of rural to urban	1.22	1.22	1.08	1.38	1.31	1.04

Source: N.K. Sarkar, *The Demography of Ceylon* (Colombo, Ceylon Government Press, 1957), table 17.

It has also to be noted that a significant number of births registered in urban areas do in fact relate to mothers from rural areas "About 65 per cent of all births occur in government medical institutions and there appears to be considerable movement from rural areas to the better-equipped government medical institutions, which are usually located in urban centers, thus bypassing the rural hospitals or maternity homes provided for the purpose. In certain cases, the expectant mothers tend to give the address of a friend or relative in the area where the urban institution is situated instead of her correct home address to avoid being directed to the maternity home or hospital closest to her actual place of residence. It is therefore thought that this movement tends to mask the correct urban-rural nature of the deliveries, thus detracting from the value of the Registrar General's natality statistics in the study of urban-rural differentials".^{38/} For this reason, the registration data are not being used, and the analysis of urban-rural fertility differentials is based on the census data.

On the basis of the 1946 census data, Sarkar computed several fertility indexes for urban and rural areas. These indexes are shown in table 128. It will be seen that fertility of rural women was higher than that of urban women in 1946 due to two reasons: earlier marriage of rural women and a higher percentage of ever married among rural than urban women. The earlier marriage of rural women is indicated by the fact that in 1946, nearly 25.3 per cent of females aged 15-19 in rural areas were married compared with 21.03 per cent in urban areas. It will also be seen from the table that the difference in fertility between the rural and urban

females is always less for the married than for all women, because there are proportionately more married women in the rural areas. This is evident from the last column in the table.

In another study based on the 1946 census data and vital statistics, it was found that for Sri Lanka as a whole the rural fertility was 38 per cent higher than the urban fertility, the number of children ever born per 100 (registered) married women over 44 years old being 564 for rural as against 409 children to urban mothers. After analysing the situation in various districts, the study concluded that "an urban setting had a very marked influence in reducing fertility in most parts of the Island during (roughly) the first four decades of this century."^{39/}

According to the analysis of the 1953 census data (1 per cent sample), shown in table 129, the rural mother had on the average 1.09 children more than the urban mother. The estate^{40/} mother, however, had a slightly lower fertility than the rural mother. This is also borne out by the comparison of crude birth rates for various ethnic groups shown in table 124. "The rural mother married at a later age than the estate mother but despite this she had a higher fertility (6.62 children) than the estate mother who had only 5.90 children. The belief that an early marriage results in more births than a late marriage does not appear to hold good in this instance. The reason has perhaps to be sought from the fact (other factors remaining unchanged), that the estate woman who is a worker would like to conclude her fertility

^{38/} Dallas F.S. Fernando, "A note on differential fertility in Sri Lanka", *Demography*, vol. 11, No.3, August 1974, p. 444.

^{39/} R. Raja Indra, *Fertility Trends in Ceylon*, Monograph No. 3 (Colombo, Department of Census and Statistics, 1954), p. 2.

^{40/} An estate is a commercial plantation (tea, rubber) where the resident population is largely of Indian Tamil origin.

Table 129. Fertility differentials, urban, rural and estate sectors, 1953 census

Sector	Average number children born		Average number of children born to mothers marrying in		Average age at marriage
	Per ever married woman	Per fertile woman	15-19 years	20-24 years	
Urban	5.05	5.53	6.2	5.3	21.7
Rural	6.34	6.62	6.9	6.3	20.2
Estate	5.48	5.90	6.1	6.3	19.2

Source: S. Kumaraswamy, *Fertility Trends in Ceylon, 1953 Census* (One per cent sample), Monograph No. 8 (Colombo, Department of Census and Statistics, 1956), table 19 and 20.

early in order to enable her to be free in pursuing her occupation. In this sense there appears to be a conscious limitation of family-size among this group of persons." ^{41/}

The child-woman ratios for urban and rural areas in all censuses from 1946 given in table 130 also indicate that urban fertility has consistently been lower than rural fertility but there has been a narrowing in the differential over the years.

Table 130. Child-woman ratios, urban and rural sectors, Sri Lanka, census years 1946-1971

Census year	Children aged 0-4 per 1,000 females aged 15-49		
	Urban	Rural	Rural/urban ratio
1946	453	558	123
1953	549	672	123
1963	594	712	120
1971	492	569	116

Source: Computed from age-sex data from the various censuses.

4. Educational differentials

Studies conducted in a large number of countries indicate that there is generally an inverse relationship between fertility and education of the parents. ^{42/}

^{41/} S. Kumaraswamy, *op.cit.*, p. 21.

^{42/} For a summary discussion on this aspect, see United Nations, *Determinants and Consequences of Population Trends*, vol. I, *op.cit.*, pp. 98-99.

The few and limited investigations carried out in Sri Lanka on the basis of census data also tend to confirm this association. The first investigation in this regard was made by Raja Indra ^{43/} on the basis of literacy data obtained at the censuses of 1911, 1921 and 1946. Generation literacy rates were computed for each whole district ^{44/} and against this measure it was observed that there was a definite trend, generation fertility falling as literacy rose. It was also noted that urban birth rates during 1945-1947 also declined steadily with a decline in illiteracy. However, the gross reproduction rates for 1945-1947 and 1950-1952 showed only a slightly falling trend as literacy increased.

A somewhat more detailed analysis of the relationship between educational attainment of women and average number of children born to them was made by Kumaraswamy ^{45/} on the basis of 1 per cent sample tabulation of the 1953 census data. The findings are summarized in table 131. It will be noted that fertility was highest amongst illiterate women, declining gradually with improvement in literacy. The women who had attained intermediate or higher educational levels had the lowest fertility, viz. 3.18 children per fertile woman. The decline in the family-size with improvement in education was steady but it was more pronounced when educational attainment, changed from the school to the collegiate level.

^{43/} R. Raja Indra, *op.cit.*

^{44/} Generation literacy rates for the districts were computed as follows: the mean of the general literacy rates at the Censuses of 1911, 1921 and 1946 was added to 3 1/2 times of the English literacy rate at the 1946 census.

^{45/} S. Kumaraswamy, *op.cit.*

Table 131. Educational attainment of women and average number of children born, 1953 census

Educational attainment of women	Average number of children		Average number of children per fertile woman marrying in		Average age at marriage per ever married woman
	Per ever married woman	Per fertile woman	15-19 years	20-24 years	
			1st-3rd standard	6.45		6.16	6.5	6.5	20.4
4th-7th standard	5.97	5.65	6.4	5.7	21.0
Junior, senior and equivalent standard	5.49	4.95	6.3	5.2	21.5
Intermediate and higher standard	3.88	3.18	3.0	3.0	25.2
Not stated	6.66	6.41	6.6	6.6	20.1
Illiterates	6.71	6.39	7.1	6.5	20.0

Source: S. Kumaraswamy, *Fertility Trends in Ceylon, 1953 Census*, Monograph No. 8 (Colombo, Department of Census and Statistics, 1956), tables 15 and 16.

Table 132. Number of live-births born by ever-married woman ^{a/} according to age and educational attainment ^{b/}, Sri Lanka, 1971 census

Age group	No schooling	Grade (I-IV)	Grade (V-IX)	Passed GCE 'OL'	Passed GCE 'AL' and higher
15-19	0.633	0.624	0.534	0.380	
20-24	1.681	1.634	1.365	0.942	0.519
25-29	3.100	3.077	2.480	1.580	0.940
30-34	4.463	4.426	3.665	2.415	1.859
35-39	5.706	5.450	4.593	3.221	2.561
40-44	6.035	5.678	5.080	3.594	3.099
45-49	5.973	5.758	5.084	4.094	3.240

Source: Based on 10 per cent sample tabulations of the 1971 census data.

Notes: ^{a/} The data was adjusted for ever-married women who had not stated the live births borne for each level of educational attainment. See footnote 48 of chapter IX.

^{b/} In Sri Lanka, grades I to V are primary grades while grades VI to XII are secondary grades each covering a period of one year. The General Certificate of Education (Ordinary Level) examination is taken at the completion of grade X. Passing in six subjects or more will signify the successful completion of the General Certificate of Education (Ordinary Level). At the completion of Grade XII the General Certificate of Education (Advanced Level) is taken and passing in three subjects or more testifies to the successful completion of the General Certificate of Education (Advanced Level) and usually qualifies the examinee for University admission.

Table 133. Average number of children born alive per ever-married fertile woman aged 45-49 years by ethnic group and socio-economic status, Sri Lanka, 1971

Socio-economic status	Sinhalese	Sri Lankan Tamils	Indian Tamils	Sri Lankan Moors
Educated and economically active	4.15	5.24	3.50	4.10
Educated but not economically active	5.18	5.26	4.87	4.29
Uneducated but economically active	6.83	6.34	6.02	6.67
Uneducated and economically not active	6.57	6.13	6.29	6.93

Source: B. Hanna and T. Nadarajah, "Some aspects of fertility differentials in Sri Lanka", *Population Problems in Sri Lanka* (Colombo, Demographic Training and Research Unit, University of Sri Lanka, December 1976), table II.

The analysis also indicated that about 52 per cent of the illiterate women gave birth to at least 7 children compared to only 40 per cent of women in the fourth to seventh standard education group and 29 per cent in the junior, senior and equivalent standard group. Large families among the educated women were rare "presumably because education rationalizes life outlook and opens up wider opportunities. With free education the standard of literacy in Ceylon would considerably improve and thus is likely to act as a strong factor in influencing family size of the next generation".^{46/} It will also be noted from table 131 that the difference in the marriage ages of women with a primary level and secondary level of education was only a year or so; the former married at 20 years while the latter married at 21 years. Relatively, however, a sharp increase was noted in the marriage ages of the women of higher educational levels which must have in some measure contributed to the equally sharp decline in their family-sizes as observed earlier.

^{46/} *Ibid.*, p. 19.

^{47/} There was a category of women for each level of educational attainment where the live births born was unspecified. This tendency is quite common in developing countries and adjustments were therefore made by applying techniques developed by El Badry. See M.A. El-Badry, "Failure of enumerators to make entries ZERO : Errors in recording childless cases in population censuses", *Journal of American Statistical Association*, vol. 56. December 1961.

At the 1971 Census, information on live-births ever born by ever-married women were collected.^{47/} An analysis of this information by age educational attainment of ever-married women is shown in table 132. It will be seen that although educational attainment of the first to fourth grade level had a minimal impact on fertility decline in relation to the "no schooling" category, significant declines occurred among women who attained the next three higher levels.

An analysis of completed fertility by educational status and activity status given in table 133 also indicates a definite relationship between educational level and fertility. The difference of two to three children between the high and low socio-economic class is quite significant. On the other hand, employment appears to exercise only a minor influence on family size. Among the uneducated Sinhalese and Sri Lankan Tamil mothers, economically active women have a higher fertility than the inactive women, while among the uneducated women among Indian Tamils and Sri Lankan Moors, fertility is higher in respect of those who are economically inactive. It is well known that a substantial proportion of the economically active Sinhalese and Sri Lankan Tamil women are unpaid family workers while a majority of the economically active Indian Tamil women are paid employees. Thus it would appear that the strength of the relationship between female employment and fertility depends primarily on the nature of economic activity.

CHAPTER X

POPULATION POLICY AND FAMILY PLANNING

A. POPULATION POLICY

1. Introduction

In the latter half of the nineteenth century, the population of Sri Lanka was not only small in size but was also growing at a very low rate.^{1/} Population growth did not then pose any serious problems. In fact, a pro-natalist policy seemed justifiable in the face of the increasing demand for labour created by the development of the plantation industries. This deficiency in human resources was however made good by the government of the day not by increasing the local population but by importing cheap labour on a large scale from South India. During the early part of the twentieth century the rate of population growth was again low because of high death rates as well as a slowing down in the flow of immigrants.

Yet, as in most developing countries, the period following the Second World War witnessed an unprecedented rate of growth of the population in Sri Lanka. This was due to a sharp and continuous decline in the death rates while the birth rate remained more or less constant at traditionally high levels. The rapid increase in population posed a serious challenge to the development efforts of the country in a context "when the cheap land for plantations was exhausted, when cheap labour was no longer available, when the demand for our raw materials was decreasing because of technological advances on the one hand and the multiplicity of sources on the other"^{2/}. A policy of moderating the rate of population growth therefore appeared to be essential

The government of independent Sri Lanka has long been aware of the potential problems of unrestrained population growth, both at national and global levels. In his address to the Fourth Plenary Session of the Second World Health Assembly held in Rome in 1949, Mr. S.W.R.D. Bandaranaike, Minister of Health in the first government of independent Sri Lanka, said:

"Another subject I should see some consideration of is one on which we have been hitherto

^{1/} For details, see chapter I.

^{2/} O.E.R. Abhayaratne and C.H.S. Jayewardene, *Family Planning in Ceylon* (Colombo, The Colombo Apothecaries Co., Ltd., 1968), p. 15.

discreetly silent. There is a growing need for the consideration of the problem of birth control on an international plane. Do you realize that the very health work we are doing is making that problem increasingly urgent? Without asking for any decision in this Assembly, I do suggest that the subject receive some consideration, that a beginning be made in the preparation of the necessary statistics and data with the help of the appropriate Specialised Agencies of the United Nations, so that later on, even next year, we can consider this problem which is becoming a most urgent one in the world to-day."

Mr. Bandaranaike's effort to urge a world forum to address itself to the population problem, however, received no support and his proposal was turned down by the Assembly. The issue was raised by him again in 1951 at the WHO Meeting held in Kandy (Sri Lanka) but again without support.

2. Policies affecting migration

At the national level, however, the government has in the past appeared to have attempted to "solve" the problem of rapidly increasing population by migration laws^{3/}. These laws on the one hand sought to restrict the number of persons who came into the country for permanent settlement and on the other to repatriate the persons of Indian origin still resident in the country. As far back as 1941, an Immigration Bill and a Bill for the Registration of Non-Ceylonese in Ceylon were introduced in the State Council, the country's legislature. The Immigration Bill had as its main purpose the controlling and regulating the entry of non-nationals into the country^{4/}. With the outbreak of the Second World War, both Bills lapsed at the Standing Committee stages.

^{3/} It may be noted none of the migration laws had as their explicit objective the solution of the population problem.

^{4/} While speaking on this Bill, Mr. Bandaranaike said, "Is there any country in the world where the grotesque position is adopted that where there are thousands of starving people of your own, where annually the vote goes up by millions for direct and indirect relief of unemployment and distress caused through unemployment, you are going to tolerate in your country outsiders who form very nearly one-sixth of your permanent population employed in remunerative employment?" 20 March 1941.

In August 1948, exactly six months after the country achieved independence, the Citizenship Act ^{5/} was passed by the Sri Lankan Parliament to confer citizenship either by descent or by registration. The Indian and Pakistani Residents (Citizenship) Act No. 3 of 1949 was enacted to make provision for "the admission to citizenship by registration of Indian and Pakistani residents settled for a period short of that requisite for the attraction of citizenship by descent by operation of law under the Citizenship Act itself". The Immigration and Emigration Act No. 20 of 1948 drew a distinction between citizens and non-citizens in the matter of movement into and outside the country. For emigration purposes, both groups should possess valid passports or other valid travel documents. All non-citizens desiring entry into Sri Lanka must have a valid passport and, if required, a visa or resident permit. But citizens desiring entry need not have any visas. "The Act was probably intended to stem the tide of fresh immigration from India and not to empower the forcible repatriation of Indians already in Ceylon."^{6/}

Sporadic attempts have been made from time to time to resolve the status regarding the Indian immigrants in Sri Lanka. It was only in October 1964 that any significant steps were taken in this direction. Pursuant to the discussions between the Prime Minister of Sri Lanka, Mrs. Srimavo Bandaranaike and the Indian Prime Minister, Mr. Lal Bahadur Shastri, an Agreement was drawn up to determine the status of all persons of Indian origin. The Agreement envisages the repatriation to India over a 15-year period of about 525,000 persons of Indian origin, and the conferment of Sri Lankan citizenship on about 300,000 of these persons. This agreement is at present being implemented. Though an annual exodus of nearly 40,000 was anticipated, the number of persons repatriated between 1965 and 1970 was only 15,345. Since May 1970, there has been an acceleration in the rate of repatriation. Between June 1970 and January 1973, nearly 58,000 persons were repatriated, the average number of repatriates being about 23,000 persons *per annum*.

3. Policies affecting natural increase

In Sri Lanka, policies relating to migration were never intended as solutions to the problems of increasing population. In spite of the various restrictions imposed on immigration, the population in-

^{5/} The Citizenship Act No. 18 of 1948.

^{6/} S.U. Kodikara, "Indo-Ceylon relations since Independence", *Ceylon Journal of Social and Historical Studies*.

creased very rapidly during the decades following the Second World War due, as noted earlier, to high birth rates and declining death rates. Population policies had therefore to be largely related to changes in the components of natural increase, viz. death rates and birth rates^{7/}. Official recognition of the problems associated with this rapid population growth is reflected in the several development plans prepared from time to time. The first development programme formulated by the government, the Six-Year Programme of Investment 1954/55 to 1959/60, stated:

"Population growth in the country has been exceptionally rapid in recent years whilst average standards of living remain relatively low. The broad solution to this problem is an expansion in the productive capacity of the economy. The rate of such an expansion must be sufficiently rapid not merely to keep pace with, but also outstrip population growth"^{8/}

It is thus evident that the Programme expected to meet the problems resulting from rapidly increasing population by an expansion of the productive capacity of the economy. However, greater emphasis was proposed to be given to maternal and child health and in this context the Programme stated that "Family Planning plays an important part in bringing forth healthier babies and in maintaining the health and well-being of the mother. Education of the parents to space and limit the family is to be carried out wherever necessary."^{9/}

The most detailed and comprehensive treatment of the implications of the rapid increase in population after 1946 is however, to be found in the Ten-Year Plan prepared and published in 1959 during the premiership of Mr. S.W.R.D. Bandaranaike. "Indeed written as it was at a time when 'the demographic obstacle to economic betterment' (to use the phrase of the American economist, J.J. Spengler) was typically given rather short shrift by development economists, the strong emphasis given in the plan to population problems is noteworthy, and consistent with the economic sophistication and realism

^{7/} For discussion on this aspect, see S. Selvaratnam and S.A. Meegama, "Towards a population policy for Ceylon", *Marga*, vol. 1, No. 2, 1971.

^{8/} Government of Ceylon, *Six-Year Programme of Investment, 1954/55 to 1959/60*, (Colombo, Planning Secretariat, 1955), p. 3.

^{9/} *Ibid.*, p. 404.

that characterized the plan as a whole"^{10/}. The Plan emphasized that increasing population density, excessive fragmentation of land holdings and the enormous gap between food supplies and requirements were not the only problems created by accelerated population growth. More important, however, were the problems associated with the high proportion of young dependants, viz., savings and investment. The Plan concluded:

"It is clear that unless there is some prospect of a slowing down in the rate of population growth and of relative stability in at least the long run, it is difficult to envisage substantial benefits from planning and development. It is not so much the size of the population in an absolute sense but rather the rate of increase that tends to frustrate attempts to step up the rate of investment and to increase incomes per head. Apart from the difficult process of cutting present levels of consumption, the source for increasing the volume of investment is the 'ploughing back' of portions of future increases in incomes. The task is handicapped if these increases have instead to be devoted each year to sustaining a larger population".^{11/}

The Ten-Year Plan also emphasized the need to formulate population policies and action programmes aimed at dampening the excessive rate of population increase. The plan discussed the several factors that were favourable to the attainment of this goal, and said:

"Given conditions such as these, population policies and planning campaigns may produce effective results. Their role would essentially be to strengthen the factors favouring a decline in birth rates in the interests of both individual family and society as a whole. Such campaigns disseminate information on methods of birth control and help in making birth control devices readily and cheaply available. In western countries the decline in birth rates was brought about by methods of birth control known at the time rather than by a use of modern devices of contraception. The latter constitutes a relatively new factor in the situation which may make possible a more rapid fall in birth rates than in the west. In

short, the purpose of a family planning campaign should be to encourage and aid attitudes and outlooks that may otherwise be slow in emerging. The course of the birth rate could in this way be made different to what it may otherwise be"^{12/}.

The Ten-Year Plan further suggested that "the whole question of population policy in all its aspect be made the subject of a nationwide discussion perhaps through the medium of a competent Committee of Inquiry". It was envisaged that this Committee "should receive evidence from the public, undertake statistical studies, analyse the economic implications of population growth and present details of a future programme of action. It would provide a valuable medium for promoting increased public awareness of this vital problem"^{13/}

Due to the political changes which followed almost immediately after its publication, the Ten-Year Plan was not implemented. It was, however, replaced in 1962 by the Short Term Implementation Programme prepared under the premiership of Mrs. Srimavo Bandaranaike. This Programme recognized the magnitude of the country's economic problem and its integral connexion with the rate of population expansion.

"Population growth has obviously an impact on the magnitude of the economic, social and financial problems which we have to solve. For instance, Government current expenditure on food subsidies, education and health is now considerably higher than it would have been if our population had increased at a lower rate. The same applies to our import requirements and the scarcity of foreign exchange"^{14/}.

The Five-Year Plan prepared in 1971 during the second premiership of Mrs. Bandaranaike aptly described the threat posed by accelerated population growth as follows:

"The continued growth of population at the present high rates will pose problems which would defy every attempt at solution. In the short-term, any further increase of the number of births from the present level of around 370,000 per year will place inordinate strains

^{10/} Gavin W. Jones and S. Selvaratnam, *Population Growth and Economic Development in Ceylon*, (Colombo, Hansa Publishers Ltd., 1972), p. 33.

^{11/} Government of Ceylon, *The Ten-Year Plan* (Colombo, National Planning Council, 1959), p. 16.

^{12/} *Ibid.*, p. 17.

^{13/} *Ibid.*, p. 17.

^{14/} The Department of National Planning, *The Short Term Implementation Programme* (Colombo, 1962), p. 16.

on the school system, on hospitals, and the supply of other goods and services, and in such a situation, it is only by a shift of investment from productive activities that it would be possible to maintain these services even at present levels. In the long run, the expansion of population at present rates would result in a population of about 27 million in the year 2000. Even with a rapid decline in fertility rates the population would grow to 20 million by the year 2000. The strain on resources imposed by the present rate of population growth would be almost intolerable. The plan thus gives very high priority to the diffusion of family planning facilities amongst the mass of the adult population”^{15/}.

The Plan further observed that “A high birth rate in the context of low standards of living and malnutrition can lead to a general deterioration in the health of the population and to an increase in the incidence of disease and to a rise in infant mortality. It is essential therefore that facilities for family planning should be made available to all groups in the population and not be confined to the privileged sections of society.”^{16/}.

B. FAMILY PLANNING POLICY

1. Family Planning Association

It is evident from the discussions in the previous section that successive governments have considered the implications of rapid population growth in their plans for the economic and social development of the country. However, there was for a long time no official government policy on the subject despite official admissions that economic development has not kept pace with population growth. In the meantime activities connected with family planning were carried out by the Family Planning Association which was founded as a voluntary organization in 1953. In 1954, the government made available to this Association an annual grant of Rs 2,500 which was increased to Rs7,500 in 1956, to Rs 10,000 in 1957 and to Rs 75,000 in 1958. In 1964, the Family Planning Association was made an approved charity.^{17/}

^{15/} Ministry of Planning and Employment, *The Five-Year Plan* (Colombo, November 1971), p. 21.

^{16/} *Ibid.*, pp. 120-121.

^{17/} The government's recognition of the Association as an approved charity enables contributors to claim exemption from income tax of the amounts donated by them to the Association.

Between 1953 and 1965, with indirect support from the government, the Family Planning Association of Ceylon organized and implemented pioneer work in the field of family planning. All government medical officers of health were circularized to co-operate with the work of the Association which was also permitted to use the facilities available at the government medical institutions. To a large extent, the activities of the Association were focussed on educating the people on matters pertaining to family welfare and family limitations, the motto being “Some children where there are none, and fewer children where there are too many”. A large number of clinics were also set up by the Association in various parts of the country for the execution of its programme of planned parenthood.^{18/} The number of clinics conducted by the Association from 1953 to 1966 are indicated in table 134.

Table 134 Clinics conducted by the Family Planning Association, 1953/54-1965/66

Year	New clinics opened	Clinics closed	Clinics re-started	Clinics functioning
1953/54	3	-	-	3
1954/55	-	-	-	3
1955/56	4	-	-	7
1956/57	18	1	-	24
1957/58	7	8	-	23
1958/59	2	4	2	23
1959/60	6	6	1	24
1960/61	22	2	4	48
1961/62	7	6	4	53
1962/63	8	7	2	56
1963/64	29	11	3	77
1964/65	33	17	4	97
1965/66	20	15	7	109
Total	159	77	27	

Source: O.E.R. Abhayaratne and C.H.S. Jayewardene, *Family Planning in Ceylon* (Colombo, The Colombo Apothecaries Co., Ltd., 1968), p. 7.

2. Sweden/Ceylon Pilot Project

In 1958, the government, realizing the importance of family planning, entered into an agreement with the Royal Government of Sweden to “co-operate in order to promote and facilitate a pilot project in Community Family Planning to take place in two or more rural areas in Ceylon with the aim of extending such activities on the basis of the ex-

^{18/} For detailed discussion on the activities of the Family Planning Association since its inception, see O.E.R. Abhayaratne and C.H.S. Jayewardene, *Family Planning in Ceylon*, *op. cit.*

perience found on a nation-wide scale".^{20/} In terms of this bilateral agreement, the Sweden/Ceylon Family Planning Pilot Project commenced operations in June 1958 on an action-cum-research programme. Two areas were selected for the purpose in consultation with the Ministry of Health and the Family Planning Association. The first was Bandaragama, a village area, about 25 miles south of Colombo with a 100 per cent Sinhalese Buddhist population engaged primarily in the cultivation of paddy. The other was Diyagama, an up-country tea estate where the resident labour population were mostly Hindus of Indian Tamil origin. The Project was extended to cover the Medical Health Officer's area of Point Pedro in north Sri Lanka in 1962, and Polonnaruwa and Matara Districts in 1963.

The activities of the Project included a census of population and a survey to assess the attitudes of the people towards family planning in the selected areas. These inquiries were followed by the establishment in each of these areas of a family welfare centre. This centre included an ante-natal clinic, a post-natal clinic with family planning and a child-welfare clinic. At this centre, women who had earlier expressed their interest in birth control methods were invited to discuss the subject in private with a specially appointed female doctor who, after examining them, would advise them on the type of contraceptive to be used. The first visit was followed by further check-up visits.^{21/}

An evaluation of the activities of the Project clearly showed that family limitation to a satisfactory level could be achieved by methods acceptable to the people within a reasonable period of time. For instance, the crude birth rate declined from 28.6 in 1959 to 20.4 in 1964 at Bandaragama, and from 36.6 to 29.8 at Diyagama over the same period. In 1965, the government renewed its agreement with the Royal Government of Sweden for a further period of three years ending August 1968 and subsequently further extensions were obtained. According to the renewed agreement, Swedish assistance was to be utilized to purchase from abroad the necessary equipment, contraceptives, audio-visual aids, vehicles and other

^{20/} Arne Kinch, "A preliminary report on the Sweden-Ceylon family planning pilot project" in C.V. Kiser (ed.), *Research in Family Planning* (Princeton, Princeton University Press, 1962).

^{21/} For further details regarding this Project, see Arne Kinch, "Ceylon", in Bernard Berelson and others (eds.) *Family Planning and Population Programmes A Review of World Developments* (Chicago, University of Chicago Press, 1966); and Arne Kinch, *loc.cit.*

materials for the successful implementation of the national family planning programme. Training of medical and para-medical personnel was also commenced with Swedish International Development Authority (SIDA) assistance.

3. Direct involvement of government

In 1965, the new government under the premiership of Mr. Dudley Senanayake continued the official support for the Family Planning Programme. In 1965, by a cabinet policy decision, family planning became a national policy. In February 1966, the Minister of Health appointed an advisory committee consisting of representatives of the Family Planning Association, Sweden/Ceylon Family Planning Pilot Project, the Ministry of Planning and of the Ministry of Health with the Director of Health Services as chairman, in order to advise him on the establishment and execution of a national programme for family planning work. In August 1966, the Advisory Committee submitted to the Minister a "Plan and Programme for National Family Planning Project". The main recommendations of the Plan included:

(a) A "demographic target" aimed at a gradual reduction in the birth rate from 33 per thousand in 1965 to 25 per thousand in 1976;

(b) Targets for the use of different methods, viz., 60 per cent for IUCD; 25 per cent for orals; 5 per cent for sterilization and 10 per cent for other methods;

(c) Division of the country into three regions for the purpose of implementing the programme and the commencement of work in the three regions to be staggered over a period of three years;

(d) Appointment of an officer at least at the level of an assistant director to the Office of the Director of Health Services exclusively for the execution of the family planning programme;

(e) Training of adequate number of medical and para-medical personnel for the satisfactory execution of the programme.

The main recommendations of the Committee were accepted by the government as the basis for implementing the family planning programme in the country. In 1968, a Family Planning Bureau was established within the Ministry of Health to co-ordinate and direct the activities of the national programme. An assistant director was appointed to be in over-all charge of the programme. The govern-

ment sought to integrate family planning with the already existing well developed maternal and child health services for the following reasons:

(a) The existing social and medical patterns in the country being favourable for the success of a family health based Family Planning Programme. The "patient" mothers had confidence in the doctor and midwife particularly in regard to the inhibiting discussion of contraception;

(b) The excellent infra-structure of health facilities in the country, placing free health services within easy reach of most of the population;

(c) Approximately 75 per cent of births in the country occurring in health institutions.

In 1969, the Department of Health appointed a medical officer (maternal and child health) to each of the 15 health divisions in the country. These officers were to organize and ensure in their own areas that:

(a) Every expectant and nursing mother maintains good health; learns the art of child care, has normal delivery and bears healthy children;

(b) Every child, wherever possible lives and grows up in a family unit with love and security in healthy surroundings, receive adequate nourishment, health supervision and efficient medical attention and is taught the elements of healthy living;

(c) Adequate clinic and field services in family planning are available.

There was, however, a change in the attitude of the government towards family planning on the eve of the 1970 general elections due perhaps to pressures brought to bear by communal, religious and racial forces. Publicity for family planning was reduced to a minimum and public statements negating official policy were made by the Prime Minister and some of his cabinet colleagues. For instance, at the inaugural ceremony of a major irrigation project, the Prime Minister, Mr. Dudley Senanayake was reported to have said:

"The ever increasing birth rate will be no problem when the Mahaveli Diversion Scheme is complete...My fear is that when the scheme comes to bear fruit, the country will be faced with a scarcity of workers to fit themselves to new jobs."^{22/}

^{22/} *Ceylon Daily Mirror*, 6 July 1969.

The Minister of Health was reported to have stated that "Sinhalese and Tamils must keep their races growing To fulfil this noble task, their women must be provided with all facilities to propagate the races"^{23/}

A new government under the premiership of Mrs. Bandaranaike was elected in 1970. Initially this government appeared to have had some reservations on the methods of approach to family planning.^{24/} However, in July 1970, the government issued the following policy statement:

"While agreeing that family planning *per se* is not considered to be the solution to the economic ills of the country, family planning facilities should be made available for parents to make use of advice given on maternal and child health welfare which is in the interest of the mother and child.....These facilities will be intensified to reach the parents in the rural areas as well as in the estates."

The Family Health Bureau was re-named the Maternal and Child Health Bureau as it was felt that maternity and child health services and family planning could best be provided through the re-organized Maternal and Child Health Services. The Advisory Committee on Family Planning was replaced by a National Advisory Committee on Maternal and Child Health.

In 1971, at the request of the government, a United Nations Inter-Agency Mission visited Sri Lanka to "make a comprehensive review of the National Family Planning Programme, particularly its (a) over-all organization and policy; (b) implementation and (c) evaluation and research programme".^{25/} The Mission made several far-reaching recommendations which have mostly been accepted by the government for re-organizing the health services in the field of family planning,

In February 1973, a Project Agreement was concluded between the Government of Sri Lanka and the

^{23/} *Ceylon Daily Mirror*, 6 August 1969.

^{24/} Targets established in the national programme of 1966 were discontinued and advertising etc. was restrained.

^{25/} United Nations, *Family Planning Evaluation Mission to Ceylon*, A report prepared for the Government of Ceylon by a United Nations Inter-Agency Mission appointed under the United Nations Programme of Technical Co-operation with financial assistance of the United Nations Fund for Population Activities. Report No. TAO/CEY/14, 15 June 1971.

United Nations Fund for Population Activities (UNFPA). According to this Agreement, the UNFPA undertook to provide assistance over a period of four years starting January 1973 for the following projects:

- (a) National health manpower study;
- (b) Strengthening of nursing and midwifery education;
- (c) Family health;
- (d) Family health education;
- (e) Workers education in population and family planning in the urban sector;
- (f) Workers education in population and family planning in the estate sector;
- (g) Communication strategy;
- (h) Population education in schools;
- (i) Demographic training and research unit;
- (j) Teaching of human reproduction, family planning and population dynamics in medical schools;
- (k) Law and population.

It will be observed that UNFPA assistance is not for family planning *per se* but for strengthening and improving the various supporting services so essential for the successful implementation of the national family planning programme. The total value of the assistance, \$US 6 million will supplement the government's own annual expenditure in the field of population activities.

The rationale for the government's approach to family planning was stated by a former adviser to the Ministry of Planning as follows:

"An important aspect of the demographic problem in Sri Lanka is the condition of high fertility among the low income families which according to available evidence do not want more children than families with higher incomes. But the low income groups have more children because they often do not have the funds and even more crucially the necessary information to plan their families effectively according to their desires. The freedom to limit family size to the number of children wanted when they are wanted is a basic human right.

In our country effective birth control knowledge has been too long the vested rights of the educated and well to do families which have been exercising this right as a matter of course. It was in this context the Government decided in July 1970 that in the interest of the mother and child, facilities should be provided in urban, rural and estate areas for parents to avail themselves of advice on matters pertaining to maternal and child health. This decision is reflected in the Five Year Plan which stated 'The Plan gives very high priority to the diffusion of family planning facilities among the mass of the adult population' " ^{26/}

"The Government has taken a positive view and a bold step in accepting family planning as an important component within the wider scope of Family Health Programmes". ^{27/} It is in the light of this approach that government policy has not concerned itself with monetary incentives and anti-natal legislation. Recent reports indicate that in-built continuity and statistically significant results have been accomplished in regard to well established government programmes without resort to such measures. The main emphasis in the government programmes is the socio-economic and cultural factors as clearly pointed out by the Prime Minister:

"There is a great deal of confusion in the popular mind that all family planning has to do is with the prevention of births. I think it is very necessary to dispel ignorance on this particular aspect and educate people to the fact that family planning is a vital element in ensuring the health and well-being of the mother as well as the children....in carrying forward activities connected with family planning, it is virtually necessary that we do not over-emphasize the scientific as opposed to the socio-economic factors. For if we lost sight of the socio-economic background of the people, their cultural pattern, traditional belief and their religious attitudes, no amount of scientific reasoning would help to make these programmes either possible or even understood. It is in the context of these considerations

^{26/} S. Selvaratnam, "Our national population programme" in *Report of The National Labour-Management Seminar on Population and Family Planning* (Colombo, March 1973) p. 30.

^{27/} From the Statement of Mrs. Siva Cooyesekere, Deputy Minister of Health and Leader of the Sri Lanka delegation to the World Population Conference, Bucharest, August 1974.

that strategy should be designed to tackle problems relating to population".^{28/}

C. FAMILY PLANNING PROGRAMME ACTIVITIES

1. Family health programme

As noted earlier, the government's main approach to family planning is through a comprehensively integrated total community family health service programme. This programme owes its origin to the concept of community health put forward by the then Deputy Minister of Health in 1971 for purposes of developing total health care in rural communities. In terms of this concept, 16 pilot projects, one in each superintendent of Health Service division, were organized to co-ordinate activities in all fields of family health, including family planning, health education, nutrition, immunization, environment etc. In 1972, 100 such pilot projects were started, one in each Medical Officer of Health area. On the basis of the experience gained and success achieved from these projects, a new dimension was given to government's family planning work by integrating such activity with a comprehensive total family health service programme. In accordance with this new approach, the Maternal and Child Health Bureau was re-named the Family Health Bureau.

The Family Health Service Programme, in a broad sense, aims at better maternal and child health, improved nutrition of the family, immunization, improvement of the family environment, personal hygiene, school health, health education and family planning. The Programme consists of five sub-programmes, viz, (a) training; (b) health education; (c) supplies and services; (d) plantation (estate) sector; and (e) evaluation and research.

a. Training

The training of health personnel is an essential pre-requisite for the successful implementation of a family health programme. The expanded scope of the programme made it necessary to retrain in family health all manpower, including field staff, involved in the provision of health services in all hospitals and peripheral health centres. The Ministry of Health has in its employment a large number of health personnel of various categories.^{29/} The first

^{28/} Inaugural Address, First International Scientific Congress, Colombo, January 1974.

^{29/} For detailed discussion on health manpower in Sri Lanka, see L.A. Simeonov, *Better Health for Sri Lanka, Report on a Health Manpower Study* (New Delhi, WHO Regional Office for South-East Asia, November 1975).

step in the training process was therefore to train a nucleus of trainers who would undertake the training of the various health personnel in different parts of the country. The training of trainers commenced in November 1973 and was continued until December 1974. By 1975, a systematic training scheme had been fully launched. The number of medical and para-medical personnel trained in 1975 were as follows:

Medical officers	340
Nurses (institutional and field)	1,587
Registered medical practitioners and assistant medical practitioners	211
Midwives	898
Public health inspectors	205
Total	3,241

In regard to the training of other categories of health personnel, 16 training centres have been established in various Superintendent of Health Service divisions. These training centres are supervised and assisted by medical officers of family health bureaux. The training team at each of the centres consists of, besides one each of the personnel mentioned in the preceding paragraph, an obstetrician, surgeon and pediatrician from the provincial or base hospitals closest to the training centre.

It may also be noted that family health training courses have been extended to include rural development, probation and social service workers. The family health training scheme is well organized and is able to accommodate, on request, training courses for other government departments, semi-government institutions and voluntary organizations engaged in family planning activities. This enables such organizations to re-orient their programmes and activities to fit into the scope of the national programme.

Besides training, workshops were also held for the high level specialists attached to the 24 major hospitals in the country. Nearly 60 obstetricians, pediatricians, surgeons and anaesthetists participated in these workshops. Seminars on family health have also been held for medical and nursing personnel.

b. Health education

Prior to the setting-up of the Family Health Bureau, all health education functions were carried out by the Health Education Section of the Directorate of Health Services. Since health education has been given an important place in the country's Five-

Year Plan, this section has been strengthened with UNFPA assistance as a separate project with the main objective of developing the health education component of the Family Health Programme. Further objectives of this project are:

(a) Strengthening and implementing training in health education aspects of family health for full time health education personnel, trainers in various training institutions, and health and hospital administrators;

(b) Designing of study models and undertaking behavioural studies in family health to obtain data and information strategic to sound planning of health education aspects of family health; and

(c) Re-organizing the audio-visual aids production and distribution and their utilization to meet the needs of the Family Health Programme.

As the main Health Education Section encompasses all aspects of health education, it was found desirable to set up an additional health education division within the Family Health Bureau specifically for the purpose of giving extra emphasis to the family planning component of health education. The work of the division is being carried out through the existing infra-structure of the general health worker in the periphery. The main activities may be summarized as follows:

(a) A pilot project on family health education as an integrated hospital service in one of the large hospitals was initiated in 1973 under the guidance of the SIDA Advisor. Based on the experience of this pilot project, the programme is being extended to cover all major hospitals;

(b) Production and distribution of health education materials in all three languages;

(c) A quarterly news bulletin circulated among Health Department personnel;

(d) Motivational programmes carried out in Health Department and other government departments,

(e) Regular radio programmes in all three languages;

(f) A Knowledge, Attitude and Practice (KAP) study was carried out in 1973 to determine the practice of family planning among the population and the

attitude of the field worker to family planning practice.

c. Supplies and services

Prior to the establishment of the Family Health Bureau, the distribution of family planning material was carried out by the Swedish Project to clinics conducted by the Department of Health. Today, the Supplies and Services Section of the National Family Health Programme organizes and issues all contraceptive items to all the service outlets in the island through the Family Health Bureau. These service outlets are currently in the form of clinics, sales' points and field distribution outlets.

There are 505 family health clinics where intra-uterine contraceptive device (IUCD) insertions are done in addition to the issue of other contraceptives. These clinics are held daily in major hospitals and at regular intervals in the smaller institutions. Steps are already being taken to convert these clinics to polyclinics in order to provide ante-natal and well-baby services in addition to family planning services. Sales points are established for issue of condoms and oral contraceptives during working hours in all medical institutions. Sales are also made through the network of para-medical personnel, such as PHMM, PHNN, and PHII working in the field. Contraceptives are made available to the population by the field workers during their routine home-visits and at their work places.

In addition to the departmental service outlets, distribution is being done by some semi-governmental and other non-departmental organizations, such as municipalities, corporations, boards and kachceries.

The contraceptives are sold to the acceptor at the following prices:

Item	Rs
Condom	0.05
A cycle packet of oral	0.75
Diaphragm	1.50
Anti-spermicidal jellies and creams	1.50

The IUCD is inserted free of charge. A commission of 2 cts per condom and 5 cts per packet of orals is given to the private seller. All contraceptive items for the programme and the instruments

necessary to start family planning clinics were donated by the SIDA.

In recent years, there has been a great improvement in the sterilization programmes. Female sterilizations are done routinely in all major hospitals on post-partum and interval cases where referrals are also made from smaller hospitals and field personnel in the periphery. In addition to this, surgical/obstetrical teams from large hospitals visit smaller hospitals where facilities are available for sterilization. Additional equipment, instruments and other supplies required for the sterilization programme are made available by UNFPA, and are distributed to the respective institutions under the supervision of Supplies and Services Section of the Family Health Bureau. The distribution of items donated by UNFPA, for strengthening of family health services by opening 162 new clinics and upgrading 372 existing clinics for FP/MCH Services are now under way.

d. Plantation (estate) sector

According to the 1971 census, the estate population which consists largely of Indian Tamils was 1,161,611 or nearly 9.2 per cent of the total population. The provision of health care to the estate population is governed by the Medical Wants' Ordinance of 1912, which makes adequate legal provision to deal with "sick labour". Medical facilities (and personnel) provided within the confines of an estate were, however, mainly voluntary, being left to the discretion of individual estate managements.

The Government of Sri Lanka had for long recognized the need to provide the same quality of medical service to all sections of the population. A practical solution with regard to the estate sector was first considered by the SIDA Advisor in Sri Lanka and was later the subject of discussion by a UN/WHO/UNESCO Team.^{30/} This concept became a reality with the commencement of the UNFPA assisted projects, when estate health was included as a sub-programme under the Family Health Project. The Plan of Operation involves close liaison between the general health services and the health services hitherto available in this estate sector.

Further, during the period 1974-1975, political developments have resulted in all foreign-owned

^{30/} United Nations, *Family Planning Evaluation Mission to Ceylon*, op.cit.

estates being taken over by the National Government, and their management distributed between the Sri Lanka State Plantations Corporation and the Land Reform Commission. The Planters' Association and its medical scheme has been dissolved, and estate health has been brought totally, within the purview of the Ministry of Health.

In order to strengthen the family health services in the estate sector and bring such services within the scope of the Family Health Programme, the main activities programmed are:

- (a) Group training or re-orientation courses for estate health personnel, on the same basis as planned for government health officers, was commenced in May 1974;
- (b) Basic training for midwives to be employed by estates;
- (c) Commencement of family health programmes in estate sector, regular MCH/FP clinics held by medical officers.

The shortage of midwives for work on estates had adversely affected the improvement of maternal and child health on estates. To remedy this situation, basic training for midwives began in December 1974 which will, on completion, provide 100 midwives to serve the needs of this sector. A scheme of in-service clinical training for estate para-medical personnel has also been initiated. Estate medical assistants are trained in batches of five to six each Tuesday at the Nawalapitiya District Hospital by the district medical officer and consultant staff. This training is designed to impart both technical knowledge to, and develop clinical skills in, estate medical assistants. Up to the end of 1975, as many as 94 estate medical assistants, 66 midwives and 32 registered medical practitioners have been trained.

Ten medical officers (family health)/estates were appointed in December 1974 to strengthen the family health work on estates. On the basis of information collected from the Basic Data Survey of 1974, 20 estates were selected as venues for initially setting up polyclinics. Special emphasis is given to ante-natal care, immunization, nutrition, health education and family planning. The final target of setting up 200 estate polyclinics has now been reached. Each polyclinic also functions as a family planning clinic. Individual advice and instructions to mothers is made available. All MOO(FH)/Estates have been provided with equipment for IUCD insertions.

The service component has been rearranged with provision being made for all estates to obtain the conventional contraceptives at wholesale rates through the local MOH, the MO(MCH) or the Family Health Bureau.

Sterilization services to the estate sector have been enhanced by: (a) improved system of referral; (b) provision of mobile surgical teams from the larger hospitals which undertake sterilizations at smaller government hospitals in close proximity to estates, and in suitable estate hospital/maternity homes/dispensaries; and (c) sterilization services by non-specialist medical officers, e.g. district medical officers at their respective hospitals.

The success of this scheme is evident from the fact that government medical officers, in the course of other routine medical functions, had performed 2,206 vasectomies and 1,082 tubectomies in 1974, and 1,982 vasectomies and 1,491 tubectomies in 1975. These sterilization services have also enabled consultant staff to train other medical officers in the surgical techniques of sterilization.

The estate polyclinic nutrition programme has been expanded to include the distribution of Thriposha, a protein-supplemented milk powder. Both Thriposha and family planning services were earlier available to the estate population through the Planters' Association Health Scheme.

e. Evaluation and research

The Evaluation and Research Unit was set up within the National Family Health Programme for the collection and analysis of service statistics and for undertaking research. This unit is linked with the Statistical Unit of the Department of Health to ensure the generation of reliable data for the continuous monitoring of the National Programme.

The staff of the Evaluation and Research Unit originally consisted of a senior medical officer assisted by a clerk and steno/typist. However, with the rapid expansion of the Programme and an island-wide network of service outlets, the cadre was strengthened with addition of a statistician and 14 statistical survey officers.

The important activities carried out by the Unit include:

(a) An IUD retention survey and an oral contraceptive continuation survey conducted in June-July 1974, to measure the length of time that IUDs accepted under the Family Health Programme remain in place and the continuation rates of oral contraceptives;

(b) The redesigning of maternal child health and family planning records to obtain relevant information on fertility for use by decision makers, administrators and planners;

(c) A baseline survey conducted in March-August 1975 in an effort to measure the impact of the Programme, covering 6,234 households in 134 clusters throughout the country. A subsample of these households was revisited by independent interviewers to check on the validity of data collected;

(d) Setting family planning targets for each Health Division to achieve a reduction in the crude birth rate to 20 per 1,000 of the population by 1986.

With the rapid expansion of the National Family Health Programme and its further development in the future years, it will be desirable that the Evaluation Unit be further improved and strengthened to suit the needs of the Programme and for providing policy makers and administrators with valid information on progress and realization of goals.

2. Other governmental programmes

Apart from the major Family Health Programme, there are also other programmes in the field of population and family planning which are carried out with assistance from UNFPA.

a. Nursing and midwifery education

In recognition of the extensive role played by nurses and midwives in the provision of Family Health Services, a project was started in 1974 for strengthening of nursing and midwifery education in the country. Under this project, the basic training for nurses and midwives was revised to give special emphasis to the family health approach in both public health and curative services. The objectives of the project are to help implement the government's plan for the provision of a family health service programme by giving a number of selected, qualified nurses and midwives intensive training in family health and revising the relevant curricula in order to ensure that those completing the training programme will be able to participate effectively in the family health services.

b. Workers' education in population and family planning

The Ministry of Labour has organized two programmes in this field, one for the urban sector and the other for the estate sector.^{31/} The two programmes are designed to cater to the workers in the organized public and private sectors: plantations, manufacturing industries, export and import trade, corporations etc.

Both these projects share the same long-range and immediate objectives. The long-range objective is to assist in achieving the population targets set up by government through the promotion of family planning practices amongst organized workers in the plantations and other organized industries.

The immediate objectives are:

(a) Creating an awareness of the population problem among trade union leaders at subnational level, at plantation/industrial establishment level and other worker leaders and supervisors on plantations and establishments in order to encourage support for the acceptance of family planning practices by workers;

(b) Providing a group of volunteer worker motivators drawn from among the worker leaders on the plantations and the industrial establishments.

Since the final success of both these projects depends on the close liaison and co-operation between the planning authorities at the centre and the workers at their place of work, a National Committee on Family Planning for the Organized Sector has been set up at Colombo with the Commissioner of Labour as Chairman. This Committee consists of representatives of trade unions, employers' organizations, the various government departments connected with family planning work such as the Department of Health and representatives of the Family Planning Association of Sri Lanka. Among the functions of the National Committee are the promotion of family planning amongst the workers; co-ordinating family planning programmes for workers with the national programme; collection and dissemination of information and the making of recommendations on special action.

The training and motivation of workers at different levels are the main objective of the two pro-

^{31/} These two projects are: (i) Workers Population/Family Planning Education (Urban Sector); and (ii) Workers Population/Family Planning Education (Plantation Sector).

jects. Whereas in the plantations, the majority of the workers live on the plantation itself, in the industrial and commercial sector, the workers do not live at their place of work. However the approach towards the motivation of workers in the urban sector is not necessarily the same as that of the plantation workers. Trade unions who have a considerable influence over these workers and the employers have perhaps a greater responsibility in this sector than in the plantation sector in achieving successful motivation. In the plantation sector, the volunteer motivators, who have received training in specially organized workshops, organize small groups among the workers to help them in their motivational work. In the urban sector, factory classes are the medium through which the educators motivate their colleagues at the places of work.^{32/}

Family planning is a new field not only in the Department of Labour, but also to organized labour and management. However, the unique position the Department occupies in its relations with labour and management has made it possible for these programmes to be organized in a tripartite setting. Agreement between labour and management on the need for family planning has made this task easy. The enthusiasm shown by the unions and management for joint action with government is most significant.

c. Population education in schools

The Population Education Project has been designed to introduce population education into the subject areas of social studies, science, mathematics, health education and mother tongue in grades VI-IX of all schools in the country. In addition, the Project envisaged introducing population education to all Teacher Training Institutions by 1976. From 1974 onwards the trial curriculum materials were introduced to selected pilot schools for evaluation and revision. The revised curriculum materials were made available to schools from 1975. Together with this a comprehensive In-service Teacher Training Programme was launched in 1975. Other components included in the project are the evaluation of curriculum materials, instructional methods, training programmes and the creation of basic research projects. The project is implemented by the Curriculum Division of the Ministry of Education.

^{32/} For further details, see W.L.P. de Mel, "Family planning in the organized sector - the role of the Department of Labour, Sri Lanka" in *Family Planning in Industry in the Asian Region Part II: Some Action Studies* (Bangkok, ILO Regional Office for Asia, 1974).

d. Demographic training and research

The main objective of this project, which is being implemented by the University of Sri Lanka are:

(a) To promote understanding among policy-makers and development planners of the interrelationship between demographic changes and socio-economic factors;

(b) To assist in the conduct of on-going undergraduate and graduate courses in demography and population.

e. Teaching of human reproduction, family planning and population dynamics in medical schools

This project, implemented by the Faculty of Medicine, University of Sri Lanka, has been designed to:

(a) Incorporate subjects related to human reproduction and family planning throughout the medical curriculum in all disciplines;

(b) Expand present training in epidemiology and demography;

(c) Train students to act as motivators in family health/family planning in the peripheral centres in which they will be working;

(d) Strengthen the family health service presently provided by the faculty in the Community Health Project area of Kotte and to utilize this area for the above training;

(e) Test the effectiveness of the Family Health Programme to study further demographic socio-economic, cultural and behavioural characteristics of the population. Studies will be undertaken in the Community Health Project areas and other suitable areas.

f. Communication strategy

The objective of this Project, which is administered by the Ministry of Information and Broadcasting, is the development of a communication strategy in the diffusion of population information to various audiences, and the integration of population with other development areas. Specifically, its activities are intended to inform audiences about the nature of the population problem and its effects on national development, the benefits of child spacing

and family limitation, and to motivate selected groups of people to adopt methods of contraception.

During the year 1976/77, the Project objectives have been re-defined in order to specify more exactly the type of activities to be carried out. They are: (a) to serve as a communication resource for the population projects particularly those funded by UNFPA; (b) to carry out mass media activities (radio, press, film), which will provide umbrella support for population programmes; (c) to carry out necessary field studies and research in order to identify appeals and communication channels for selecting target groups; (d) to develop prototype educational programmes and materials to support population activity, particularly in regard to involving district and village level organizations and officers, viz: rural development officers. These objectives are carried out through production of various mass media materials, research-evaluation, training, workshops and seminars.

Since it started in early 1974, the range of activities had included the production of such materials as a monthly newsletter, brochures for different types of audiences, filmlets and slides, bus panels and billboards, radio programmes, workshops and research activities on village communication and group structures, evaluation of effectiveness of selected campaigns and studies on clinical drop-outs, physicians' attitudes and social change. Other on-going activities include the publication of a monograph on selected topics on population, communication and development and training programmes for rural development officers and development of low-cost mass media materials.

In 1975, the Communication Strategy Project started a series of training programmes for rural development officers. This training scheme has been designed in collaboration with the Health Education and Family Health Bureau programmes in information, education and communication. The Project also assists in the co-ordination of information, education and communication activities of family planning/population agencies in the country.

3. Activities of the Family Planning Association

In 1973, when the Government of Sri Lanka expanded its programme with UNFPA assistance, the Family Planning Association (FPA) re-appraised its own role in relation to the comprehensively planned

National Programme. The pioneering efforts of its first phase was over, since family planning was acknowledged as declared government policy. As the next phase in the Association's progress, its new role was accepted to be specifically in terms of supplementing the National Programme, keeping within government policy and programme direction

In this context, the FPA has directed its activities to those areas and groups that did not fall within the government programmes, or were inadequately covered, most notably rural areas; school leavers and youth groups; plantation sector; and organized industrial sector. A restricted clinic service was maintained mainly for purposes of medical research on new and innovative contraceptive methods. Medical research has been an aspect of consistent high priority in the Association's activities. Surgical service was concentrated to a promotion of vasectomy - hitherto not available at government institutions and not popularized. A major programme of the Association is the mobile clinic vasectomy service preceded by group motivational programmes. This service was provided in close collaboration with the medical scheme of the Planters' Association, prior to the nationalization of estates. The Association is presently rearranging its programme to supplement the government's Estate Health Programme.

Further, recent structural changes in the national development process have been taken into account and attempts made to integrate a family planning component into the routine functions of various categories of officials and village level participants of the district administrative structure, through a system of training. The approach to mo-

tivation has been oriented to the concept of family health, which has been found to be more acceptable in the rural areas and which is in keeping with governments' family health programme.

The Association maintains a close touch with the National Programme having established representation on the national co-ordinating committee and on the committees of the other government institutions engaged in population projects.

4. Programme costs

a. Government expenditure

It is very difficult to estimate the value of government expenditure on family planning activities over the years, because prior to the signing of the UNFPA Agreement in 1973, there was no separate government budget for family planning. The only item of expenditure that could be estimated precisely is the annual grant by the government since 1953 to the Family Planning Association, though it is not possible to estimate directly the value of the services provided by government medical officers or of the facilities made available by the government to the work of this Association. However, for the fiscal year 1968/69, the total government expenditure on family planning was estimated by Jones and Selvaratnam as in table 135.

It was also observed that the estimated family planning expenditure "accounts for around 2 per cent of total expenditure on health, and 0.1 per cent of the total government budget. If the entire spending on family planning were diverted into education,

Table 135. Estimated government contribution to family planning category of expenditure

	Rupees
Costs of Family Planning Bureau	400,000
Grant to Family Planning Association	75,000
Travel costs (imputed)	500,000
Personnel costs (attributable to family planning)	1,667,500
(1) Medical officers - M.C.H.	75,000
(2) Medical officers of health	100,000
(3) Obstetricians and gynecologists	62,500
(4) District medical officers	200,000
(5) Public health nurses	240,000
(6) Public health midwives	990,000
Total	2,642,500

Source: Gavin W. Jones and S. Selvaratnam, *Population Growth and Economic Development in Ceylon* (Colombo, Hansa Publisher, 1972), p. 215.

Table 136. Foreign contributions to Family Planning costs, 1953-1974

Agency	Period	Amount (SUS)	Equivalent Sri Lanka ^{a/} Rs
SIDA	1953-1965	655,000	3,110,000
	1965-1974	1,780,000	11,300,000
UNFPA	1973	5,992,702	40,151,103
Ford Foundation	1966-1972	271,000	1,720,000
IPPF (to FPA)	1958-1974	-	5,734,580
IPPF (Preathi)	1973-1974	-	1,340,000
Brush, Pathfinder, Oxfam	1958-1974	-	206,238
Colombo Plan	1972-1974	-	118,437
Total			63,680,358 ^{b/}

Source: Ministry of Health, Colombo

Note: a/ Average conversion rate \$US1 = Ceylon Rupees 6.70 but this rate has been fluctuating

b/ In 1975, the Family Planning Association received a further grant of Rs 1,751,188 from IPPF and Rs 280,800 from the South West Foundation research Programme.

this would be enough to provide only 3 more days of education per year for the children currently in school" ^{33/}. On the basis of Jones-Selvaratnam calculations, it is estimated that the government expenditure, both direct and indirect, on family planning during the period 1968/69 to 1971/72 was about Rs 10.6 million. The government's counterpart contribution to UNFPA Projects in 1973 was about Rs 7.6 million. The total expenditure of the Government for the period 1953 to 1973 is, therefore, estimated as:

Item	Rs
Grant to the Family Planning Association	1,260,000
Estimated expenditure 1968/69 to 1971/72	10,570,000
Counterpart contributions, UNFPA Projects	7,578,617
Total	19,408,617

b. Foreign funds

There has been a substantial input of foreign funds into the family planning programme of Sri Lanka. As noted earlier, continuous support was given by SIDA from 1953 onwards, while in 1973, UNFPA agreed to provide assistance for 11 projects. In 1967, the Ford Foundation entered into an Agreement with the government to support the National Family Programme by providing funds for fellowships, evaluation activities and a resident medical adviser. Further, assistance was also made available to the Family Planning Association by the International Planned Parenthood Federation (IPPF), Brush Foundation, Pathfinder, Oxfam and the Colombo Plan Bureau. The value of the foreign assistance received from various sources are shown in table 136.

The total expenditure, both local and foreign, during the 1953-1974 period is therefore estimated as:

Local expenditure		22,108,617
1953 to 1973	19,408,617	
Estimated 1974	2,700,000	
Foreign funding		63,680,358
Grand total		85,788,975

5. Programme achievements

The targets for, and the number of new acceptors in regard to, various contraceptive methods in each of the years 1966 to 1974 are shown in table 137.

It is evident from the table that there has been an almost steady increase in the number of new acceptors of family planning methods over the years and that the target was exceeded in 1974. ^{34/} During the early years of the programme, the loops appeared to be the most preferred contraceptive device. Since 1969, however, orals have been the most popular method of contraception. In recent years there has been an increased acceptance of sterilization both among males and females.

The unprecedented increase in the acceptance of the terminal method of sterilization in 1973 and 1974 has to be attributed largely to the motivational seminar held in January 1973 for obstetricians and

^{33/} Gavin W. Jones and S. Selvaratnam, *op.cit.*, p. 215

^{34/} The figures given in table 137 do not include the number of contraceptives distributed under the Non-Clinical Contraceptive Marketing Project, of the IPPF.

Table 137. Family planning methods — targets and achievements, Sri Lanka, 1966-1974

Year	Total Targets	Achievements (new acceptors)					Percentage achieved
		Total	Loops	Orals	Sterilization ^{a/}	Other ^{b/} methods	
1966 ^{c/}	18,000	15,000	10,000	1,000	3,000	1,000	83.3
1967	36,000	36,695	18,506	8,892	3,616	5,681	101.9
1968	55,000	48,164	20,615	16,014	5,210	6,325	87.6
1969	110,000	54,534	19,537	25,284	2,947	6,766	49.6
1970	110,000	55,269	15,799	26,889	4,971	7,610	50.2
1971	110,000	49,324	11,446	25,829	4,335	7,714	48.5
1972	110,000	71,044	18,599	32,300	9,576	10,569	64.6
1973	110,000	95,931	27,528	34,214	20,248	13,941	87.2
1974 ^{d/}	110,000	120,000	29,698	48,068 ^a	42,234		109.1

Source: Evaluation Unit, Family Health Bureau, Ministry of Health

Notes: a/ Includes male and female.

b/ Includes foam tablets, condoms and diaphragms.

c/ Data for 1966 are estimates.

d/ Since 1974, government clinic records do not differentiate between acceptors of orals, condoms and miscellaneous methods.

health administrators as well as to an increase in the facilities prior to obtaining UNFPA assistance, the available family planning service facilities were not adequate to meet the demand for such services. The enhanced service facilities provided free of charge at the 24 major government hospitals with the existing cadre resulted in an increase in the number of sterilizations from 9,576 in 1972 to 20,248 in 1973, the first year of UNFPA assistance, and to 42,234 in 1974.

It is also of interest to note that while a few male sterilizations (1,482 in 1973 and 4,391 in 1974) were performed in the clinics of the Family Planning Association with monetary incentives, the government figure was achieved without resort to any incentives or enforced anti-natal legislation. The highest number of acceptors of female sterilization were aged 25-29 years. The average number of living children of these females was 4.7 and of males 3.9.

An analysis of the data relating to family acceptors recruited at the various clinics for the period 1968-1971 shown in table 138 indicates that the highest preparation of acceptors of family planning methods were among those aged 25-29 years followed by those aged 20-24 years. It would also appear that acceptance rate was highest among those who had three to four living children. In 1971, persons who had one to two children contributed the second largest number of acceptors of family planning methods.

According to a survey conducted by the Evaluation Unit of the Family Health Bureau in 1974, it

Table 138. Percentage distribution of new acceptors recruited at government, municipality and Family Planning Association clinics by age and number of living children, Sri Lanka, 1968-1971

Age of new acceptor	1968	1969	1970	1971
15-19	1.8	2.3	2.3	2.2
20-24	20.2	21.0	22.0	23.1
25-29	31.1	30.0	29.2	29.5
30-34	22.2	21.2	21.6	20.7
35-39	15.9	14.5	14.0	12.9
40 and over	3.4	3.3	3.8	3.6
Unknown	5.4	7.7	7.1	8.0
Total	100.0	100.0	100.0	100.0

Number of living children	1968	1969	1970	1971
0	0.5	0.6	0.6	0.9
1-2	21.0	22.8	25.6	29.2
3-4	30.8	29.2	29.5	30.2
5-6	23.3	22.2	20.6	10.8
7 and over	18.3	16.1	15.1	12.8
Unknown	6.1	9.1	8.6	8.5
Total	100.0	100.0	100.0	100.0

Source: Reports on New Acceptors of Family Planning, Sri Lanka, 1968, 1969, 1970 and 1971, (Colombo, Office of the Medical Statistician, Ministry of Health).

was found that the retention rates of IUD were 83 per cent at the end of 12 months and 73 per cent at the end of 24 months. Among the loop acceptors, 68 per cent were under 30 years of age and 44 per cent had two or less children. The highest acceptance rates for all methods were found in respect of those aged 25-29 years.

The continuation and retention rates were applied to new acceptor rates to estimate the number of births averted. The total number of births averted during the entire period 1967-1974 is estimated to be 161,000. The number of births averted in 1974 alone is estimated at 41,000 or 11 per cent of the total births in 1973. It has, however, to be noted that these figures do not include the distribution data relating to the Preethi Retail Marketing Project, which estimates a total of 13,636 averted births during the 18 months period, October 1973 to March 1975 from a general distribution figure of 5,875,000 condoms. Reliable information is not available for estimating the number of births averted outside the programme. However, on the basis of available data, it could be assumed that activities outside the programme are very negligible.

The Family Life Survey conducted in 1973 by the Evaluation Unit in collaboration with the SIDA Advisor provides a base for future evaluation studies. Further, steps are being taken to develop a system to evaluate the family health projects. A survey is being currently conducted to measure the impact of the programme to-date. Besides, the demographic studies undertaken by the universities and the medical schools in the country would also provide a basis for developing more sensitive indicators of programme progress.

It is to be expected that with the expansion of facilities for sterilization envisaged in the government programmes coupled with the changing attitudes of married women towards family size, there will be a further precipitate increase in the acceptance rate of sterilization in the country. This provides a clear justification for directing increased financial assistance to improve and equip the already existing medical institutions with family planning facilities and the expansion of the National Family Health Programme.

The calculations made by Jones and Selvaratnam have brought out clearly the cost-benefits of an expanded national family planning programme. These calculations show that the total savings to the government's budget in the fields of education, health, food subsidy etc. would be between Rs 10,649 million and Rs 13,466 million over a 30-year period.

"In terms of its savings to the government budget alone, then, a vigorous family planning programme appears well justified. These savings, of course, do not exhaust the range of economic benefits of such a programme, nor do the economic benefits of the programme exhaust the complete range of benefits. Family planning programmes can be, and often are, justified without any reference to their economic benefits, but instead by reference to their contribution to the health and welfare of mothers and children, and their contribution to the freedom of choice, particularly of women. There appears to be every reason why Ceylon should determine to build its national family planning programme over the next few years into one of the strongest in Asia. It is most unlikely that the relatively modest funds required would yield greater benefits in any alternative use."^{35/}

D. CONCLUSIONS

It is clear from the discussions in the foregoing sections that the evolution of the population policy of Sri Lanka has been the result of constant concern, careful consideration and periodical review of all diverse forces and factors operating within the socio-cultural milieu of the country. Government policy has consistently recognized the need for adoption of policies and programmes aimed at moderating the rate of population growth. However, there appears to have been some inconsistency in the interpretation of national policy and direction and co-ordination of national programmes.

Activities relating to population and family planning are being carried out by a number of government departments as well as private and voluntary organizations. The varied activities of these organizations with isolated programmes of contraception and birth control, family norms and incentives have tended to create an element of confusion both within Government and among the general public. It is essential in the long-term interest of the national programme that the activities of various departments and agencies should be consistent with government policy and programme.

It is for reasons of consistency in policy and uniformity in action that Population Councils or Commissions have been set up in many countries with national population programmes. The chief objectives of these Commissions are generally to:

- (a) make comprehensive studies of the demographic

^{35/} Gavin W. Jones and S. Selvaratnam, *op.cit.* pp. 227-228.

data and expected demographic trends and propose policies that will achieve specific and quantitative population goals; (b) formulate and adopt coherent, integrated and comprehensive long-term plans and programmes and recommendations on population as it relates to social and economic development; and (c) co-ordinate, plan, supervise and evaluate all aspects of the national population programme.

The importance of setting up a similar organization for Sri Lanka was stressed at a series of seminars held in the country from time to time. For instance, the National Management Seminar on Population and Family Planning held in October 1972 noted that:

“The Government had adopted a policy involving the promotion of family planning practices as a measure to moderate the rate of population growth. The Seminar wished to stress the need for co-ordinated direction of such policy and recommends the early constitution of a National Population Commission for this purpose.” ^{36/}

The First National Seminar on Family Health and Family Planning held in January 1973 also

^{36/} Report of the National Management Seminar on Population and Family Planning, jointly sponsored by the Department of Labour and the ILO Colombo, 10-13 October, 1972, p. 7.

stressed the need for a commission to co-ordinate the various activities in the field of population and family planning. In January 1974, the National Seminar on Law and Population in Sri Lanka recommended “the creation of a separate portfolio to the Cabinet of Ministers for Population Activities”. As an alternative, “the Seminar considered the creation of a Central Body or Authority to encourage, support, assist co-ordinate and integrate activities in furtherance of National Population policy and recommended the establishment by legislation of a Inter-Ministerial Body or Authority to co-ordinate and integrate all work done in the public and private sector in Sri Lanka in connection with population and family planning. Such a Body can be called a Population Council, Commission or Board, and its establishment should be by statute and its powers, responsibilities and duties also defined by statute, and it should be made as broad-based as possible. The Seminar noted that the establishment of such a central body should not in any way interfere with but rather encourage the present work done in these areas by voluntary agencies, organizations and even individuals”. ^{37/}

The urgency for acting on these recommendations need hardly be emphasized.

^{37/} Report of the National Seminar on Law and Population in Sri Lanka, organized by the Law and Population Project, Sri Lanka, 16-18 January 1974, Mimeo. p. 19.

CHAPTER XI

POPULATION PROJECTIONS

A. INTRODUCTION

Population projections are essentially mathematical models which attempt to indicate what the future population would be if certain likely rates of mortality, fertility and migration were to apply. The accuracy of the projections therefore largely depends on the accuracy of the assumptions regarding the future course of various components of population growth. Despite the uncertainty about their accuracy, population projections are of utmost importance to the formulation of comprehensive development plans and programmes. "The rates of growth of the population and its future size and composition help to determine targets of production in the various fields of economic activity. The number of people who will enter the labour force and for whom avenues of productive employment have to be created has again to be estimated on the basis of likely increase and structure of the population. Plans for education have to take into consideration the estimates of the future population of school-going age while the growth and distribution of population will govern policies regarding location and expansion of health, housing and other social amenities. In short, any type of planning for the development of a country involves directly or indirectly some assumptions regarding the size and composition of the future population."^{1/}

During the past three decades or so, there has been a growing interest in the probable size and composition of the future population of Sri Lanka. This development has partly been due to the unprecedented increase in population which the country experienced during the years following the Second World War. Partly, the increasing activities in the field of planning and development created a heavy demand for projections of the future populations. Also, the availability of adequate and fairly reliable data prompted several scholars and organizations to prepare independently a series of population projections for the country. The essential features of the various population projections are summarized in table 139. For convenience of discussion, these projections may be divided into three categories: (a) those prepared

and issued in the 1950s; (b) those prepared and issued in the 1960s; and (c) those prepared and issued in 1970s.

Table 139. Important features of the various population projections for Sri Lanka

Year issued	Author	Period covered	Number of projections
1957	Sarkar	1951 - 1976	Two
1958	United Nations	1955 - 1980	Three
1957	Department of Census and Statistics	1955 - 1970	Two
1959	Selvaratnam	1956 - 1981	Three
1966	Department of Census and Statistics	1963 - 2003	Three
1966	Technical Working Group	1963 - 1978	Three
1969	Lesthaeghe and Chi	1963 - 1998	Three
1970	Selvaratnam, Wright and Jones	1968 - 1998	Three
1974	Department of Census and Statistics	1971 - 2001	Three
1974	Srivastava and Abeykoon	1971 - 1991	Four
1974	Frejka	1970 - 2150	Five

B. PROJECTIONS MADE IN THE 1950s

1. Sarkar's projections

Two sets of projections, each covering the 25-year period 1951-1976, were prepared by Sarkar.^{2/} The first, the mathematical projection,^{3/} assumed that the 1921-1946 growth rate of the population would continue into the future. The second, a component projection^{4/}, was based on the following assumptions:

^{2/} N.K. Sarkar, *The Demography of Ceylon* (Colombo, Ceylon Government Press, 1957), pp. 237-241.

^{3/} The mathematical projection involves the application of some mathematical formulas directly to the total population from one or more censuses, to derive projections of total population. Though simple in concept and relatively easy to apply, such projections do not provide the breakdown by age groups necessary for planning purposes.

^{4/} In the component method, the base population is projected forward for a given unit period by calculating separately the effects of mortality, fertility and migration within each age-sex groups. Thus the method is usually applied to obtain directly the projections by age and sex groups.

^{1/} S. Selvaratnam, "Population projections for Ceylon", paper presented to the International Union for the Scientific Study of Population General Conference (London, September 1969). Also for detailed discussion on the role of population projections, see ESCAP, *Report of the Expert Group Meeting on Population Projections*, Asian Population Studies No. 33, (Bangkok, 1975).

(a) Mortality would continue to decline in an exponential trend, the rate of decline being derived from that observed in the period 1910-1947;

(b) Fertility rates would continue to rise until 1951 as a linear trend through the rates of 1920 and 1947; thereafter rates would remain constant until 1961 and subsequently would decline on an exponential trend.

The results of Sarkar's projections are summarized in table 140. On the basis of the component projection, the population in 1963 was estimated at 10.163 million compared with the 1963 midyear estimate of 10.580 million. This represents an under-estimate of 3.9 per cent. The projected figure for 1971 was 11.546 million compared with the midyear estimate of 12.600 million which represents an under-estimate of 8.4 per cent. The projected population of 12.560 million in 1976 had already been exceeded in 1971.^{5/}

Table 140. Population projections for Sri Lanka, 1951-1976
(thousands)

Year	Projected population	
	Mathematical projection	Compound projection
1951	7,614	8,199
1956	8,082	8,960
1961	8,579	9,813
1966	9,107	10,688
1971	9,667	11,546
1976	10,262	12,560

Source: N.K. Sarkar, *The Demography of Ceylon* (Colombo, Ceylon Government Press, 1957), p. 238, table 2.

2. United Nations' projections

The United Nations^{6/} prepared three projections, viz., medium series, low series and very low series, covering the 25-year period 1955-1980. All projections assumed normal mortality decline, that is "mortality decline at a rate which, from average observations for the world as a whole, appears normal". In particular, it was assumed that expectation of life at birth increases by one and a half years every five years. In regard to fertility,

^{5/} The total population as at the census held in October 1971 was 12,689,897.

^{6/} United Nations, *The Population of South-East Asia 1950-1980, Future Population Estimates by Sex and Age*, Report III (Population Studies No. 30) (Sales No. 59.XIII.2).

the medium series assumed that fertility would remain constant, while a slow fertility decline was assumed in the case of the low series and rapid fertility decline in the case of the very low series. The results of these projections are summarized in table 141. It will be observed that the projected population in 1970, even according to assumption of rapid fertility decline, is higher than the enumerated population of 12.690 million in October 1971.

Table 141. Three alternative series of population projections, Sri Lanka, 1955-1980

Projection	(thousands)					
	Projected population					
	1955	1960	1965	1970	1975	1980
Constant fertility	8,657	9,940	11,445	13,774	15,543	18,327
Slow fertility decline	8,657	9,940	11,398	13,063	15,001	17,227
Rapid fertility decline	8,657	9,940	11,351	12,852	14,459	16,127

Source: United Nations, *The Population of South East Asia 1950-1980* (Population Studies No. 30, 1958), table 19.

3. Census Departments' projections

The Department of Census and Statistics^{7/} made two projections, high and low, for the period 1955-1970. The high projections assumed a steady increase in fertility and a steady fall in mortality. The low projection assumed a decline in fertility and unchanged mortality. The results are summarized in table 142. The interpolated values on the basis of the high and low population projections for 1963 were 10.979 million and 10.676 million respectively.

Table 142. Projected population of Sri Lanka, 1955-1970
(thousands)

Projection	Projected population			
	1955	1960	1965	1970
High assumption	8,723	10,045	11,600	13,471
Low assumption	8,723	9,929	11,175	12,389

Source: Government of Ceylon, *Statistical Abstract of Ceylon 1957* (Colombo, Department of Census and Statistics, 1957), tables 28 and 29.

^{7/} Government of Ceylon, *Statistical Abstract of Ceylon 1957*, (Colombo, Department of Census and Statistics, 1957), pp.30-31.

The 1963 midyear estimate of population was 10.580 million.^{8/} The low projection exceeds the midyear estimate by only 0.1 per cent. These projections terminate in 1970. The low projection figure for 1970 of 12.389 million compares very favourably with the Registrar General's official estimated population of 12.516 million for 1970, the difference being only 1.0 per cent. However, the assumption of constant mortality over the projection period, 1955-1970, was not valid since the expectation of life actually increased by about six years during this period. It is probable that the error in the fertility assumption partially compensated for the error in the mortality assumption thus producing a projection fairly close to the true figure. This is an example of compensating errors in the fertility and mortality assumptions which have yielded a fairly good projection of the total population.

4. Selvaratnam's projections

Selvaratnam made three projections for the period 1956-1981.^{9/} These projections, undertaken at the request of the Planning Secretariat of Sri Lanka, were probably the first detailed projections to be used in development planning in the country.

The assumptions made for the high, medium and low projections were as follows:

Fertility

High projection - Age-specific fertility rates of 1956 would remain constant up to 1981

Medium projection - Age-specific fertility rates of 1956 would remain constant up to 1961 and thereafter decline by 5 per cent every quinquennium

Low projection - Age-specific fertility rates would decline by 10 per cent every quinquennium after 1961

Mortality

-For all three projections the age-specific mortality rates were assumed to decline along an exponential curve from 1956 to 1981.

Migration - Migration was assumed to be nil.

^{8/} The enumerated population at the census of 8 July 1963 was 10,582,064.

^{9/} S. Selvaratnam, *Population Projections for Ceylon, 1956-1981* (Colombo, Planning Secretariat, 1959).

The results of the three projections are summarized in table 143. The projected midyear 1971 populations were 14.809 million, 14.573 million and 14.342 million according to the high, medium and low projections respectively. Since the estimated midyear population in 1971 was 12.600 million, all three projections over-estimated the total population. One reason for this over-estimation is that fertility declined faster than assumed in even the low projection. The birth rate implied by the low projection for the quinquennium 1966-1971 was 33.6 whereas the actual average birth rate for the period was 31.0. Another reason was that the projections seem to have over-estimated the mortality decline. Selvaratnam had assumed a life expectancy of 67.7 for males and 68.4 for females during 1966-1971 as against an actual expectancy in 1971 of 64.2 for males and 66.7 for females. A further reason was that the built-up 1956 base population was somewhat higher than the official estimates due to corrections for under-enumeration of children etc.

Table 143. Projected total population of Sri Lanka, 1956-1981 (thousands)

Year	Projected total population		
	High	Medium	Low
1956	9,375	9,375	9,375
1961	10,873	10,873	10,873
1966	12,647	12,594	12,541
1971	14,809	14,573	14,342
1976	17,476	16,877	16,312
1981	20,701	19,508	18,424

Source: S. Selvaratnam, *Population Projections for Ceylon 1956-1981* (Colombo, Planning Secretariat, 1959), table 10.

C. PROJECTIONS MADE IN THE 1960s

1. Census Department's projections

In 1966, the Department of Census and Statistics prepared a set of three projections covering the period 1963-2003. The following assumptions regarding the future course of fertility were made:

High: By 2003 fertility would decline uniformly to 80 per cent of the 1962 level; the birth rate then would be around 27 per 1,000.

Medium: By 2003 fertility would decline uniformly to 65 per cent of the 1962 level, i.e., the birth rate in 2000 would be around 22 per thousand.

Low: Fertility would decline to two-thirds of the 1962 level by 1976 and 50 per cent of the 1962 level by 2003, resulting in a birth rate of about 17 per 1,000 at the end of this century.

The single mortality assumption in all three projections was that the expectation of life for both sexes would be 70 years in 2003. International migration was assumed to be negligible and no allowance was made for it. Since the age data of the 1963 census was not yet available, the total population was distributed among the various age groups on the basis of the distribution as disclosed by the 1953 census. The results of the projections are shown in table 144.

Table 144. Population projections for Sri Lanka, 1963-2003
(thousands)

Year	Projected population		
	High	Medium	Low
1963	10,714	10,714	10,714
1973	14,072	13,977	13,829
1983	18,684	18,237	16,802
1993	24,598	23,325	20,303
2003	31,906	28,998	23,740

Source: Government of Ceylon, *Statistical Pocket Book of Ceylon 1968* (Colombo, Department of Census and Statistics), table 15.

The mid-1971 population estimated on the basis of the projections was 13.351 million in the high projection; 13.284 million in the medium and 13.169 million in the low projection. As noted earlier, the mid-1971 population calculated on the basis of the 1971 census was 12.600 million. Thus the percentage difference between the two sets of estimates is 6.0 per cent in the high projection; 5.4 per cent in the medium and 4.5 per cent in the low projection. Thus even the low projection has over-estimated the 1971 population.

2. Technical Working Group

In 1966, the Department of National Planning set up an Inter-Departmental Technical Working Group^{10/} to review estimates made so far on the

^{10/} The Working Group consisted of representatives from the Departments of National Planning, Census and Statistics, Labour, Registrar-General and Health Services. The estimate of the total population given by the 1963 census and its divergence from estimates derived from earlier projections indicated an urgent need for making a new series which would at the same time take into account some of the future implications of the new population policy of the government.

future size and composition of the population in the light of available data and to revise the existing projections or prepare a fresh set of population projections. After a careful study of the various documents and working papers, the Technical Working Group decided to prepare a new set of population projections. There were a number of important reasons for this decision. In the first place, it was felt that the age-sex data collected at the 1963 Census of Population provided a more recent base for projecting the population. The total population recorded at this census was 10.6 million while the estimates for 1963 based on various projections were very much higher. Secondly, the trend in birth and death rates showed that the rates of growth of the population in recent years had been slower than those assumed by earlier projections. Thirdly, beginning from 1965, the Government had been following an active family planning policy and the various measures adopted in this field were expected to substantially affect the course of fertility in the future.

Three sets of population projections — high, medium, and low- were prepared by the Working Group by the component method covering a 15-year period from 1963 to 1978.^{11/} Since full data from the 1963 Census of Population was not available, the distribution of the population by single years and sex obtained from a 10 per cent sample tabulation of the 1963 census returns was used to build up the population of the base year. After a careful study of the pattern and trends in the fertility rates, the Working Group made the following three alternative assumptions regarding future trends in birth rate in Sri Lanka:

(a) On the high side, it was assumed that the average annual decline in the birth rate of 1.37 per cent observed between 1951 and 1964 would remain constant up to the end of the projection period. On the basis of this assumption, the crude birth rate which was 32.7 in 1964 would decline to 29.3 in 1975.

(b) For purposes of the medium projections, it was assumed that the crude birth rate would decline by 2 per cent *per annum* over the projection period. This would result in a crude birth rate of 26.9 in 1975.

(c) For the low projections the assumption was that the 1964 crude birth rate would decline gradually

^{11/} Technical Working Group "Population projections for Ceylon 1963-1978" (Colombo, Department of National Planning, 1967) (mimeo).

to 25 per thousand of the population by 1975 and that this trend would continue up to the end of the projection period. This assumption was based on the targets set for family planning by the Ministry of Health.

The Working Group assumed that the mortality rates of 1963 would remain constant up to 1970 and thereafter the crude death rate would decline by 2 per cent *per annum*. It was also assumed that migration would not play any significant part in the growth of the country's population during the projection period.

The results of these projections are summarized in table 145. The Registrar-General's estimate of the 1973 midyear population is 13.130 million as compared with the projected population 13.679 million in the high projection and 13.538 in the medium and 13.421 in the low projections. The low projections of the Technical Working Group had thus over-estimated the 1973 population by only 2.2 per cent.

Table 145. Population projections for Sri Lanka, 1963-1978 (thousands)

Projection	Population 1963	Projected total population			
		1968	1973	1978	
High	10,695	12,127	13,679	15,378	
Medium	10,695	12,088	13,538	15,061	
Low	10,695	12,056	13,421	14,805	

Source: Technical Working Group, "Population projections for Ceylon 1963-1978", (Colombo, Department of National Planning, 1967) (mimeo).

In Sri Lanka, several government departments are involved with the collection and analysis of demographic data. As noted earlier, "some of these agencies have prepared population projections in the past and used them for various purposes. The existence of a multiplicity of projections prepared by governmental agencies sometimes led to confusion among the users of such projections. By setting up an Inter-Departmental Working Group, it was ensured that available expertise in concerned agencies was pooled together, all data and information were carefully examined and an agreed set of population projections prepared for official use. Moreover, by bringing together statisticians from different agencies into the Working Group, the need for correcting data deficiencies in future statistical enquiries and developing a common approach towards projection methodology was emphasized."^{12/}

^{12/} S. Selvaratnam, "Population projections for Ceylon" paper presented to the International Union for the Scientific Study of Population General Conference (London, September 1969), p. S.2.24

3. Lesthaeghe and Chi's projections

A set of three projections were prepared by Lesthaeghe and Chi of Brown University in the United States of America covering the 35-year period 1963-1998. All three projections use the same assumptions about mortality trends, viz., that the female expectation of life at birth would rise from 62.0 to 74.0 in the 1963-1998 period (using Coale and Demeny's model life tables, "West"). The male projections were calculated by applying the Coale-Demeny life tables for males corresponding to those used for females.

In regard to fertility trends, three different assumptions were made. The most interesting aspect of the fertility projections is that the gross reproduction rate reaches the same low level (1.2) after 35 years in all three projections and the contrast is between different time paths of heading this level as shown in figure 18. As will be noted later from the results, it matters a great deal whether the decline in fertility comes earlier or later, or whether it is sharper or less pronounced.

The results of these projections are summarized in table 146. It will be noticed that "depending on the particular pattern of fertility decline, the total population in 1998 would vary between 19.7 million and 24.9 million. The increase in the thirty-five-year period would be between 84 per cent in the low projection and 133 per cent in the high projection."^{13/}

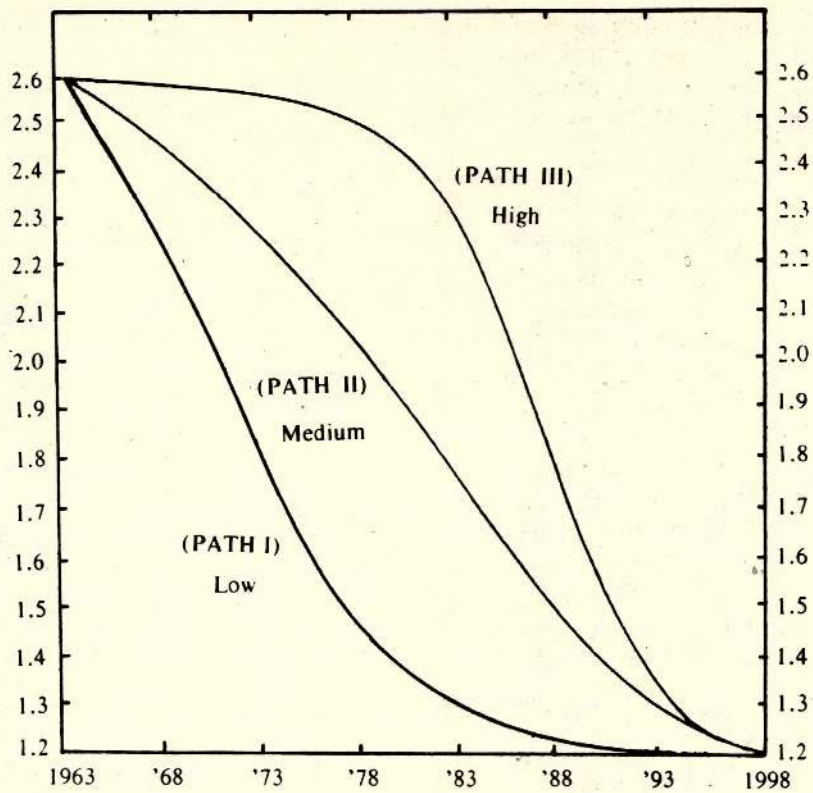
D. PROJECTIONS MADE IN THE 1970s

1. Projections by Selvaratnam and others

In 1970, Selvaratnam, Wright and Jones prepared a set of three projections for the period 1968 to 1998.^{14/} The population of the base year was built up carrying forward to 1968 the adjusted 1963 census population by the application of the relevant survival rates at ages 5 and above and by deriving an estimate of the population aged 0-4 years in 1968 from the vital registration data for the preceding five years. The estimated 1968 population by sex and five

^{13/} Gavin W. Jones, "Chapter 7, Sri Lanka: The importance of the timing of fertility decline", *Population Growth and Education Planning in Developing Nations* (New York, The Population Council, 1975), p. 129.

^{14/} S. Selvaratnam, Nicholas H. Wright and Gavin W. Jones, "Population projections for Ceylon 1968-1998", (Colombo, Ministry of Planning and Economic Affairs, 1970)(mimeo).



Source: Gavin W. Jones and Ashraf K. Kayani, *Population Growth and Educational Progress in Ceylon* (Colombo, June 1971).

Figure 18. Assumed trends in the gross reproduction rate, Sri Lanka, 1968-1998

Table 146. Projected total population of Sri Lanka, 1963-1998

Projection	Projected population (thousands)							
	1963	1968	1973	1978	1983	1988	1993	1998
Projection 1	10,695	12,093	13,452	14,658	15,885	17,065	18,377	19,731
Projection 2	10,695	12,155	13,817	15,641	17,464	19,236	20,910	22,558
Projection 3	10,695	12,229	14,089	16,273	18,715	21,093	23,087	24,922
	Average annual rates of increase (percentage)							
Projection 1		2.5	2.2	1.7	1.6	1.4	1.5	1.4
Projection 2		2.6	2.6	2.5	2.2	2.0	1.6	1.5
Projection 3		2.8	2.8	2.9	2.8	2.4	1.8	1.5

Source: Gavin W. Jones and S. Selvaratnam, *Population Growth and Economic Development in Ceylon* (Colombo, Hansa Publishers Ltd., 1972), table 25.

year age group was then projected at five year intervals up to 1998 according to one set of mortality assumptions and three alternative sets of fertility assumptions as follows:

Mortality: For most age groups mortality was assumed to decline in relation to the actual experience between 1963 and 1968. Most age groups below age 50-54 were raised by 2 or 2.5 levels in the Coale and Demeny model "West" life tables during the 30-year period. The implied increase of approximately five years in the expectation of life at birth would raise the expectation of life at birth to a level of approximately 67 years for males and 71 years for females in the 1993-1998 period. This is truly a western level of mortality.^{15/}

Fertility: The "high" projection assumed that fertility would remain constant over the projection period at 1968 age-specific rates (which, it should be remembered, were below those prevailing five or 10 years earlier). The medium projection assumed that fertility would decline in age-specific rates between 1963 and 1968 until 1993-1998 when a total fertility

rate of 3,060 would be reached. This projection takes into account the likelihood that average marriage age for women will not rise much further, the likelihood of only a slow rise in the educational attainment of women in the reproductive ages, and the current slow pace of the National Family Planning Programme.

The "low" projection was specifically designed to yield the 1975 target crude birth rate of the National Family Planning Programme. After that, fertility rates were gradually reduced to give a Western European pattern by 1988-1993. The specific assumption was that fertility would decline more rapidly in relation to the 1963-1968 trends in age-specific birth rates as follows:

(a) The rate of decline assumed for the period 1968-1973 was the rate observed between 1963 and 1968 plus 50 per cent;

(b) For the period 1973-1978 it was assumed that the decline would be the 1963-1968 trends plus 25 per cent;

(c) For the quinquennium 1978-1983, it was assumed that the rate of decline would be the same as the 1963-1968 trends;

(d) Between 1983 and 1988, fertility was assumed to decline by one-half the 1963-1968 trend;

(e) After 1988, it was assumed that fertility would remain unchanged at the 1988 level of a total fertility rate of 2,425 till the end of the projection period.

^{15/} The procedure adopted in selecting the survivorship ratios from model life tables seems to be justified on two counts. First, they represent an average of a number of countries, which though not relevant to most countries of the region, may be used for Sri Lanka which has reached and maintained a low mortality level for the past two decades. Secondly, the change contemplated is well within possibilities of achievement especially since it recognizes that much further decline is not likely.

Migration: It was assumed that migration would not significantly affect the trend of population growth in Sri Lanka over the next three decades.

A summary of the results of the population projections are presented in table 147. The population of Sri Lanka estimated at about 12 million in 1968 will increase to 26.2 million in 1998 if the 1968 fertility level were to remain unchanged during the 30 years and to only 19.7 million or 6.5 million less if a rapid decline in fertility were to occur during this period. The average growth rates implied in the three projections mean that the 1968 population will double in about 26 years according to the high projections (constant fertility assumption), in 33 years according to the medium projections (slow fertility decline) and in 45 years according to the low projections (rapid fertility decline).

Table 147. Projected population growth, Sri Lanka, 1968-1998

Year	High projection	Medium projection	Low projection
1968	11,976	11,976	11,976
1973	13,585	13,522	13,398
1978	15,492	15,212	14,713
1983	17,726	17,037	15,969
1988	20,278	18,951	17,217
1993	23,095	20,848	18,475
1998	26,234	22,726	19,743

Period	Average annual growth rates (percentage)		
1968-1973	2.6	2.5	2.3
1973-1978	2.7	2.4	1.9
1978-1983	2.7	2.3	1.6
1983-1988	2.7	2.1	1.5
1988-1993	2.6	1.9	1.4
1993-1998	2.6	1.8	1.4
1968-1998	2.6	2.2	1.7

Source: Gavin W. Jones and S. Selvaratnam, *Population Growth and Economic Development in Ceylon* (Colombo, Hansa Publishers Ltd., 1972), table 7.

2. Census Department's projections

In 1974, the Department of Census and Statistics prepared a set of three projections covering the 1971-2000 period.^{16/} The age data from a 10 per cent sample tabulation of the 1971 census was graduated to remove the effect of age misreporting and corrections were also made for under-enumeration

^{16/} Published in CICRED, *The Population of Sri Lanka* (Colombo, Department of Census and Statistics, 1974).

of children below 5 years. The proportions in the adjusted age distribution were used to obtain the age-sex distribution of the estimated population as at midyear 1971.

Three projections, high, medium and low, were computed by the component method on the basis of three different fertility assumptions combined with a single assumption regarding future mortality trend. All three projections assumed further declines in fertility but to varying extents. For the high projection, it was assumed that fertility would fall slightly below the 1971 level and remain stable thereafter. The medium projection was based on an assumption of gradual decline in age-specific fertility rates to 60 per cent of the 1971 level by 2001. The low projection assumed a rapid decline to 50 per cent of the 1971 level within a period of 15 years and thereafter fertility to remain constant. With regard to mortality, the assumption in all three projections was that the expectation of life would increase to 72.2 years for males and 68.5 years for females, by 2001.

The projected total population according to the three projections are shown in table 148. The high projection shows that if the age-specific fertility rates remained stable after 1981 at rates only slightly below the 1971 level, the population would continue to grow at 2.3 per cent *per annum* and would very nearly double itself to 24.7 million in the period of 30 years from 1971 to 2001. This will be the result if family planning is not adopted by the large majority of the population and no catastrophic event occurs to deplete the population.

If the future course of fertility follows the trends in the medium projection, the population in 2001 will be 21.8 million, an increase of 70 per cent. The rate of growth declines gradually from 2.3 per cent in the period 1971-1976 to 1.4 per cent in the period 1996-2001. The low projection which assumes a rapid fertility decline gives an estimated population of 19.3 million in 2001. The rate of growth too drops sharply to 1.2 in the period 1981-1986 and remains constant thereafter. Thus even if fertility registers a dramatic drop, as dramatic as the decline in mortality in the period 1946-1950, and the rate of growth too drops to 1.2 per cent, the population in 2001 will be 19.3 million, an increase of 51 per cent. This is because the potential for population growth has already been built into the age structure of the population and even a rapid decline of fertility to 50 per cent of the 1971 levels in a period of 15 years cannot offset the increasing numbers of females who will be entering the reproductive age groups in the immediate future.

Table 148. Projected total population of Sri Lanka, 1971-2001

Year	High projection		Medium projection		Low projection	
	Population (thousands)	Rate of growth	Population (thousands)	Rate of growth	Population (thousands)	Rate of growth
1971	12,762	-	12,762	-	12,762	-
1976	14,280	2.3	14,280	2.3	14,202	2.2
1981	15,958	2.2	15,824	2.1	15,341	1.6
1986	17,882	2.3	17,357	1.9	16,242	1.1
1991	20,001	2.3	18,871	1.7	17,245	1.2
1996	22,291	2.2	20,342	1.5	18,312	1.2
2001	24,729	2.1	21,788	1.4	19,316	1.1
1971-2001		2.2		1.8	-	1.4

Source: CICRED, *The Population of Sri Lanka* (Colombo, Department of Census and Statistics, 1974), table 6.1 (data adjusted).

3. Projections of Srivastava and Abeykoon

Srivastava and Abeykoon have made four population projections.^{17/} In one of these termed the "control projection"; it is assumed that fertility will remain constant over the period 1971-1991 at 1971 levels. The purpose of this "control projection" is to provide a "control set" with which the other projections could be compared for deriving policy guidance.

For the other three projections, the following three alternative assumptions in regard to the average annual number of births were made:

Period	Average annual number of births (thousands)			
	Control	Projection 1	Projection 2	Projection 3
1971-1976	417	363	346	332
1976-1981	486	361	333	304
1981-1986	554	358	311	280
1986-1991	613	349	299	266

Source: R.K. Srivastava and A.T.P.L. Abeykoon, "The demographic situation in Sri Lanka - II", *Ceylon Labour Gazette*, vol. 25, No. 8, August 1974, table 2.

In regard to assumptions regarding the future course of mortality, the authors observed: "The death rates used by us are based, in demographic

^{17/} R.K. Srivastava and A.T.P.L. Abeykoon, "The demographic situation in Sri Lanka - II", *Ceylon Labour Gazette*, vol. 25, No. 8, August 1974.

terms, on carefully selected survival ratios. The latest available Life Table for Sri Lanka are for 1967. In order to judge mortality trends after 1967, we calculated mortality rates from reported deaths in 1971 and the estimated population of the same year. There appeared to be a small improvement in mortality between 1967 and 1971. For the present exercise we decided to use the appropriate survival ratios from the Model West Life Tables, the closest ratio for each sex-age group being selected on the basis of mortality levels between 1967-1971. These ratios were then assumed to improve slowly each quinquennium until 1981-1986, and remain constant thereafter. However, the slight increase in the death rate for the period 1986-1991 is due to the changing age-structure of the population which would imply from then onward a higher proportion of older people in the population."^{18/}

This is the only set of projections which has taken into consideration recent trends in international migration. The projections have assumed a migration rate of -3.0 and -2.8 per 1,000 persons during the quinquennia 1971-1976 and 1976-1981 respectively in all three projections and that international migration will not be an important factor after 1981. The birth, death and migration rates implied in the respective assumptions are summarized in table 149.

The starting point of the projection was the 1971 census age-sex distribution smoothed to eliminate age misreporting and adjusted to midyear. Since the

^{18/} R.K. Srivastava and A.T.P.L. Abeykoon, *loc.cit.*, p.513, footnote 3.

Table 149. Assumed birth, death and migration rates, 1971-1991

	(Per thousands)			
	1971-1976	1976-1981	1981-1986	1986-1991
Projection 1				
Birth rate	27.4	25.0	23.1	20.4
Death rate	7.0	6.3	6.0	6.5
Migration rate	-3.0	-2.8	-	-
Projection 2				
Birth rate	26.2	23.3	20.3	18.3
Death rate	7.0	6.3	6.0	6.5
Migration rate	-3.0	-2.8	-	-
Projection 3				
Birth rate	25.2	21.5	18.6	16.7
Death rate	7.0	6.3	6.0	6.5
Migration rate	-3.0	-2.8	-	-

Source: R.K. Srivastava and A.T.P.L. Abeykoon, "The demographic situation in Sri Lanka - II", *Ceylon Labour Gazette*, vol. 25, No. 8, August 1974, table 3.

population has been projected by five-year age groups for each sex, the component method seems to have been used but there is no indication given by the authors as to the specific nature of the computations (e.g. how the number of births was estimated). The results of the projections are summarized in table 150.

Under projection 3, which assumes the steepest decline in fertility, the population is expected to grow to 16.3 million by 1991 compared with the figure of 17.2 million for the same year in the Department of Census and Statistics low projection. Both projections, therefore illustrate the considerable population increase that would result even if a rapid decline in fertility were to occur.^{19/}

4. Frejka's projections

Tomas Frejka of the Population Council has recently computed five projections up to 2150.^{20/} "The

19/ A similar conclusion was made in regard to the projections by Selvaratnam and others. "It may be emphasized that since the present age structure of the population has high built-in potential for population growth, a 50 per cent increase in population during the next 23 years will take place even under assumption of rapid fertility decline."

20/ Tomas Frejka, *Reference Tables to the Future of Population Growth: Alternative Paths to Equilibrium* (New York, The Population Council, 1973); also published in *Sri Lanka: Country Prospects*: (New York, The Population Council, 1974).

Table 150. Alternative projections of population, 1971-1991

Projection	Projected population (thousands)				
	1971	1976	1981	1986	1991
Control	12,685	14,102	15,840	18,091	20,558
Projection 1	12,685	13,845	14,992	16,315	17,523
Projection 2	12,685	13,763	14,777	15,873	16,845
Projection 3	12,685	13,697	14,573	15,524	16,339

Projection	Average annual growth rate			
	1971-1976	1976-1981	1981-1986	1986-1991
Projection 1	1.7	1.6	1.6	1.4
Projection 2	1.6	1.4	1.4	1.2
Projection 3	1.5	1.2	1.2	1.0

Source: R.K. Srivastava and A.T.P.L. Abeykoon, "The demographic situation in Sri Lanka - II", *Ceylon Labour Gazette*, vol. 25, No. 8, August 1974, table 5.

variations of fertility assumptions constitute the basic analytical framework of the whole study. With the aim of illustrating the various population-growth consequences of extremely fast and varying degrees of moderate fertility decline that would ultimately lead to non-growing populations, it was decided to compute five different projections for each population unit. One projection differs from another by length of period of fertility decline (0, 10, 30, 50 or 70 years) and therefore also by speed of fertility decline. In the main set, or standard series, of projections fertility is assumed to decline from its current level to a level that corresponds to a net reproduction rate (NRR) of 1.0. Once an NRR of 1.0 is reached, it is assumed to remain at this level throughout the rest of the projection."^{21/}

The different assumptions in regard to fertility are as follows:

Projection	Description of fertility decline	Year in which NRR = 1 and remains constant thereafter
1	Immediate	1970
2	Precipitous	1980
3	Rapid	2000
4	Moderate	2020
5	Low	2040

21/ Tomas Frejka, *op.cit.*, p. 4.

Table 151. Total population and indexes of population size, Sri Lanka, 1970-2150

(1970 = 100)

Year	Period in which net reproduction rate of one is reached				
	1970-1975 Projection 1	1980-1985 Projection 2	2000-2005 Projection 3	2020-2025 Projection 4	2040-2045 Projection 5
1970	12.1 100	12.1 100	12.1 100	12.1 100	12.1 100
1975	12.8 105	13.5 110	13.6 112	13.7 112	13.7 113
1980	13.6 112	14.6 120	15.3 126	15.5 127	15.6 128
1985	14.5 119	15.6 128	17.0 140	17.4 143	17.6 145
1990	15.6 128	16.6 137	18.8 154	19.5 160	19.8 163
1995	16.5 136	17.7 146	20.4 167	21.6 177	22.1 182
2000	17.4 143	18.7 154	21.8 179	23.6 194	24.5 202
2010	18.6 153	20.4 168	24.2 199	27.7 228	29.5 243
2020	19.5 161	21.7 178	26.5 218	31.3 258	34.8 286
2030	20.1 165	22.5 185	28.3 233	34.1 281	39.7 327
2040	20.2 166	22.9 188	29.4 242	36.6 302	43.9 362
2050	20.4 168	23.0 190	30.2 248	38.5 317	47.3 389
2075	20.6 169	23.3 191	30.6 252	40.4 333	52.7 434
2100	20.6 169	23.3 192	30.7 252	40.6 335	54.1 445
2125	20.6 169	23.2 191	30.6 252	40.6 334	54.2 446
2150	20.5 169	23.2 191	30.6 252	40.6 334	54.1 446

Source: Tomas Frejka, *Reference Tables to the Future of Population Growth: Alternative Paths to Equilibrium* (New York, The Population Council, 1973), p. 424.

In all the five projections the same trend of future mortality has been assumed. The female expectation of life is expected ultimately to reach 75 years.

The projected total population for various years from 1970 to 2150 is shown in table 151. A highly significant finding that cannot be ignored by planners and policy makers is that even if a transition to replacement fertility (in $NRR = 1$) were to occur immediately (projection 1) the total population would grow to 17.4 million by 2000 and 20 million by 2030. This instant decline of fertility is however unlikely to occur. A rapid decline of fertility is a more likely event, and under this assumption (projection 3) the total population will be 21.8 million in 2000, 30.7 million in 2100 and 30.6 million in 2150.

those already born and alive at the base year of the projection. The estimated number of this segment of the population will be affected only by the mortality assumptions. Mortality has now stabilized itself at a fairly low level in Sri Lanka and improvements, if any, are bound to be very gradual. Moreover, at such low levels of mortality, slight variations in the assumed trends should not make a significant difference to the estimated number of survivors. It would therefore be interesting to examine how the projections in respect of this segment of the population compares with the estimates based on the results of the latest census. For purposes of this comparison, the projections prepared by the Department of Census and Statistics for the 1963-2003 period have been chosen. Table 152 shows a comparison of the 1971

Table 152. Comparison of projected 1971 population with actual 1971 midyear estimates (based on census) by age and sex, Sri Lanka

Age group	Actual population as at midyear 1971 (thousands)		Projected population 1971 (thousands)		Ratio of projected population to actual population	
	Male	Female	Male	Female	Male	Female
Total population						
	H		6,891	6,424	105.6	103.0
	M	6,523	6,858	6,392	105.1	102.5
	L		6,800	6,336	104.2	101.6
0-4	H		1,036	1,001	116.7	115.9
	M	888	1,010	976	113.7	113.0
	L		971	939	109.3	103.7
5-9	H		906	877	106.3	105.4
	M	852	898	870	105.4	104.6
	L		879	851	103.2	102.3
10-14		799	822	797	102.9	103.2
15-19		717	720	707	100.4	101.3
20-24		586	607	584	103.6	97.8
25-29		488	480	455	98.4	90.7
30-34		392	401	372	102.3	95.8
35-39		333	359	329	107.8	103.1
40-44		318	341	307	107.2	106.2
45-49		280	303	264	108.2	107.8
50-54		230	212	211	92.2	105.5
55-59		190	171	172	90.0	106.8
60-64		157	128	135	81.5	107.1
65-69		120	81	99	67.5	104.2
70-74		91	45	64	49.5	90.1
75 and over		81	27	40	33.3	51.3
Total 10 and over	4,983	4,543	4,950	4,546	99.33	100.1

H - High M - Medium L - Low

E. DETAILED AGE-SEX COMPARISON

In projections made by the component method, changes in fertility will not affect that part of the estimated future population derived as the survivors of

midyear population by sex and age groups ^{22/} with the corresponding projected figures.

^{22/} The age distribution is based on the 1971 census age distribution smoothed for age-misreporting.

All the three projections, viz. high, medium and low, over-estimate the total population for each sex, the extent of over-estimation being higher for males. The 9 per cent over-estimate of the low projection figure for the 0-4 age group shows that the actual decline in the number of births has been more than anticipated by the projection. The projected figures for the population aged 10 years and over, which is not affected by changes in fertility, are very close to the corresponding estimated 1971 midyear population.

The male population 10 years and over is underestimated to the extent of 0.7 per cent while the female population is over-estimated by only 0.1 per cent. Although the projection assumed no international migration, there was in fact a net out-migration of 79,000 persons during the period 1963-1971. While the projected total population aged 10 years and over is quite close to the estimated mid-1971 figure, the individual five-year age groups show

marked variations in the extent of under- or over-estimation. For males, the age groups from 35-39 to 45-49 are considerably over-estimated while the number in the higher ages are under-estimated. In the case of females, the numbers aged 25-34 years and 70 years and over are under-estimated while the numbers between ages 35-69 are over-estimated. The explanation for these errors probably lies in the fact that the changes implied in the projected mortality rates have not conformed to the actual changes in the age pattern of mortality.

F. AGE STRUCTURE AND FUNCTIONAL GROUPS

Almost all economic, social, cultural and political functions have their demographic framework, which is the population stratum supposed to perform a given function. Hence, it is essential to take a closer look into the structural aspects of population growth. One of the basic structural aspects of population is of course age, and the anticipated changes

Table 153. Projected population by functional age group, Sri Lanka, High, Medium and Low projections, 1971-2001

(Number in thousands)

Type of projection and projected year	Total population		Pre-school (0-4)		School-age (5-14)		Working age (15-64)		Old age (65 and over)	
	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
High projection										
1971	12,762	100.0	1,752	13.7	3,255	25.5	7,218	56.6	537	4.2
1976	14,280	100.0	1,892	13.2	3,392	23.8	8,375	58.6	621	4.3
1981	15,958	100.0	2,088	13.1	3,563	22.3	9,584	60.1	723	4.5
1986	17,882	100.0	2,384	13.3	3,897	21.8	10,753	60.1	848	4.7
1991	20,011	100.0	2,636	13.2	4,384	21.9	11,983	59.9	1,008	5.0
1996	22,291	100.0	2,851	12.8	4,927	22.1	13,330	59.8	1,183	5.3
2001	24,729	100.0	3,073	12.4	5,393	21.8	14,923	60.3	1,340	5.4
Medium projection										
1971	12,762	100.0	1,752	13.7	3,255	25.5	7,218	56.6	537	4.2
1976	14,280	100.0	1,892	13.2	3,392	23.8	8,375	58.6	621	4.3
1981	15,824	100.0	1,954	12.3	3,563	22.5	9,584	60.6	723	4.6
1986	17,357	100.0	1,989	11.5	3,767	21.7	10,753	62.0	848	4.9
1991	18,871	100.0	2,014	10.7	3,866	20.5	11,983	63.5	1,008	5.3
1996	20,342	100.0	2,028	10.0	3,931	19.3	13,200	64.9	1,183	5.8
2001	21,788	100.0	2,066	9.5	3,972	18.2	14,410	66.1	1,340	6.2
Low projection										
1971	12,762	100.0	1,752	13.7	3,255	25.5	7,218	56.6	537	4.2
1976	14,202	100.0	1,814	12.8	3,392	23.9	8,375	59.0	621	4.4
1981	15,341	100.0	1,544	10.1	3,490	22.7	9,584	62.5	723	4.7
1986	16,242	100.0	1,353	8.3	3,288	20.2	10,753	66.2	848	5.2
1991	17,245	100.0	1,492	8.7	2,838	16.5	11,907	69.0	1,008	5.8
1996	18,312	100.0	1,592	8.7	2,811	15.4	12,726	69.5	1,183	6.5
2001	19,316	100.0	1,628	8.4	3,031	15.7	13,317	68.9	1,340	6.9

Source: CICRED, *The Population of Sri Lanka* (Colombo, Department of Census and Statistics, 1974), table 6.2 (data adjusted).

in the age structure, expressed in terms of functional groups, have important implications for the planning of socio-economic development. There are several ways of grouping the population by age; however, for purposes of our discussion four groupings which are of immediate relevance to development planning have been adopted: (a) 0-4 years (pre-school age); (b) 5-14 years (school age); (c) 15-64 years (working age) and (d) 65 years and over (old age).

The present analysis of changes in age structure and functional groups is based on the projections of population for the period 1971-2001 prepared by the Department of Census and Statistics^{23/}. The projected population by functional age groups is shown in table 153. It will be observed that the pre-school age group is the one that will most significantly be affected by a decline in fertility. The number in this group, estimated at 1,752,000 in 1971 will by 2001 increase to 3,073,000 or by about 75 per cent in the high projection, and to 2,066,000 or by 18 per cent in the medium projection. According to the low projection based on rapid fertility decline, the pre-school age population increases to 1,814,000 in 1976, then decreases to 1,353,000 in 1986 and again increases to 1,628,000 in 2001. Nevertheless the number in this group in 2001 will be 7 per cent less than the number in 1971.

As noted earlier (chapter V) in the developed countries where both mortality and fertility are at very low levels, children under 15 years constitute only about 20-22 per cent of the total population compared with 39.2 per cent in Sri Lanka as at the 1971 census. It will be observed from the table that the main advantage to be gained by a decline in fertility is a reduction over the years in the proportion of children under 15 years. According to the high projection, this proportion will be still high, around 34 per cent, in 2001, but according to the medium projection, based on moderate fertility decline, this proportion reduces to 27.7 per cent, while in the low projection which assumes rapid fertility decline, the proportion will be 24.1 per cent by the end of this century.

In regard to the population of school-going age (5-14), it will be observed from table 153 that in the high projection, though the proportion of this group in the total population reduces itself from 25.5 per cent in 1971 to 21.8 per cent in 2001, there will

still be a rapid growth of this sector of the population. In terms of absolute numbers, children aged 5-14 years will increase from 3,255,000 in 1971 to 5,393,000 in 2001 or by about 66 per cent. In the medium projection however, the increase is much less, viz., only about 21.9 per cent over a 30-year period. In the low projection, not only is there a decline in the proportion of this group but there is also a decline in the absolute numbers, after, of course, an increase in the early years.

The most serious growth is that anticipated for the working age population with all its implications for employment and capital requirements. In the high projection, the proportion of persons aged 15-64 years will increase from 56.6 per cent in 1971 to 60.3 per cent in 2001, while the number of persons in this group will record a more than twofold increase from 7,218,000 to 14,923,000 during the same period. In the medium projection, though the proportion of this group in the total population will be higher than in the high projection at the end of the projection period, in terms of absolute numbers there will be a 100 per cent increase. In the case of the low projection, there will be an increase in the number by 82 per cent. It will also be observed that up to 1986, the number of persons aged 15-64 years are the same in all three projections. This is because the persons who will be 15 years and over in each of the years up to 1986 have already been born by 1971, and reductions in the number of births taking place after 1971 will not affect the number of persons in the 15-64 age group up to 1986. The reduced number of births occurring after 1971 will affect the working age group only after 1986.

It will also be observed from table 153 that the most rapid anticipated growth is implied in the projections of the old-age group, 65 years and over which will increase by two and half times from 537,000 in 1971 to 1,340,000 in 2001. The size of this group in a particular projection year is the same under all three projections. This is because the persons who will comprise this group during the projection period have already been born and were adults in 1971. However, as a proportion in the total population this group will record an increase from 4.2 per cent in 1971 to 5.4 per cent in the high projection, 6.2 per cent in the medium projection and to 6.9 per cent in the low projection by 2001.

The child dependency ratios, old-age dependency ratios and total dependency ratios according to the three projections are shown in table 154. It will be

^{23/} This is the only projection based on the 1971 census data which gives detailed age-sex breakdown of the projected population.

Table 154. Child dependency ratios^{a/}, old-age dependency ratios^{b/} and total dependency ratios^{c/} according to three projections, Sri Lanka, 1971-2001

Year	High projection			Medium projection			Low projection		
	Child-dependency ratio	Old-age dependency ratio	Total dependency ratio	Child-dependency ratio	Old-age dependency ratio	Total dependency ratio	Child dependency ratio	Old-age dependency ratio	Total dependency ratio
1971	69.4	7.4	76.8	69.4	7.4	76.8	69.4	7.4	76.8
1976	63.1	7.4	70.5	63.1	7.4	70.5	62.2	7.4	69.6
1981	59.0	7.5	66.5	57.6	7.5	65.1	52.5	7.5	60.0
1986	58.4	7.9	66.3	53.5	7.9	61.4	43.2	7.9	51.1
1991	58.6	8.4	67.0	49.1	8.4	57.5	36.4	8.5	44.9
1996	58.3	8.9	67.2	45.1	9.0	54.1	34.6	9.3	43.9
2001	56.7	9.0	65.7	41.9	9.3	51.2	35.0	10.1	45.1

Source: Computed on the basis of data in table 153.

Notes: a/ Number of persons aged 0-14 years per 100 persons aged 15-64 years.

b/ Number of persons aged 65 years and over per 100 persons aged 15-64 years.

c/ Number of persons aged 0-14 years and 65 years and over per 100 persons aged 15-64 years.

noted that the total dependency ratio which stood at 76.8 in 1971, declines to 65.7 in the high projection; to 51.2 in the medium projection and to 45.1 in the low projection. Thus in the high projection the decline is lower than in the medium and low projections. It will also be observed that the decline in the total dependency ratio is due to a decline over the years in the child dependency ratio. The decline in the child dependency ratios is more marked in the case of the low projection where the ratio is almost halved during the 30-year period compared to a decline by about 18 per cent in the high projection and by about 40 per cent in the medium projection. The old-age dependency ratio shows an increase over the years in all projections, the greatest increase being in the low projection.

G. ROLE OF PROJECTIONS IN PLANNING AND POLICY FORMULATION

Population projections have played two distinct roles in development planning and policy formulation in Sri Lanka. First, the future estimates of population have been taken into consideration in setting various development targets. Secondly, a consideration of the size of the probable future population and its implications have led to formulation of policies for moderating the rate of population growth.

The Ten-Year Plan, published in 1959, was formulated on the assumption that between 1957 and 1968, the population and workforce would increase

by 38.2 per cent and 37.8 per cent respectively.^{24/} These increases were derived from Selvaratnam's population projections^{25/} and the workforce projections^{26/} based on these population projections. For the purpose of the Plan, estimates were also made of the expected annual increases in population and workforce over the ten-year period based on the medium projection. The Plan took note of the fact that for the 10 years of the Plan the size of the workforce would not be affected by future changes in birth rates, although it could vary with alternative assumptions about labour force participation rates. In the field of education, the Plan sought to provide educational facilities for 896,000 additional pupils. In respect of housing, the needs were estimated on the basis of population increase in addition to the existing backlog. In the fields of health, social services, manpower, the projections entered significantly into the calculations of the Plan. Thus population projections formed one of the basic items of data on the basis of which the Ten-Year Plan was formulated.

^{24/} Government of Ceylon, *The Ten-Year Plan* (Colombo, National Planning Council, 1959), p. 59.

^{25/} S. Selvaratnam, *Population Projections for Ceylon 1956-1981*, (Colombo Planning, Secretariat, 1959). These projections were prepared at the request of the Planning Secretariat itself.

^{26/} R.M. Sundrum, V.R. Rao and S. Selvaratnam, *Manpower Resources of Ceylon 1956-1981* (Colombo, Planning Secretariat, 1959).

It would, however, appear that the projections do not seem to have been used to maximum advantage in the planning process, though their potentialities were fully realized by planning authorities. For instance, it was observed that: "Considerable use could perhaps be made of population projections relating to age groups, urbanization, etc., in detailed planning of hospitals, water supplies, schemes and so on," and again "Nevertheless, as in the case of programmes in the field of transport and communications, there is still considerable scope for the further improvement of these programmes through the application of more extensive programming techniques. These techniques would involve the use of long-term projections of school-going population and of estimates of manpower needs arising out of a development plan. It is only out of the general planning process itself that these data can emerge. The details of programmes presented in Part II are not complete in these respects". ^{27/}

The more recent Five-Year Plan, 1972-1976 ^{28/} also took into account the future population. It assumed that the population would grow to at least 15 million by 1980 and 20 million by 2000. ^{29/} It was also estimated that there will be additions of about 550,000 to the labour force during the plan period. ^{30/} The investments in education took into account the expansion of school facilities in relation to the increase in school-going population.

As noted earlier, the implications of the projected growth of the country's population have prompted the need for formulating appropriate policies for slowing down the rate of population growth. For instance, the Ten-Year Plan formulated in 1959 stated:

"It is clear that unless there is some prospect of a slowing down in the rate of population growth and of relative stability in at least the long run, it is difficult to envisage substantial benefits from planning and development. It is not so much the size of the population in an

^{27/} *The Ten-Year Plan*, *op.cit.*, p. 47.

^{28/} Government of Ceylon, *The Five-Year Plan 1972-1976* (Colombo, Ministry of Planning and Employment, 1971).

^{29/} These estimates were based on the projections of the population for the period 1963-1998 prepared by S. Selvaratnam, Nicholas H. Wright, and Gavin W. Jones, *op.cit.*

^{30/} These estimates were based on the labour force projections based on the population projections of Selvaratnam, Wright and Jones. See R.K. Srivastava, Gavin W. Jones and S. Selvaratnam, "Labour force projections for Ceylon 1968-1998", (Colombo, Ministry of Planning and Economic Affairs, June 1970) (mimeo).

absolute sense but rather the rate of increase that tends to frustrate attempts to step up the rate of investment and to increase incomes per head."

The Plan further recommended that "the whole question of population policy in all its aspects be made the subject of a nation-wide inquiry." ^{31/}

Although the importance of a reduced rate of population growth to achieving faster growth in *per capita* income was realized by the planners, government support for and activity in the field of, family planning was modest and limited until 1965. The problems of unemployment and pressure on schools etc. that were created by the high rate of population growth as well as the currently large population size were causing concern to the government. This concern was intensified by the fact that the numerous population projections showed that even according to the most optimistic assumption of early and rapid declines in fertility, the population of the country would increase to about 20 million by 2000. There is no doubt that this consideration was also one of the factors leading to the government's adoption of family planning as a national programme in 1965.

H. REVISION AND REVIEW

The results that emerge out of the population projections are naturally dependent on the specific assumptions that are made in regard to the future course of fertility, mortality and migration. These assumptions are made on the basis of information available at the time of making these projections. Thus any set of projections should not be considered as final; they are subject to review and revision with the availability of additional data, not only for more recent periods but also (more refined data) for earlier years.

It may be observed that in all the projections discussed in earlier sections, future trends in fertility and mortality have been estimated by extrapolation of trends or by assumptions of a somewhat

^{31/} *The Ten-Year Plan*, *op.cit.*, pp. 16-17. Also see chapter X of this report for summary of discussion relating to inter-relationship between population growth and development contained in the other development plans published by the Government.

arbitrary character. For more realistic projections it may be necessary to identify some of the social and economic factors influencing fertility or mortality and relate future trends in fertility and mortality to these factors. For example, in Sri Lanka, age-specific fertility rates have been influenced by trends in marriage and changes in fertility within marriage. Recent declines in age-specific fertility rates in Sri Lanka have been attributed to the joint effect of declines in the proportions of females married and a fall in marital fertility. Since different combinations of changes in marriage patterns and marital fertility rates can result in changes in age patterns of fertility, it becomes necessary to take into account both marriage patterns and marital fertility rates in making population projections.

It may also be noted that in Sri Lanka, current trends in marriage with declines in the proportions of married females in the younger age groups are to a large extent due to increasing unemployment among young men. Reduction in fertility due to late marriage cannot be expected to be permanent. One of the goals of economic development being the provision of full employment, any "solution" to the unemployment problem resulting in the creation of more jobs could lead to an increase in marriages. This may lead to a rise in the number of births, somewhat like the post-war baby boom, unless counteracted by reduction in marital fertility rates. Therefore, in making assumptions about future fertility trends, it may be necessary to make allowances for these different factors separately.

CHAPTER XII

POPULATION GROWTH AND EDUCATIONAL DEVELOPMENT

A. INTRODUCTION

The manner in which population growth affects educational development may be considered as being twofold. First, there is the direct impact of increased numbers that have to be provided with education as the population grows. The intensity of this problem would depend on the proportion of the school-age population that has yet to be brought into school, the rate at which the population grows, the resources that the country is willing to spare for education and the country's target dates for achieving universal schooling for all children of school-going age. Secondly, there is the more complex manner in which population growth affects educational development through its impact on the socio-economic system. For instance, rapid population growth could both directly and indirectly contribute towards increased unemployment. This in turn could intensify the selection function of education to such an extent as to deform education's major function, viz., education for education's sake.

However, these two sets of problems are not as separate from each other as they would appear, because along with the rapid expansion of educational systems arises the need to modify the educational programmes if they are to remain functionally valid to these increasing numbers. It is not likely that educational programmes valid for, say, 20 per cent of the school-going age population would remain valid when the enrolment rises to, say, 70 per cent. An analysis of the above two sets of problems may be approached from a historical perspective. An examination of past trends should help one understand the significant features of the current scene, and these two together would enable the making of reasonable projections into the future.

B. EDUCATION SYSTEM

1. Early periods

Sri Lanka has a very long standing tradition of organized education.^{1/} *Pirivenas*, mainly for the

^{1/} For detailed discussion on the system of education in ancient times, see U.D.I. Srisena, "Introduction"; S. Paranavitana, "Chapter 6: The Mahavihara and other ancient seats of learning"; M.B. Ariyapala, "Chapter 14: Life and aspirations of the people as conditioned by their education," *Education in Ceylon, A Centenary Volume* (Colombo, Ministry of Education and Cultural Affairs, 1969).

monks, but also for a few laymen from the leisured classes, functioned as centres of Buddhist learning from ancient times. It was only a very small fraction of the appropriate age group that were catered to by this formal education system. The preparation of the younger generation for citizenship and for work, however, did not come within the purview of these institutions. In certain special vocations such as indigenous medicine, dancing and music, fine arts etc., education and training were undertaken by master practitioners in their homes and were imparted to "apprentices" handpicked by them.

Thus, for the large majority there was no formal education as such — it was socialization that equipped them for both vocational as well as non-vocational roles in society. Caste-based occupations such as potters, masons, blacksmiths, dancers etc., were also mostly trained within the family, although in some of them, renowned practitioners took on "apprentices". This type of provision for education and training was adequate at a time when most of the occupations were technologically simple and the organization and structuring of systematic knowledge under the various disciplines had not developed. Moreover, each village had more or less a self-sufficient economy in which each individual had, by and large, a definite occupational role, generally determined for him at birth by his caste. It was the wider vistas of later times with division of labour, increasing trade, specialization, technology and liberal politics that broke down the above feudal system.

2. Colonial era

As noted in the introductory chapter, the Portuguese were the first colonial power to land in Sri Lanka. They arrived in 1505 and Roman Catholic missionaries came soon after. It was the policy of the Portuguese to convert their colonial people to their own faith and thereby establish cultural and social links with them. For the first time in Sri Lanka, schools were started. These were opened by the missionaries in their parish churches. Larger colleges were opened in mission centres such as Kotte, Mutwal and Jaffna. The main content of the curriculum was Christianity. They were also taught to read, write and sing in the Portuguese language. In the larger colleges, Latin was also taught. The better and the more devoted students were recruited

to the Christian priesthood and sent to schools of theology for ecclesiastical studies.^{2/}

It will be seen that in the methods of teaching and content this new institution, "the school", did not differ significantly from the *Pirivena* of pre-colonial days. However, in regard to a non-educational function there was a significant difference between these two sets of institutions and it was this function that was later to mould the institutions of formal education. Even at this very early stage, school certificates and the competence to read and write the Portuguese language that it indicated, came to be accepted as qualifications for government employment. In this manner started the initial linkages between formal education and employment in the "modern sector."

When the Dutch took over the Portuguese parts of the territory in Sri Lanka in 1656 they started on a programme of missionary school education with even greater enthusiasm than the Portuguese. They used the indigenous languages, Sinhala and Tamil, much more than the Portuguese. School boards were set up in each of the administrative divisions and regular annual school inspections were conducted by these boards. Headmasters of the parish schools, who also functioned as registrars of marriages and the keeper of the roll of the parish, commanded great respect in the community. Attendance at school was almost compulsory for all Christian children and favours from the rulers could be expected only by those whose names were included in the parish roll. Thus the school, Christian faith and education were accepted as providing access to favours from those in power.^{3/}

In 1796, the Dutch had to surrender their territory in Sri Lanka to the British whose interest in education of the natives was due on the one hand to the infinite possibilities it offered to convert the people to Christianity, and, on the other, to the means it provided for recruiting to the public service "respectable individuals connected with England by

2/ For further discussions on education under the Portuguese, see Rev. Fr. W.L.A. Don Peter, "Chapter 26: Portuguese missionary activity in the sphere of education," and "Chapter 27: The Portuguese and the study of the national languages"; Rt. Rev. Edmund Peiris, "Chapter 29: Literary activity in Sinhala and Tamil during the Portuguese and Dutch times"; P.B. Sannasgala, "Chapter 30: The influence of the Portuguese and the Dutch on the life and thought of the people" in *Education in Ceylon, op.cit.*

3/ For fuller discussion on education during the Dutch period, see S.A.W. Motta, "Chapter 28: Education under the Dutch" in *Education in Ceylon, op.cit.*

education and office; and connected by ties of Blood with the principal native families in the country." Thus, though during the early years, the British neglected the wide network of parish schools that had been built by the Dutch, very soon they revived them because they realized that "if the plans introduced by the Dutch were quietly and steadily pursued, there was good reason to believe that the whole Cingalese (Sinhalese) nation might in time be converted." In order to create a local ruling class "indigenous in blood and colour but English in tastes, in opinion, in morals and in intellect", the British established a few English medium schools which were attended by the sons of the chieftains and of the few wealthy families.^{4/}

In this manner the British established their well-known dual system of schools in Sri Lanka too. The fee-levying English medium schools, with highly qualified teachers and rich facilities, preparing a limited number of students for the civil service and other senior and mid-level positions in the public service and the learned professions of law, medicine and later engineering, were for the privileged few in society. They were run mostly by the denominational bodies. The non-fee-levying, vernacular medium schools with poorly qualified teachers and very poor facilities were for the poorer masses and were established in the early stages mainly to convert the people to Christianity and also to impart basic literacy.

This stark contrast in the provision of educational opportunities did not continue for long. With the grant of the universal franchise in 1931 and the introduction of a representative form of government there were considerable agitations for educational reforms.^{5/} In 1943, the Special Committee on Education^{6/} recommended that education should be free

4/ For further discussions, see T. Ranjit Ruberu, "Chapter 31: Early British educational activities" and Kingsley M. de Silva, "Chapter 32: Influence of the English Evangelical movement on education in Ceylon" in *Education in Ceylon, op.cit.*

5/ See H.A.J. Hulugalle, "Chapter 41: The national movement and its influence on education"; and U.D.I. Srisena, "Chapter 42: Demand for universal compulsory education" in *Education in Ceylon, op.cit.*

6/ Prior to the setting up of the Special Committee on Education, reforms in education has been the subject of investigation by several other committees and commissions. See Lakshman S. Perera, "Chapter 33: The Colebrooke Commission and Education Reforms"; Charles Godage, "Chapter 34: The School Commission"; A. Rajaindran, "Chapter 36: The Department of Public Instruction" in *Education in Ceylon, op.cit.*

at all levels, that instruction should be through the medium of the mother tongue and that education, if it were at all to ensure equality of opportunity should be based on ability with greater participation by the state.^{7/} In 1945, all education from kindergarten to the university was declared free and the mother tongue of the pupil was adopted as the medium of instruction in all schools. "These measures stimulated unprecedented interest in education throughout the country and were largely responsible for making quantitative expansion one of the chief concerns of the policy makers during 1945-1960".^{8/}

3. Post-independence period

As noted earlier, Sri Lanka regained political independence in 1948 and since then there has been further changes in the educational system in the country. In 1960 and 1961, special legislation was undertaken to bring most of the "assisted schools," i.e., schools which received financial assistance from the government but were managed by private bodies, under the management and control of the government thus bringing to an end duality of control^{9/} in education.

Another important change in the educational system has been the diversification of education. In the past, the education provided was exclusively of a literary, academic type and even scientific and technical education received only minimum emphasis. The introduction of free education greatly increased the absolute quantum of education but failed to make basic changes in the type and quality of educational provision. "The educational system continued to expand in response to demographic social and political pressures, but without due regard to the manpower needs of a developing economy".^{10/}

7/ K. Alvapillai, "Chapter 53: The Special Committee on Education," *Education in Ceylon, op.cit.*

8/ *A Ten-Year (1968-1977) Perspective on Level I and II Education in Ceylon* (Colombo, Ministry of Education, 1968) (mimeo.).

9/ See A. Rajaindran, "Chapter 37: Dual control in education," *Education in Ceylon, op.cit.*

10/ S. Selvaratnam, "Manpower and economic development in Ceylon", Presidential Address, Social Science Section, Ceylon Association for the Advancement of Science, 1968, in *Proceedings of the Twenty-fourth Annual Session of the Ceylon Association for the Advancement of Science*, (Colombo, 1969) p. 210. Also the IBRD Education Mission observed: "The system has expanded without any consideration either of the manpower needs of the country or of the financial resources available. The content is heavily weighted in favour of the humanities and the approach too academic," in IBRD/IDA Mission, *Ceylon: Preliminary Survey of Education* (Colombo, Ministry of Planning and Economic Affairs, 1966), p.1.

Hence in the late 1950s and early 1960s there was a conscious effort to extend the teaching of science, which until then had been limited almost exclusively to a few urban schools, into the secondary grades of the better developed schools in the rural areas. This entailed a diversification of the secondary school system by the provision of adequate facilities for the teaching of science and allied subjects including the establishment of science laboratories, workshops home economics rooms and agricultural units. The 1960s also witnessed an expansion of vocational education to provide training programme at the technician and craft level.

The expansion of science and vocational education was also accompanied by work in curriculum development and connected activities. "Curriculum Development work was most sustained and intensive in respect of the science subjects at the G.C.E. (OL) [General Certificate of Education, Ordinary Level] grades, but its methodology had an impact on other areas of the school curriculum as well. In 1964 work on a massive undertaking commenced with the decision to introduce the teaching of Mathematics as distinct from Arithmetic in the middle grades in all schools beginning with grade 6 in 1965. Very thorough and detailed handbooks were prepared for the purpose. Supporting pupil texts were published and in-service training for teachers on an all-Island scale was organized. Subsequently similar steps were taken for almost all subjects in the middle school (grades 6 to 8) curriculum".^{11/}

4. Structure of the school system

Until 1964, the minimum age of admission to schools was 5 years and the full course of general education was of 13 years duration with two years at the kindergarten, four years at the primary, three years at the junior secondary and four years at the senior secondary levels. Since then the minimum age of admission has been raised to 6 years and the duration of the general education course reduced to 12 years. Until 1971, the school system of Sri Lanka was structured into four segments as follows:

Primary school	Grades I to V
Middle school	Grades VI to VIII
Secondary school (1st cycle)	Grades IX and X
Secondary school (2nd cycle)	Grades XI and XII

11/ E.L. Wijemanne and M.E. Sinclair, "General education: some developments in the sixties and prospects for the seventies," *Marga*, vol. I, No. 4, 1972, p.6. Also see K.S. Arulnandhy, "Chapter 78: Attempts to diversify education"; E.L. Wijemanne, "Chapter 79: Development of the curriculum", in *Education in Ceylon, op.cit.*

Children were allowed to stay in school until the end of the third segment; in other words, the first three segments or the first 10 grades constituted what may be called the "open-access span" of schooling. The first public examination, the General Certificate of Education Examination, Ordinary Level (GCE 'OL') came at the end of grade X. In order to be eligible to proceed to the next segment, i.e. grade XI, a pupil had to satisfy certain requirements (passes in six subjects with three at credit-level) in the performance at the GCE 'OL' examination. About 10 per cent reached this standard and proceeded to the second cycle of the secondary school which constituted the GCE 'AL' (General Certificate of Education, Advance Level) grades.

Pupils were allowed two attempts at the GCE 'OL' examination while at school. Those failing to satisfy the above mentioned requirement of six passes with three at credit level at the second attempt had to leave school. However, a fair proportion of those who could afford to do so, joined private tutories and repeatedly sat the GCE 'OL' examination to complete the six passes with three credits. Some of them then re-entered the school system at grade XI.

The GCE 'AL' examination was a subject examination and for the full course in grades XI and XII, any four subjects could be offered. This was primarily a pre-university course, selection for admission to the university being made on the results of this examination. Hence, in the selection of the subjects, pupils were guided by what they intended to study in the university in case they were selected. Those studying science offered physics, chemistry, pure mathematics and applied mathematics or physics, chemistry, botany and zoology. The former group proceeded to engineering and physical science and the latter group proceeded to medical, agricultural or biological sciences in the university. Those offering arts and commercial subjects selected their four subjects from a large number of subjects provided at the examination. There were no compulsory subjects at this examination.

In 1972, further structural changes were made in the school system whereby the earlier four segments were reduced to three segments as follows:

Primary school	Grades I to V
Junior secondary school	Grades VI to IX
Senior secondary school	Grades X and XI

These changes resulted in (a) the introduction into the junior secondary school a common comprehensive curriculum including science, mathema-

tics, social studies, aesthetic studies, second language etc.; (b) the first public examination (the selection hurdle) to be held at the end of the junior secondary school. This examination which replaced the GCE 'OL' would be known as the National Certificate of General Education Examination (NCGE) and (c) the course of study at the senior secondary school being available to those who reached a specified performance level at the NCGE examination. The new grades X and XI would prepare students for Higher National Certificate of Education (HNCE) Examination, which became the "selection hurdle" for entry into the university, technical institutes, teacher colleges etc.

C. TRENDS IN EDUCATIONAL ENROLMENTS

1. First and second level enrolments

The growth in school enrolments at the first and second level of education is shown in table 155. It will be seen that the total number of enrolments

Table 155. Growth in school enrolments, Sri Lanka, 1931-1975

Year	Number of persons enrolled in schools		
	First level	Second level	Total
1931	...	...	553,701
1945	...	...	867,309
1947	...	...	1,025,836
1952	1,193,521	295,808	1,489,329
1953	1,237,191	327,657	1,564,848
1954	1,266,610	346,140	1,612,750
1955	1,289,327	363,456	1,652,783
1956	1,329,543	384,381	1,713,924
1957	1,446,624	426,060	1,872,684
1958	1,525,013	477,183	2,002,196
1959	1,599,241	541,461	2,140,702
1960	1,642,881	591,135	2,234,016
1961	1,661,795	655,698	2,317,493
1962	1,648,858	701,790	2,350,648
1963	1,750,239	710,455	2,460,694
1964	1,810,509	810,418	2,620,927
1965	1,736,100	820,700	2,556,800
1966	1,696,300	835,505	2,531,805
1967	1,645,600	817,700	2,463,300
1968	1,679,500	828,200	2,507,700
1969	1,753,300	887,200	2,640,500
1970	1,679,500	948,600	2,628,100
1971	1,711,800	1,005,700	2,717,500
1972	1,471,400	1,078,200	2,549,600
1975	1,444,100	1,099,200	2,543,300

Source: Ministry of Education.

recorded a continuous increase from about 554,000 in 1931 to about 2,621,000 in 1964, thereafter gradually declining to 2,463,000 in 1967 and then increasing to 2,718,000 in 1971. It will also be noted that enrolments at the second level have shown a steady increase throughout the period 1952-1971 except for a slight dip in 1967; enrolments at the first level grew steadily until 1964, fluctuating violently thereafter.

Though there was a continuous growth in total enrolments between 1931 and 1964, this growth was not uniform throughout the period. During the 16-year period 1931-1947, the total enrolments increased by about 472,000 or at about 29,500 *per annum*, and the average annual rate of increase was 3.9 per cent. But during the subsequent five years, 1947-1952, the increase in enrolments averaged about 92,700 *per annum*, the average annual rate of increase being 7.7 per cent. The rate of increase in total enrolments averaged about 4.7 per cent between 1952 and 1957, and 4.9 per cent between 1957 and 1964. Thus the most striking increase in enrolments occurred during the quinquennium 1947-1952.

The sharp increase in enrolments between 1947 and 1952 was due to the operation of a number of factors. In the first instance, there was an increase in the size of those age groups in the general population from which the school-going population is drawn. As noted in chapter I, there was a sudden spurt in the growth of Sri Lanka's population between 1946 and 1953 due to a sharp decline in the death rates and this growth was particularly marked in regard to the younger age groups. Children aged 5-9 years increased from 811,363 in 1946 to 1,085,914 in 1953, an increase of 33.8 per cent, while children in the age group 10-14 years recorded an increase by 14.2 per cent from 805,642 in 1946 to 920,186 in 1953. Secondly, as noted earlier, the system of free education which was brought into operation in October 1945 also contributed to a great extent to the increase in school attendance. Thirdly, the increase in the school-going population was only made possible by an increase in the number of schools and in the number of teachers. The number of schools increased from 5,915 in 1947 to 6,209 in 1948, to 6,319 in 1950 and to 6,728 in 1954—an increase of 404 schools between 1947 and 1950, with another 409 schools between 1950 and 1954. The number of teachers also recorded an increase from 27,710 in 1947 to 49,283 in 1954.

The average annual rates of growth of total, first

level and second level enrolments are given below:

Period	First level	Second level	Total
1952-1957	3.92	7.57	4.69
1957-1964	3.26	9.62	4.92
1964-1971	-0.95	3.14	0.42

It will be noted that in all three periods, enrolments at the second level have increased at a faster rate than enrolments at the first level. The higher rate of increase in enrolments at the second level is due to a number of factors, the most important being the free education scheme which enabled a larger proportion of the eligible students than hitherto to participate in secondary education. Added to this was the fact that the larger proportion of children enrolled in the primary schools during 1947-1952 and 1952-1957 moved into the secondary schools during 1952-1957 and 1957-1964 respectively. Thirdly, as noted earlier, the quality improvement programmes initiated at the second level in the fields of science, mathematics and second language have made second level education more attractive to students thereby increasing the retention rates.

2. Enrolment ratios

The proportion of the school-age population that is enrolled in the school system depends on: (a) whether schooling is made compulsory by legislation; (b) if it is, the manner in which the provisions of such legislation are being implemented; and (c) if it is not, how great the popular desire for education is. It has been observed: "Although it is commonly believed that legislation exists in Ceylon making education compulsory for all children between the ages of 5-14, the true position is that no such uniform legislation exists."^{12/} The principal ordinance governing education in Sri Lanka is the Education Ordinance No. 31 of 1939. While this Ordinance prescribed the age at which a child is liable to attend school in the case of estate schools, the Executive Committee was empowered to make regulations requiring attendance at school in respect of non-estate schools. "The position seems to be that only regulations that are in force today in respect of non-estate schools are the by-laws made by the local authorities or the Education District Committees covering the areas over which they had

^{12/} Government of Ceylon, *Interim Report of the National Education Commission*, Sessional Paper I, 1962, p. 4.

jurisdiction. These by-laws would seem to vary from area to area."^{13/} In view of this somewhat anomalous legal position regarding compulsory education, it would be incorrect to expect all children of a particular age group to attend schools.

Nevertheless, a comparison of enrolments in grade I with the number of children in the appropriate age group may indicate the progress achieved in regard to the proportion of the eligible population entering the school system with or without legal compulsion. The usual index used for measuring this progress is the enrolment ratio or the number of enrolments in grade I per 100 children in the appropriate age group. The use of this index, however, is not very meaningful in the context of the Sri Lankan situation for two important reasons. First, because compulsory school attendance is not prescribed, specific age-grade relationship cannot be easily determined to make the required calculations. The available information indicates that though the age of admission to schools was fixed by regulations at 5 years, the composition of grade I is, in the main, from four single year age groups 5 + to 8 + .^{14/}

A further difficulty experienced in deciding the specific age-grade relationship arises from the fact that while the school-entry age is fixed with reference to the first month of the school year which coincides with the calendar year, the enrolment statistics relate to 30 September when the school census is taken. "The school entry age being 5 years, it follows that the number of children who will be either 5 or a little over than that on 1st January will be in a minority in Grade I. Consequently the bulk of children will be around six years old on the day of the school census. Hence in order to have an approximately correct idea of the proportion of population entering the school system, it would be undesirable to compare enrolments with the population of a single year group either 5 + or 6 + ."^{15/}

^{13/} *Ibid.*

^{14/} W.D. Fernando, *Quantitative Development of First and Second Level General Education in Ceylon 1970-1980* (Colombo, Ministry of Education, April 1970), p. 22. According to the school census held in September 1967, it was observed that the grade I pupils consisted of about 33 per cent of those aged 5-6 years, 59.9 per cent of those aged 6-7 years, 23 per cent of those aged 7-8 years and 7.6 per cent of those aged 8-9 years.

^{15/} *A Ten-Year (1968-1977) Perspective on Level I and Level II Education in Ceylon, op.cit.*, p. 2.

The enrolment ratios given in table 156 are, therefore, based on a combined population made up of 25 per cent of the age group 5 to 6 years and 75 per cent of the age group 6 to 7 years.^{16/} It will be observed that enrolment ratios in respect of grade I exceed the corresponding age group by 18 to 50 per cent. This coupled with the fact that the average attendance at school is around 80-85 per cent suggests that during the period under review the government provided 20-50 per cent more places in schools than required for universal education, and 40-65 per cent in excess of the needs in terms of average attendance.

Table 156. Enrolment ratios for grade I, 1953-1971

Year	Population ^{a/} (thousands)	Enrolment (thousands)	Enrolment ratio (percentage)
1953	234.6	338.7	144.4
1954	241.4	329.9	136.7
1955	248.1	339.2	136.7
1956	254.8	349.5	137.2
1957	261.7	390.0	149.0
1958	268.3	399.8	149.0
1959	275.1	413.0	150.1
1960	281.7	414.8	147.2
1961	288.5	397.8	137.9
1962	295.2	364.0	123.3
1963	302.0	406.6	134.6
1964	310.8	385.6	124.1
1965	320.7	380.8	118.7
1966	329.4	431.9	131.1
1967	333.0	419.8	126.1
1968	333.5	429.1	128.7
1969	335.2	461.8	137.8
1971	339.9	420.0	123.6

Sources: (1) For enrolment data, see UNESCO, *Progress of Education in the Asian Region, A Statistical Review 1969 and Second Statistical Supplement, 1975.*

(2) Population estimates: 1953 to 1962 based on S. Selvaratnam, "Population projections 1956-1981"; 1963 to 1970 based on Technical Working Group, "Population projections 1963-1978" and 1971 figure estimated on the basis of the 1971 census data.

Note: ^{a/} 25 per cent of 5-6 years old plus 75 per cent of 6-7 years old.

The provision of excess school capacity may be due to either the existence of repeaters or the existence of overage children. The relative significance of the two factors over the various years is not known. However, the undesirability of large-

^{16/} W.D. Fernando, *op.cit.*

scale detention in grade I was recognized by the government and efforts were made to eliminate wastage on this score. It may also be noted that in a developing country like Sri Lanka, with the passage of time and with the provision of increasing school facilities, parents realize the value of sending their children to school. Hence it is inevitable in the early stages that children of over age should seek admission in schools and that pupils belonging to several age groups are found in grade I. It would neither be possible nor desirable to refuse their admission. Further, in the absence of adequate legal sanction, it would be a difficult and slow process to ensure enrolment as soon as a child reaches its fifth year.

An interesting feature in regard to grade I enrolments is that during the period 1953-1969, the numbers entering the school system did not show any definite trend. It will be seen from table 157 that in six of the 16 years, the total numbers in grade I was less than in the preceding year and the increase was over 10 per cent only in three years. These fluctuations must have put a considerable strain on those responsible for providing school places. Moreover, they clearly indicate a lack of concerted effort on the part of the authorities to enrol the increasing proportion of children who attain school age, and lack of enthusiasm on the part of the general population.

Table 157. Growth of enrolments in grade I, 1953-1969

Year	Enrolments (thousands)	Percentage increase or decrease over the preceding year
1953	338.7	-
1954	329.9	-2.6
1955	339.2	+2.8
1956	349.5	+3.0
1957	390.0	+11.6
1958	399.8	+2.5
1959	413.0	+3.3
1960	414.8	+0.4
1961	397.8	-4.1
1962	364.0	-8.5
1963	406.6	+11.7
1964	385.6	-5.2
1965	380.8	-1.2
1966	431.9	+13.4
1967	419.8	-2.8
1968	429.1	+2.2
1969	461.8	+7.6

Source: Based on data in table 156.

An analysis of the trends in enrolment ratios for the first and second levels of general education is rendered difficult by a lack of uniformity in regard to the definition of the two levels. Though for purposes of the present analysis, first level education is deemed to constitute grades I to V corresponding to the ages 5 to 9 years, the UNESCO Regional Office defined first level education to include grades I to VIII corresponding to ages 5 to 12 years, while the Ministry of Education had included grades I to VII corresponding to ages 5 to 11 years in this level.^{17/} Consequently there has also been changes in the definition of the second level education. Further, even if grades I to V are considered as constituting first level education, the corresponding age groups have varied because of changes in the structure of the education system. Until 1964 there were two kindergarten years designated as grades IA and IB and the school course at the first level consisted of six years. Since 1964 the two kindergarten years have been amalgamated as one year in grade I and the first level course reduced to five years. In view of these difficulties, separate enrolment ratios for the first and second level of general education have not been computed; instead one combined ratio is used to discuss the trend in enrolment ratios at these two levels.

It will be seen from table 158 that there has generally been an increase in the enrolment ratios at the first and second level of general education from 59 per cent in 1950 to 72 per cent in 1969. This reflects the expansion of the provision of schooling facilities to cope with the increase in school-age population.

Table 158. Enrolment ratio for first and second levels of general education, Sri Lanka, 1950-1969

Year	Enrolment ratio
1950	59
1952	60
1955	62
1960	71
1964	69
1965	71
1966	73
1967	70
1968	69
1969	72

Source: Ministry of Education.

^{17/} See UNESCO, *Progress of Education in the Asian Region - Statistical Supplement* (Bangkok, 1972) and W.D. Fernando, *op.cit.*

Table 159. Age-specific school participation rates, Sri Lanka, 1955-1974

Year	5-9 years	10-14 years	15-19 years
1955	72.2	54.5	11.5
1956	72.0	54.1	11.3
1957	75.5	56.1	12.1
1958	77.0	58.3	12.1
1959	77.9	60.5	14.7
1971	84.5	71.2	16.3
1974	73.3	65.1	22.2

The age-specific school participation rates, that is the number of school-going children in a particular age group per 100 of the total population in that age group, are given for selected years in table 159. It will be noted that until 1971, the participation rates in respect of all their age groups had shown increases. The rate of participation at the primary level in the age group 5-9 reached 84.5 per cent while the rate for the 10-14 age group in 1971 was 71.2 per cent. These rates are relatively high by Asian standards. Between 1971 and 1974, the rates for the 5-9 and 10-14 age groups declined while the rate for the 15-19 age group recorded an increase. "Even after making allowance for the reduction of the open access span from 10 years to 9 years, there appears to have been a marginal decline in the total school enrolment and the participation in the school system during the period 1971-1974".^{18/}

The patterns of participation in the school system in 1971 in terms of age are shown in table 160. It will be observed that in the age group 5-9 years, the participation rates for both sexes range from a low of 55.5 in Batticaloa District to a high of 95.6 per cent in the Colombo District. Besides Colombo, Galle, Matara and Jaffna districts have participation rates of more than 90 per cent. In regard to the 10-14 years group, participation rates for both sexes are lowest in Monaragala District and highest in Jaffna District, followed by Galle and Matara districts. The participation rates in respect of the 15-19 age group for both sexes range from a low of 9.3 in Vavuniya to a high of 19.5 in Galle District.

It will also be noted from table 160 that there are no marked differences between the rates of partici-

pation of males and females in education. For the country as a whole, in 1971, the participation rates for males and females aged 5-9 years were 88.4 per cent and 80.5 per cent respectively. The district differences were also not very significant. The highest difference between male and female participation was observed in the Matara district — a difference of 15.7 percentage points. In all districts, the male participation rates exceeded the female rates.

The sex pattern of participation in the age group 10-14 years is however different. For the country as a whole, the female rate in this age group, 72.0 per cent, is higher than the rate for males 70.5 per cent. In 11 districts, Colombo, Kalutara, Matale, Matara, Hambantota, Kurunegala, Anuradhapura, Polonnaruwa, Monaragala, Ratnapura and Kegalla, the female participation rates were higher than the male rates. In the other 11 districts, male rates were higher than the rates for females.

In regard to the age group 15-19 years, the participation rate of females for the country as a whole is about 2.2 percentage points higher than the rate for males. The female participation is higher in 12 districts while in the other 10 districts, the male rates exceed the rate for females. Among these 10 districts, the difference was very marginal in seven districts and very marked in the other three districts, viz. Jaffna, Batticaloa and Amparai. "The reasons for these wide differences in the rates of female participation in education have to be sought in the social and cultural traditions of the people inhabiting these districts. For example, the rate of participation in secondary education of Tamil and Muslim girls in the Northern and Eastern Provinces was lower than in other districts".^{19/}

^{18/} *Needs of Children & Adolescents: A Case Study of Sri Lanka*, Marga Research Studies No. 5. (Colombo, Marga Institute, 1975), p. 42.

^{19/} *Ibid.*, p. 44.

Table 160. Age-sex specific school participation rates by district, Sri Lanka, 1971

District	5-9 years			10-14 years			15-19 years		
	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes
	Colombo	98.8	92.4	95.6	79.9	81.2	80.5	15.7	18.4	17.0
Kalutara	91.5	85.3	88.4	72.7	78.4	75.4	12.1	21.9	16.9
Kandy	85.3	79.0	82.2	60.7	59.7	60.2	14.1	13.5	13.8
Matale	80.3	74.0	77.1	66.0	67.6	66.8	15.4	15.2	15.3
Nuwara Eliya	89.0	75.3	82.2	64.3	55.9	60.2	14.1	13.6	13.8
Galle	95.1	86.5	90.9	83.2	81.1	82.1	17.4	21.5	19.5
Matara	99.3	83.6	91.6	77.6	86.7	82.0	15.0	23.1	19.2
Hambantota	86.5	78.2	82.5	61.1	77.4	68.8	13.1	17.3	15.2
Jaffna	93.8	86.9	90.3	87.4	83.2	85.3	21.7	14.4	18.1
Mannar	71.9	64.5	68.2	72.3	53.0	62.4	24.3	-	13.4
Vavuniya	83.9	75.9	79.8	64.1	63.0	63.5	8.1	10.7	9.3
Batticaloa	57.7	53.2	55.5	62.5	52.9	57.8	12.3	7.0	9.7
Amparai	73.8	64.8	69.4	68.5	51.8	60.2	13.8	10.5	12.2
Trincomalee	67.8	60.9	64.4	67.5	61.5	64.5	10.3	11.8	11.0
Kurunegala	88.3	82.2	85.3	62.5	71.0	66.6	18.1	22.8	20.4
Puttalam	86.7	83.8	85.3	69.1	64.0	66.6	20.7	20.1	20.4
Anuradhapura	75.3	65.4	70.3	69.2	77.0	72.9	12.0	14.9	13.4
Polonnaruwa	75.9	70.5	73.2	62.3	74.6	68.1	12.7	12.0	12.3
Badulla	87.7	76.7	82.2	63.0	57.4	60.2	14.6	13.0	13.8
Monaragala	65.6	57.1	61.3	47.3	50.8	48.8	11.9	9.4	10.7
Ratnapura	88.0	76.3	82.1	60.0	66.7	63.3	11.0	16.4	13.6
Kegalla	92.3	86.1	89.3	73.0	81.1	77.0	15.0	23.6	19.3
Sri Lanka	88.4	80.5	84.5	70.5	72.0	71.2	15.2	17.4	16.3

Source: *Needs of Children & Adolescents: A Case Study of Sri Lanka*, Marga Research Studies No. 5 (Colombo, Marga Institute, 1975), chap. II, tables VII and VIII.

Table 161. Schools per 1,000 school-age population by administrative district, Sri Lanka, 1971

District	Estimated population 5-19 years	Number of junior schools (Vidyayas)	Junior schools per 1,000 population 5-19 years	Rank	Number of senior a/ schools	Senior schools per 1,000 population 5-19 years	Rank	Area in sq mi (approx.)
Colombo	882,400	778	0.88	20	314	0.35	8	792
Kalutara	238,700	362	1.51	16	83	0.34	9	620
Kandy	440,700	485	1.10	18	141	0.31	12	913
Matale	123,800	203	1.63	14	34	0.27	18	770
Nuwara Eliya	167,000	191	1.14	17	56	0.34	9	474
Galle	251,300	407	1.62	15	120	0.47	2	646
Matara	327,700	584	1.78	11	97	0.29	14	1,483
Hambantota	243,300	464	1.90	8	97	0.39	6	965
Jaffna	29,400	88	2.99	2	15	0.51	1	958
Mannar	35,100	164	4.67	1	15	0.42	4	1,432
Vavuniya	98,800	203	2.05	5	28	0.28	15	951
Batticaloa	97,900	202	2.06	4	28	0.28	15	1,152
Amparai	73,200	128	1.74	12	21	0.28	15	1,011
Trincomalee	510,100	1,007	1.97	7	159	0.31	12	2,992
Kurunegala	144,000	419	2.91	3	61	0.42	4	2,752
Puttalam	58,100	117	2.01	6	20	0.34	9	1,314
Anuradhapura	241,200	230	0.95	19	48	0.20	19	1,088
Polonnaruwa	72,600	134	1.84	10	34	0.46	3	2,754
Badulla	241,000	118	1.74	12	77	0.32	11	1,251
Monaragala	247,000	464	1.88	9	95	0.38	7	642
Ratnapura								
Kegalla								

Source: Needs of Children & Adolescents: A Case Study of Sri Lanka, chap. II, table II.

Note: a/ Senior schools refer to Maha Vidyayas and Madhya Maha Vidyayas

The provision of schooling facilities and the manner in which the school system works to produce the district disparities in the participation rates of what may be called the "compulsory school-going age" is summarized in table 161.

"The mix of junior and senior schools and their different shares in the system provide us with a general indicator in regard to the structure of education in each district and the balance between the different levels of primary, secondary and pre-university education. On this criterion the major urban centres, Colombo, Kalutara, Kandy, Galle, Nuwara-Eliya, Jaffna, Kegalle, which are commonly regarded as enjoying superior educational facilities rank in the first half of the list. Anuradhapura, Puttalam, Vavuniya, Mannar, Batticaloa, Amparai, Kurunegala are in the bottom half. Vavuniya, it will be seen, ranks high when the availability of both junior schools as well as senior schools are measured in terms of the population of school-going age. The low ratio of senior to junior schools is primarily due to the fact that the number of junior schools is larger than average. Vavuniya, however, may illustrate another problem. In a district where the population is thinly distributed or where the human settlements are scattered, the number of schools could be an important factor. In Vavuniya it is possible that while educational facilities at the junior level are within easy reach, access to educational opportunities at the higher levels are much more difficult. Another district where the criteria used here do not seem to be significantly related to the availability of educational facilities is the Badulla District. Here the estate sector distorts the picture as the schooling facilities in this sector have been excluded in calculating the distribution and relative shares of the two categories of schools. If these are included, the position would be considerably altered. The Polonnaruwa District is somewhat exceptional; although predominantly rural it has a relatively well balanced structure of educational facilities in which the proportion of senior schools approximates to that of districts which are educationally better served.

It is, however, necessary to exercise extreme caution when deriving causal relationships between availability of services and level of participation. The criteria that have

been used here cannot by themselves throw much light on the factors which have contributed to better rates of participation in the upper segment of the education system. The expansion of senior school facilities could be as much a cause as an effect of such participation. It could both be a response to the demand for higher education in these districts as well as the stimulus for the increase in demand. For the causative factors one would have to reach further and examine the socio-economic conditions, the patterns of income distribution and social stratification which influence both the capacity and motivation for participation in the educational system" ^{20/}

In the matter of accessibility of the primary school to the child, there are perhaps only a few countries in the ESCAP region that come close to Sri Lanka. There are about 8,500 schools located within the 25,000 square mile area of the country and even for the child in the remotest village there is a school within a mile and a half of his home. In spite of the very widespread network of schools penetrating into the deepest interior of the country, a sizeable proportion of the eligible population do not attend school. According to the estimates prepared by the Committee on Non-School-Going Children,^{21/} nearly 32 per cent of the children aged 5 to 13 years were not attending school in 1958. This proportion, however, dropped to 20.7 per cent in 1968. According to the 1971 school census, the total number of children aged 5 to 14 years attending school was 2,580,502 while the total population in this group according to the population census was 3,280,007. Thus nearly 21 per cent of the children aged 5 to 14 were not at school in 1971. An idea of the proportion never entering school could be obtained by comparing the number entering grade I in a particular year with the estimated population aged 5+ years in the same year.^{22/} In 1971, there were 332,792 children aged 5+ years and the total that entered the school system at grade I in 1971 was only 280,000. Thus, the percentage that had never entered school was as high as 15.9 per cent.

According to the Committee on Non-School-Going

^{20/} *Ibid.*, pp. 26-27.

^{21/} *Report of the Committee on Non-School-Going Population*, Sessional Paper III of 1960 (Colombo, Government Publications Bureau, March 1960).

^{22/} As noted earlier, children entering grade I consist not only of 5 years old. However, if the age composition of the children entering school at grade I remains steady from year to year, then this comparison would be valid.

Table 162. Growth in university enrolments by sex, Sri Lanka, 1942-1972

Year	Male	Female	Total	Percent female
1942	813	91	904	10.1
1945	932	133	1,065	12.5
1946	1,124	178	1,302	13.7
1947	1,312	242	1,554	15.6
1948	1,335	277	1,612	17.2
1949	1,489	325	1,814	17.9
1950	1,655	381	2,036	18.7
1951	1,761	449	2,210	20.3
1952	1,752	480	2,232	21.5
1953	1,784	608	2,392	25.4
1954	1,814	620	2,434	25.5
1955	1,781	650	2,431	26.7
1956	1,872	662	2,534	26.1
1957	1,990	728	2,718	26.8
1958	2,118	832	2,950	28.2
1959	2,231	946	3,177	29.8
1960	3,587	1,136	4,723	24.1
1961	4,325	1,547	5,872	26.3
1962	4,541	1,729	6,270	27.6
1963	5,519	1,973	7,492	26.3
1965	9,788	4,579	14,367	31.9
1967	9,093	5,329	14,422	37.0
1968	9,143	6,600	15,743	41.9
1969	6,718	5,406	12,124	44.6
1970	7,621	5,026	12,647	39.7
1971	6,582	5,145	11,727	43.9
1972	6,907	5,143	12,050	42.7

Population, poverty appears to be the most important contributory factor for non-attendance. "It is well known that attendance in recent months has increased since the introduction of the mid-day meal. If poverty means only hunger, why has the increase not been as well marked as it should have been. Surely a fair meal a day should have been a sufficient attraction for those who live below subsistence level. The question had been put to a large number of parents by our enumerators and their replies have almost invariably been the same. How could they send their children to school in the rags they wear and expect them to sit with those who are comparatively better off? We are informed that some have never known a change of clothes for years on end. We are therefore convinced that it is not indifference on the part of most parents that their children do not attend school. Despite poverty so abject as would smother every decent human emotion, they are yet not entirely devoid of some vague notions of self-respect. They would not wish their children to be the subject of scornful comment of other children or of teachers. A good number of parents have expressly admitted that this was the real cause of their inability to send their children to school. The reticence of many others can be interpreted in

similar terms".^{23/}

2. Third level enrolments

Programmes of education at the third level are organized in the University of Sri Lanka which today consists of six campuses at Colombo, Kelaniya (Vidyalankara), Gangodavila (Vidyodya), Katubedda, Peradeniya and Jaffna.^{24/} Admissions to the university are based on the performance of students at the GCE 'AL' Examination^{25/} which is conducted annually by the Commissioner of Examinations. Every student should have completed at least 12 years of general education before sitting for this examination. The growth in university enrolments from 1942 to 1972 is indicated in table 162.

^{23/} Report of the Committee on Non-School-Going Population, *op.cit.*, p. 9.

^{24/} In 1971, the four independent universities (University of Ceylon, Colombo, University of Ceylon, Peradeniya, Vidyodya University and Vidyalankara University) and the Ceylon College of Technology were integrated to form one university, and in 1974 another campus was opened in Jaffna.

^{25/} This examination is now designated the National Certificate of Higher Education.

It will be noticed that there was a steady growth in university enrolments until 1959, when enrolments increased on the average by about 134 *per annum*. Between 1959 and 1960, university enrolments increased sharply by 1,546, and between 1960 and 1964 the increase averaged 1,317 *per annum*. This was because in 1959 two old *pirivenas*, seats of Buddhist learning, were raised to university status thus increasing substantially the number of places at the university level. A further very sharp increase is noticeable between 1964 and 1965 when enrolments increased by 4,378 due to deliberate policy of the government to increase university admissions during this period. Since 1968 university enrolments have shown a general tendency to decline.

An important feature of the university enrolments is the increasing trend in female enrolments. The percentage increase in university enrolments by sex during the three decades is as follows:

Period	Male	Female	Total
1942-1950	103.6	318.6	125.2
1950-1960	116.7	198.2	132.0
1960-1970	112.5	342.4	167.8

It will be seen that throughout the period the percentage increase in female enrolments has been higher than that of males. As a result, the proportion of female enrolments in total university enrolments increased steadily from 10.4 per cent in 1942 to 42.1 per cent in 1972, a more than four-fold increase in this proportion during a period of 30 years.

An analysis of university admissions in 1967 indicated that females constituted 47 per cent of the total admissions, 52 per cent of admissions to the Faculties of Humanities and Social Studies, 45 per cent of the admissions to the Faculty of Law and 43 per cent of the admissions to the Faculty of Medicine and Dentistry.^{26/} "Among the developed countries in 1965-66, only Finland had a higher proportion — 49 per cent of enrolments. The corresponding percentage in Sweden was 37, in the UK 25, in Canada 33 and in Japan 34. It is probably unequalled in any developing country". It has been further observed; "The consequences of this spread of education among women are somewhat difficult to foresee... such high rates of participation by women in higher education are generally a part of the *milieu* of urbanized and industrial societies. One cannot, with

^{26/} G. Uswatte-Aratchi, "University admissions in Ceylon: their economic and social background and employment expectations", *Modern Asian Studies*, vol. 8, No. 3, 1974.

any degree of confidence, extrapolate the experience of these societies into those which are mostly agricultural and rural. Perhaps this contains an area for useful and fruitful research".^{27/}

Another noteworthy trend in regard to university enrolments has been the changes that have characterized the proportions enrolled in the various courses of studies. It is clear from table 163 that while between 1945 and 1959, enrolments in science-based courses (science, medicine, engineering, agriculture and veterinary science) formed more than 50 per cent of the total, the situation has changed after 1959. Since that year, a majority of the students came to be enrolled in the arts and humanities courses, nearly 63 per cent of all university students being enrolled in these courses in 1961. This proportion increased to 74.5 per cent in 1967 but declined to 57.6 per cent in 1970.

The increase in the proportion of enrolments in arts and humanities since 1959 has largely been due to the creation towards the end of 1959 of two new universities (Vidyodya and Vidyalankara) which made provision for teaching only the arts and humanities courses. Further, as noted earlier, there was an expansion in enrolments at the secondary level during the 1950s but in the absence of adequate facilities for the teaching of science at this level, large number of students completed their secondary education only in arts subjects. With the expansion of facilities since early 1960s for teaching science subjects at the secondary level and with increasing places for science courses being provided at the universities, there was a decline in the proportion of those enrolled for arts and humanities between 1967 and 1970.

3. International comparison

The number of students enrolled in the first, second and third levels of education as a proportion of the population aged 5-24 years in some countries of the ESCAP region is shown in table 164. It will be observed that compared with a large number of countries in the ESCAP region, Sri Lanka has a very well developed education system. A very high proportion of children attend school and it is only at the pre-university and university levels that enrolments are low. If third level enrolments are excluded, the enrolment ratios compare favourably with countries like Republic of Korea, Philippines and Singapore which in recent years have recorded substantial increases in enrolments.

^{27/} G. Uswatte-Aratchi, *ibid.*, p. 294-192.

Table 163. Percentage distribution of university enrolments by courses of study, 1945-1970

Courses of study	Proportions enrolled in the year						
	1945	1950	1955	1959	1961	1967	1970
Arts and Humanities ^{a/}	35.2	40.7	41.7	44.0	62.5	74.5	57.6
Science	26.2	9.3	16.4	16.8	17.1 ^{b/}	7.7	24.8
Medicine ^{c/}	38.6	37.7	35.5	30.2	17.2	11.8	11.5
Agriculture ^{d/}	-	2.4	1.6	1.1	-	1.4	1.7
Engineering	-	9.9	4.8	7.9	3.3	4.6	4.4
All courses	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Sources: Government of Ceylon, *Statistical Abstract of Ceylon, 1949, 1953, 1960 and 1970-1971* (Colombo, Department of Census and Statistics).

Notes: a/ Arts and Humanities include those courses designated as Arts, Oriental Studies, Law, Buddhism, Philosophy and Languages.

b/ Includes enrolments in Agriculture and Veterinary Science.

c/ Includes Dentistry.

d/ Includes Veterinary Science.

Table 164. Enrolment ratios for all levels of education in selected countries of the ESCAP region, 1950-1972

Country	Enrolment ratios (all levels) ^{a/}			
	1950	1960	1968	1972
Afghanistan	1.9	3.2	7.8	9.7
Burma	5.4	19.1	31.7	33.2 ^{b/}
India	15.1	24.7	32.8	34.6 ^{b/}
Indonesia	15.9	22.3	25.8	28.0 ^{c/}
Iran	10.9	18.4	31.5	34.9 ^{d/}
Japan	54.1	59.4	56.5	58.1
Khmer Republic ^{e/}	10.3	25.1	37.0	-
Laos ^{f/}	-	-	17.2	19.6
Malaysia (peninsular)	26.8	41.3	44.8	44.7 ^{d/}
Mongolia	-	27.8	-	40.6 ^{b/}
Nepal	-	4.4	11.7	10.4 ^{c/}
Philippines	-	40.6	52.7	52.1 ^{c/}
Republic of Korea	34.6	43.5	51.3	53.7
Singapore	31.2	51.2	59.1	52.2 ^{g/}
Sri Lanka	41.6	51.6	46.5	47.8 ^{b/}
Thailand	-	36.7	36.8	39.8
Republic of Viet-Nam ^{h/}	8.1	27.4	39.0	55.4

Source: UNESCO, *Progress of Education in the Asian Region - Second Statistical Supplement* (Bangkok, 1975), table 27.

Notes: a/ Total enrolments at first, second and third level (as nationally defined) per 100 persons aged 5-24 years.

b/ Refers to the year 1969.

c/ Refers to the year 1970.

d/ Refers to the year 1971.

e/ Now Democratic Kampuchea.

f/ Now Lao People's Democratic Republic.

g/ Refers to the year 1973.

h/ Data obtained before the consolidation of Republic of Viet-Nam with Democratic Republic of Viet-Nam as "Socialist Republic of Viet Nam in 1975.

Table 165. Retention rates, Sri Lanka, 1952-1971

Level I

Grade	Progression rates of pupils enrolled in grade I in the year																			
	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971
IA	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
IB	72.9	72.8	74.5	74.7	74.9	75.9	76.4	75.4	74.3	76.1	90.8	88.3	86.2	113.4	100.0	100.0	100.0	100.0	100.0	100.0
II	68.5	66.3	69.1	71.6	74.0	69.4	69.7	69.1	69.1	74.8	88.2	73.8	66.9	86.9	76.6	83.6	88.1	77.1	83.6	96.1
III	61.1	59.6	64.5	66.1	68.4	63.6	64.5	64.3	65.7	70.5	73.3	113.6	87.3	87.3	69.0	72.1	69.6	73.9	81.4	85.7
IV	52.4	53.0	57.7	59.5	60.8	57.3	58.0	58.0	59.5	60.7	64.3	89.9	77.3	77.3	70.1	71.2	71.6	68.7	72.6	76.4
V	44.9	46.0	51.2	52.3	54.2	50.8	50.8	52.7	51.8	52.9	52.9	74.6	79.9	79.9	69.2	62.0	65.8	60.3	64.4	62.6
VI	39.0	41.3	45.8	47.4	48.4	44.3	45.0	44.8	45.3	45.2	46.8	61.1	67.4	67.4	51.3	57.5	56.4	50.0	50.9	
VII	33.9	35.1	39.7	40.9	40.5	38.3	39.0	38.7	37.5	40.9	41.2	45.7	52.5	53.5	47.1	45.9	48.2	41.6		
VIII	30.5	32.0	36.1	34.3	38.9	35.6	35.2	33.0	33.8	36.6	36.0	44.9	50.5	50.5	46.8	38.8	40.6			

Level II

Grade	Progression rates of pupils enrolled in grade VIII in the year																			
	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971
VIII	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
IX	79.1	80.2	81.2	86.8	95.3	95.9	99.1	98.2	92.8	91.4	85.4	100.8	87.8	85.0	80.9	92.2	86.5	84.2	92.0	92.9
X	98.9	107.0	99.7	130.6	154.0	160.7	157.9	164.1	146.9	132.5	153.7	150.5	135.6	133.9	130.1	129.3	125.0	126.3	154.4	70.1
XI	9.3	9.1	5.8	11.6	15.1	14.2	17.2	24.6	22.0	20.8	16.8	17.2	16.9	15.9	15.2	15.0	15.6	14.8	12.6	16.9
XII	5.4	5.2	5.4	9.0	11.1	13.4	16.7	15.5	23.4	24.2	20.7	19.6	17.7	16.8	16.2	17.7	20.1	20.7	24.3	20.8

Source: W.D. Fernando, *Quantitative Development of First and Second Level General Education in Ceylon 1970-1980* (Colombo, Ministry of Education, April 1970); Government of Sri Lanka, *Schools Census for Years 1970-1975* (Colombo, Ministry of Education.)

Note: "A decision was taken in 1965 to reduce the period of primary education (i.e., grades I-V) from 6 to 5 years. What actually happened was that in 1966, a part of the enrolments in grade IA in 1965 had got into grade IB (i.e. the newly established grade I class), while the balance got into grade II. In a like manner, the pupils of grade IB in 1965 had got into both grades II and III in 1966. This was due to the fact that the directive referred to above had been interpreted and implemented in different ways by the heads of schools" ... (W.D. Fernando). In this context the retention rate was calculated by considering the grade I class in 1966 (i) as grade IB for those in the class of 1965; and (ii) as the base class for the calculation for 1966.

D. RETENTION AND REPETITION RATES

1. Retention rates

The movement of the students enrolled in grade I through to grade XII can be studied with the help of retention rates, that is, the number in successive grades as related to the number when they first entered the school system. Retention rates of the cohorts enrolled in grade I during the period 1952-1971 as they progress through the education system are shown in table 165. It will be noticed that these rates are given separately for grades IA to VIII and grades IX to XII, the latter being based on the enrolments in grade VIII and being expressed as a percentage of those enrolments.^{28/}

It will be seen that the retention rates have been progressively diminishing from grades IA to VIII during the period 1952 to 1970.^{29/} Although the participation rate has been relatively high by average Asian standards, out of 100 pupils enrolled in grade I, an average of about 52 per cent reached grade V and about 35 per cent reached grade VIII. In other words, nearly two-thirds of the children joining school in grade I dropped out before reaching grade VIII. Considering that there is no examination barrier, this rate of dropouts must be regarded as high.

The rate of dropouts between grades IA and IB is particularly high; it was around 29 per cent in 1952 and came down to about 9 in 1962 but increased again to about 14 in 1964. It will also be noted that the proportion dropping out of the school system before reaching grade II is also very high. "One of the more disturbing features of the dropout pattern is the high percentage difference between the number in Grade 1 and the number proceeding to Grade 2. While this is partly explained by the fact that there has been an inordinately high level of repetition in Grade 1 (27.5%) it still does not account for the fact that the percentage difference has persisted during the examined period. The data available for 1971 and 1974 indicates that this difference has been reduced considerably. Nevertheless, the evidence seems to point to the fact that a proportion which is not negligible leaves the system with barely one year's education."^{30/}

^{28/} The characteristics of student movement from grade IX to XII are different from those in grades I to VIII and hence it is desirable to treat these two categories separately.

^{29/} Those enrolled in grade I in 1962 will reach grade VIII in 1970.

^{30/} *Needs of Children & Adolescents: A Case Study of Sri Lanka, op.cit.*, p. 45.

A comparison of the retention rates over the period under review clearly shows a lack of definite trend. The retention rate in grade VIII varied between 30.5 and 38.9. The yearly fluctuations for this and other grades do not show any pattern and this means that the school-going habit has not been firmly established even by 1970.

As regards the senior secondary level, the retention rate between grades VIII and IX was fairly high and on the whole satisfactory. But the fluctuations were somewhat pronounced, the rates gradually improving from 79.1 in 1952 to 98.2 in 1959, thereafter falling to 85.4 in 1962 and then reaching 100.8 in 1963 and falling again to 87.9 in 1964. The high retention rates for grade X are due to the presence of a substantial number of repeaters, the repetition rate for this grade in 1973 being 39 per cent. As noted earlier, grade X is a public examination grade at which pupils sit the General Certificate of Education, Ordinary Level (GCE'OL') examination as it was then called. The repetition rates at this level are high because most pupils take a second year in this grade to improve their examination performance.

The progression through the school system of pupils enrolled in grade IA in the years 1958 to 1962 is shown in table 166. It will be noted that of 100 pupils enrolled in grade I in 1962, only 33.4 per cent reached grade X in 1972, that is about 67 per cent had failed to reach grade X. "The pattern of education, however, and the curricula and structure of knowledge were designed to prepare students for academic tests at the terminal points of the system that is at Grade 10 and above. In such a scheme, those who left in the earlier stages were 'dropouts' and had failed to qualify in terms of the demands set up by the system. The system, structured as it was, could at best provide these drop-outs with an incomplete body of skills and knowledge which were merely preparatory steps in the academic ladder. In the prevailing situation, nearly two-thirds of the school-going population fell into this category. A school system which neglected to provide a 'terminal education' to the majority of school-leavers was obviously wasteful and ill adapted to its socio-economic environment".^{31/}

2. Repetition rates

Movement of students from one grade to another is affected by two factors: (a) those who leave the school, and (b) those who are promoted.

^{31/} *Ibid.*, p. 22.

Table 166. Retention rates of cohorts enrolled in grade I in the years 1958-1962

	Class of 1958			Class of 1959			Class of 1960			Class of 1961			Class of 1962		
IA	399.8	100.0		413.0	100.0		414.8	100.0		397.8	100.0		364.0	100.0	
IB	305.7	76.46		311.5	75.42		303.0	74.25		302.6	76.07		330.6	90.82	
II	278.5	69.66		285.5	69.13		286.5	69.07		297.6	74.84		320.9	88.16	
III	257.7	64.46		265.5	64.28		272.7	65.74		280.6	70.54		266.7	73.27	
IV	232.0	58.03		239.6	58.01		246.6	59.45		241.6	60.73		233.9	64.26	
V	203.4	50.88		217.8	52.74		214.8	51.78		210.6	52.94		192.5	52.88	
VI	179.8	44.97		185.1	44.82		188.0	45.32		179.8	45.20		170.5	46.84	
VII	156.0	39.02		159.8	38.69		155.7	37.54		162.5	40.85		150.1	41.24	
VIII	140.8	35.22		136.4	33.03		140.1	33.77		146.2	36.57				
IX	113.9	28.49		125.8	30.46		121.2	29.22							
X	183.2	45.82		X	176.4	42.71	X			X	184.6	46.40	X	211.7	33.4
XI	21.4	5.35		XI			XI	21.9	5.29	XI	19.1	4.81	XI	17.9	1.98
XII				XII	24.2	5.85	XII	26.2	6.32	XII	30.2	7.56	XII		

Source: Needs of Children & Adolescents: A Case Study of Sri Lanka, chap. II, table XI.

Consequently, the enrolments in grades subsequent to grade IA consist of those promoted from the lower grade and those who are detained. Hence in order to analyse the retention rates and to draw conclusions from them it is necessary to have data regarding the number of repeaters in each grade. Unfortunately, such data are not available for earlier years and hence conclusions regarding retention rates for this period have only limited validity.

Table 167. Repetition rates in grades I to X, Sri Lanka, 1971-1973

Grade	Repetition rates (percentage)		
	1971	1972	1973
I	27.5	29.4	18.5
II	20.4	22.1	20.9
III	18.2	20.6	18.1
IV	16.3	18.0	15.7
V	13.9	15.3	13.2
VI	11.2	11.6	8.5
VII	7.8	10.0	6.7
VIII	2.9	2.9	0.5
IX	4.2	3.0	2.2
X	42.1	36.6	39.0

Source: Statistics Division, Ministry of Education.

The data of the school censuses of 1971, 1972 and 1973 have provided the basis for the calculation of repetition rates for those years. It will be seen from table 167 that the repetition rates particularly in the lower grades were unduly high. As noted earlier, repetition at grade X, which is the first public examination grade, was very high.

The repetition rates at the primary and secondary levels from grades I to X for all districts are shown in table 168. It will be observed that the repetition rates in the primary grades were high for all the districts. The repetition rates in grade I were over 40 per cent in three districts, viz., Anuradhapura, Batticaloa and Trincomalee, while in another eight districts these rates ranged from 30 to 40 per cent. It was only in Colombo District that the repetition rate in grade I was below 20 per cent, while the remaining districts had rates between 20 and 30 per cent. In grade V, the repetition rates ranged from about 10 per cent in Colombo to 24.5 per cent in Mannar. At grade X, the other end of the education stream, the repetition rates varied from a low of 32 per cent in Batticaloa to a high of 54 per cent in Monaragala District.

In regard to the reasons for the high rates of repetition, it has been observed: "From the data re-

Table 168. Repetition rates, grades I to X, by district, Sri Lanka, 1971

District	Grade I	Grade II	Grade III	Grade IV	Grade V	Grade VI	Grade VII	Grade VIII	Grade IX	Grade X
Colombo	19.92	16.08	16.06	13.54	10.22	9.87	8.70	2.43	3.59	38.48
Kalutara	22.50	18.89	17.35	14.89	14.19	10.84	7.26	2.07	2.46	47.92
Kandy	27.48	20.77	19.79	16.73	16.08	13.97	7.69	3.04	5.99	41.01
Matale	34.23	24.74	21.33	19.33	17.23	15.68	8.24	4.40	4.06	48.20
Nuwara Eliya	30.39	21.75	20.84	18.99	15.42	14.13	8.71	3.02	5.48	49.40
Galle	22.89	18.64	16.84	14.11	14.55	10.11	7.15	3.89	4.78	36.45
Matara	26.87	20.66	20.60	17.99	14.61	12.19	6.30	2.54	1.31	44.35
Hambantota	29.35	22.56	22.65	20.17	16.00	13.00	9.33	2.80	2.41	42.42
Jaffna	29.61	18.60	14.61	13.85	12.99	3.41	6.14	5.97	3.02	39.83
Mannar	37.35	29.23	25.88	22.77	24.51	21.23	13.29	5.01	10.22	46.67
Vavuniya	36.47	23.32	19.16	16.86	17.58	12.96	7.46	3.14	7.34	32.94
Batticaloa	41.41	32.63	28.46	23.83	22.80	10.25	7.81	5.31	2.92	31.55
Amparai	35.79	28.15	22.83	20.33	16.05	15.16	6.42	1.81	13.25	37.42
Trincomalee	43.67	28.94	26.80	19.46	18.22	12.77	10.54	5.77	3.46	43.98
Kurunegala	23.87	18.77	17.64	16.86	14.37	11.73	7.84	3.35	3.98	42.40
Puttalam	30.11	21.08	18.35	16.17	13.79	11.55	8.05	3.39	7.37	49.62
Anuradhapura	49.63	22.26	22.67	21.01	16.93	11.34	7.52	1.99	7.86	42.12
Polonnaruwa	28.80	23.01	19.26	17.83	15.00	7.90	7.26	0.89	8.54	39.13
Badulla	35.30	24.72	22.87	19.13	14.71	11.03	7.42	1.45	2.05	43.10
Monaragala	32.07	22.98	21.11	20.00	15.11	11.82	9.46	2.72	1.16	53.90
Ratnapura	27.60	19.98	17.57	15.78	13.47	12.94	6.74	2.05	2.61	46.81
Kegalla	24.82	17.79	18.58	15.52	13.29	11.43	7.93	1.70	4.46	46.68
Sri Lanka	27.54	20.35	18.19	16.32	13.88	11.21	7.79	2.90	4.19	42.10

Source: *Needs of Children & Adolescents: A Case Study of Sri Lanka*, chap. II, table XXI.

lating to schooling facilities such as class room accommodation, pupil-teacher ratios, it is difficult to attribute the high rate of repetition primarily to inadequacies of staff or lack of similar educational facilities. No reliable inferences can be drawn, as the causes for the high repetition do not appear to have been adequately investigated. It is likely that high repetition is associated on the one hand with factors such as the irregularity of attendance and a home environment unfavourable to education and on the other to the inferior quality of instruction and the inefficiency of the school system itself. The causes would have to be investigated both from the delivery end of these services as well as the participating end. ^{32/}

E. LITERACY AND EDUCATIONAL ATTAINMENTS

In Sri Lanka, data on literacy were obtained for the first time in the 1881 census and were collected in all subsequent censuses. For census purposes, a literate person is one who can both read and write any language. Until 1963, particulars regarding literacy were collected in respect of all persons aged 5 years and over; in the 1971 census, however, these particulars were collected in regard to all persons 10 years and over. The percentage of literacy by sex at the various censuses is shown in table 169.

It will be observed that there has been a continuous increase in literacy since 1881, the literacy rates for the total population aged 10 years and over

Table 169. Percentage of literate persons aged 10 years and over, Sri Lanka, 1881-1971

Census year	Percentage of literates		
	Both sexes	Male	Female
1881	17.4	29.8	3.1
1891	21.7	36.1	5.3
1901	26.4	42.0	8.5
1911	31.0	47.2	12.5
1921	39.9	56.4	21.2
1946	57.8	70.1	43.8
1953	65.4	75.9	53.6
1963	71.6	79.3	63.2
1971 ^{a/}	78.5	85.6	70.9

Source: CICRED, *The Population of Sri Lanka* (Colombo, Department of Census and Statistics, 1974), table 3.19.

Note: a/ Computed from *Census of Population 1971, vol. II: All Island Tables, part I: General Characteristics of the Population* (Colombo, Department of Census and Statistics, 1975).

^{32/} *Ibid.*, pp. 47-48.

increasing from 17.4 in 1881 to 78.5 in 1971. The 1971 literacy rates for males, 85.6 per cent, is higher than that of females, 70.9 per cent, but the progress made in female literacy has been very remarkable, the percentage of female literates increasing from 3 per cent in 1881 to 71 per cent in 1971.

The high literacy rates which Sri Lanka has now achieved have been due to three important factors. First, as noted earlier, the introduction of free education in the second half of the 1940s and the subsequent expansion of educational facilities throughout the island has made it possible for an increasing proportion of the eligible population to have access to education.^{33/} Secondly, the establishment of government schools which were co-educational in character, the emergence of women from the seclusion of their home and the opening of more avenues of employment to educated women helped to increase the level of female literacy. Thirdly, there has over the years been an increasing popular demand for education. As noted by the 1911 census superintendent:

“The improved standard of comfort throughout the country, the growth of wealth, accompanied by considerable changes in manners and customs, have all produced an enormous demand — which may almost be described as a passion — for education. The older generation regard education as an investment for their children which will enable them to take up positions to which their newly-acquired wealth entitles them. The small landowner and cultivator who has prospered believes that education will make a clerk of his son or fit him for a learned profession, that the latter will then hold a better position in the world than his father, and that consequently the fortunes and, what appeals to him equally strongly, the status of the family will be assured. The younger generation seek escape from rural life, from manual toil, from work which they begin to regard as degrading, in an education which will enable them to pass examinations, which will lead to posts in offices in the towns, and so to appointments which entitle the holders to the respect of

^{33/} The 1946 census superintendent lamented: “The fact, however, must be faced that, in a country enjoying autonomy on universal suffrage, about a third of its male population and more than half of its female population still remains illiterate”. See A.G. Ranasinha, *Census of Ceylon 1946, vol. I, part I, General Report* (Colombo, Department of Census and Statistics, 1950), p. 186.

Table 170. Literacy rates by age and sex in Sri Lanka, urban and rural sectors, 1971

Age group	Both sectors			Urban sector			Rural sector		
	Both Sexes	Male	Female	Both Sexes	Male	Female	Both Sexes	Male	Female
10-14	83.0	83.7	82.3	88.0	88.4	87.6	81.7	82.4	80.9
15-19	86.7	88.3	85.1	91.7	92.4	91.0	85.2	87.0	83.4
20-24	87.1	91.0	83.1	92.8	94.6	90.5	85.3	89.7	81.0
25-29	84.7	91.0	78.3	91.6	94.3	88.2	82.4	89.7	75.4
30-34	82.4	90.4	73.8	89.8	93.5	85.3	79.9	89.3	70.4
35-39	74.5	86.3	62.5	84.8	90.5	78.1	71.4	84.9	58.2
40-44	74.9	86.7	61.3	84.3	90.4	76.6	71.9	85.4	56.7
45-49	70.1	84.0	54.4	81.2	88.6	72.1	66.8	82.5	49.4
50-54	68.7	83.3	51.3	79.2	87.8	68.6	65.4	81.9	46.0
55-59	63.9	79.1	45.3	75.2	84.7	63.7	60.6	77.5	39.9
60-64	60.5	75.6	41.0	71.6	82.5	58.8	57.2	73.8	35.5
65-69	57.3	73.5	37.5	67.9	79.3	55.6	54.4	72.0	32.0
70-74	53.2	69.9	31.8	63.4	75.6	50.0	50.4	68.5	26.3
75 and over	42.9	60.8	23.8	54.2	68.2	41.2	39.9	59.0	19.0
All ages	78.5	85.6	70.9	86.2	90.3	81.5	76.2	84.1	67.9

Source: Government of Sri Lanka, *Census of Population 1971, vol. II: All Island Tables, part I: General Characteristics of the Population* (Colombo, Department of Census and Statistics, 1975), table 12.

Table 171. Percentage distribution of the population aged 15 years and over by level of education, age and sex, Sri Lanka, 1971

Educational attainment		15-	20-	25-	30-	35-	40-	45-	50-	55-	60-	65-	70-	75 and	Total
		19	24	29	34	39	44	49	54	59	64	69	74	over	
No schooling ^{a/}	T	13.9	15.0	18.0	20.3	28.1	27.6	32.3	34.6	39.6	42.9	45.3	50.7	60.3	25.9
	M	12.2	11.5	12.5	13.8	17.8	17.0	20.2	21.0	25.7	28.5	30.9	35.4	43.8	20.3
	F	15.6	18.3	23.4	27.1	38.6	39.6	47.0	50.2	56.0	61.1	62.8	70.3	77.6	31.8
Passed grades I, II, III, and IV	T	19.4	19.0	21.5	22.4	25.5	27.2	26.1	24.1	23.4	22.7	24.2	23.0	19.8	30.3
	M	20.0	19.0	21.2	22.8	27.4	30.2	30.1	28.4	28.2	28.0	30.1	30.5	23.3	32.2
	F	18.6	18.2	21.8	22.0	23.6	23.8	21.7	39.6	17.8	15.9	17.0	13.4	10.9	28.4
Passed grades V, VI, VII, VIII and IX	T	53.1	41.5	37.9	39.4	34.8	36.3	34.8	35.7	32.3	30.5	27.4	24.1	17.6	34.1
	M	55.3	45.4	42.7	44.3	41.4	42.1	41.9	43.5	40.2	38.3	34.9	31.1	24.5	37.5
	F	50.9	37.7	33.3	34.2	28.2	29.7	27.0	26.7	22.9	20.6	18.4	15.1	10.4	30.5
GCE 'OL' less than six subjects or equivalent	T	9.6	13.8	10.4	6.9	4.2	2.6	1.7	1.4	1.0	0.8	0.6	0.5	0.5	4.7
	M	8.7	13.3	10.8	7.2	4.7	3.2	2.2	1.7	1.3	1.1	0.8	0.6	0.7	4.6
	F	10.5	14.2	10.1	6.6	3.6	1.9	1.2	1.0	0.7	0.4	0.4	0.3	0.3	4.8
GCE 'OL' more than six subjects or equivalent	T	3.7	8.6	8.6	7.8	4.7	3.6	2.2	2.0	1.5	1.5	0.8	0.7	0.6	3.5
	M	3.4	8.5	8.7	8.0	5.6	4.4	2.8	2.7	2.0	1.6	1.2	0.9	1.0	3.6
	F	3.9	8.7	8.4	7.5	3.9	2.6	1.4	1.3	0.8	0.6	0.4	0.3	0.3	3.3
Higher qualifications	T	0.4	2.2	3.6	3.3	2.7	2.8	2.2	2.2	2.3	2.0	1.6	1.1	1.2	1.5
	M	0.4	2.3	4.1	3.9	3.2	3.1	2.9	2.8	2.7	2.5	2.1	1.5	1.7	1.8
	F	0.4	2.2	3.0	2.7	2.1	2.5	1.7	1.5	1.7	1.4	0.9	0.6	0.6	1.2

Source: CICRED, *The Population of Sri Lanka* (Colombo, Department of Census and Statistics, 1974), table 3.21.

Note: ^{a/} It has been assumed that a person for whom an educational attainment has not been reported would almost certainly be one who has had no schooling.

the class from which they believe they have emancipated themselves.”^{34/}

The literacy rates by age and sex for urban and rural areas are shown in table 170. It will be observed that literacy levels both among men and women of all ages are higher in the urban than in the rural areas. For the total population, the urban literacy rate was 10 percentage points higher than the corresponding rural rate. While in regard to males, the differences between urban and rural literacy rates was only about 6 percentage points, the difference for females was as high as 14 percentage points. “The higher literacy rate in the urban sector can be attributed to many factors such as the availability of more facilities for education and a greater awareness of the urban community of the need for education for purposes of employment.”^{35/}

In both the urban and rural sectors, the highest literacy rate for males is found in the 20-24 years age group while females aged 15-19 have the highest literacy rates in the two sectors. Generally, the literacy decreases with advancing age and this is to be expected as it is the younger generation that have benefitted most from the free education policy introduced in the 1940s.

Apart from improving the literacy level, the free education scheme has significantly helped to improve the educational attainment of the population. Table 171 shows the proportion of males and females aged 15 years and over who had attained specific educational levels in 1971. It will be observed from the table that the younger age groups have greater proportions in the higher educational levels. For example, a comparison of the 25-29 age group with the 45-49 age group shows that only 18 per cent of the former had no schooling compared with 32 per cent among the latter. Further while 12 per cent of those aged 25-29 years had qualified in the GCE'OL' Examination in more than six subjects or an equivalent or higher examination, the corresponding proportion among the 45-49 age group was only 4.4 per cent.

It will also be noted from table 171 that in regard to the attainment of a particular educational level in each age group the males had a higher

^{34/} E.B. Denham, *Ceylon at the Census of 1911 Being the Review of the Results of the Census of 1911* (Colombo, Government Record Office, 1912), p. 399.

^{35/} CICRED, *The Population of Sri Lanka* (Colombo, Department of Census and Statistics, 1974), p. 52.

proportion than females, but the differential declined with the level of education. Thus in the 20-24 age group, 18.3 per cent of females had no schooling compared with 11.5 per cent of males while 2.3 per cent of the males as against 2.2 per cent of females possessed GCE'AL' or higher qualifications. This trend is evident in all age groups but is more marked in the case of the younger groups. In other words, the equalization of the sexes in terms of educational attainment is more complete at the higher educational levels and younger ages than at the lower level and older ages.

F. FUTURE PROSPECTS

By and large, Sri Lanka has a well developed educational system with a large proportion of children attending school. However, as noted earlier, there are serious defects in the system which the Government has been attempting to remedy in recent years. The emphasis has been placed not so much on augmenting the enrolment levels which are comparatively very high,^{36/} but on consolidating the existing programmes and directing these programmes towards enhanced productivity of the general education system. For instance, the education programme drafted by the Planning Committee set up in 1965 concentrated on the development and re-organization of the secondary school system to give more emphasis to non-academic fields of study and to the establishment of a vocational-technical programme capable of meeting adequately the country's skilled manpower needs.^{37/} The Five-Year Plan published in 1971 also focussed attention on an integrated academic and vocational curriculum and the up-grading of schools throughout the country to remove the imbalance in the distribution of educational facilities.^{38/}

The implementation of the plans and proposals for the re-organization and development of the country's educational system will indeed be expensive. The current expenditure on education constitutes approximately 5 per cent of the gross national

^{36/} Yet to restrict enrolments would be foreign to the underlying philosophy of educational development in Sri Lanka which is that educational opportunity should be made as equal as possible.

^{37/} Government of Ceylon, *Report of the Planning Committee on Education, Health, Housing and Manpower* (Colombo, Ministry of Planning and Economic Affairs, 1967)

^{38/} Government of Ceylon, *The Five-Year Plan* (Colombo, Ministry of Planning and Employment, November 1971).

Table 172. Projected growth of total and school-age population, Sri Lanka, 1963-1998

Projection	1963	1968	1973	1978	1983	1988	1993	1998
Population (in thousands)								
Total population	10,695	12,093	13,452	14,658	15,885	17,065	18,377	19,731
Low projection	10,695	12,155	13,817	15,641	17,464	19,236	20,910	22,558
Medium projection	10,695	12,229	14,089	16,273	18,715	21,093	23,087	24,922
School-age population (6-19)	3,829	4,359	4,922	5,245	5,268	5,059	5,032	5,247
Low projection	3,829	4,359	4,983	5,605	6,186	6,569	6,766	6,782
Medium projection	3,829	4,359	5,021	5,828	6,811	7,775	8,395	8,334
Average annual rates of increase (in percentages)								
Total population								
Low projection	2.5	2.2	1.7	1.6	1.4	1.5	1.5	1.4
Medium projection	2.6	2.6	2.5	2.2	2.0	1.6	1.6	1.5
High projection	2.8	2.8	2.9	2.8	2.4	1.8	1.8	1.5
School-age population (6-19)								
Low projection	2.6	2.4	1.3	0.1	-0.8	-0.1	0.8	0.8
Medium projection	2.6	2.7	2.3	2.0	1.2	0.6	0.6	0.1
High projection	2.6	2.9	3.0	3.1	2.7	1.6	1.6	0.1

Source: Gavin W. Jones, "Chapter 7: Sri Lanka, The importance of the timing of fertility decline", *Population Growth and Educational Planning in Developing Nations* (New York, The Population Council, 1975).

Note: The population projections are based on the same assumption regarding future mortality trends but three different assumptions about trends in fertility. The most interesting aspect of the fertility projections is that gross reproduction rate reaches the same low level (1.2) after 35 years in all three projections, and the contrast is between different time paths in reaching this level. Hence it matters a great deal whether the decline in fertility comes earlier or later or whether it is sharper or less pronounced.

product (GNP), and this level is higher than those obtaining in most developing countries. It, however, remains to be seen whether this proportion can be increased further if educational plans require it. In the context of limited financial resources on the one hand, and the urgent need for qualitative improvement of the education system on the other, the strategies to be adopted and the targets to be achieved are some of the difficult issues that have to be faced by educational planners in the country.

Given the level of commitment of the Government toward various educational goals, progress can be significantly more rapid if there were to be substantial reductions in the current high fertility rates of the country. In other words, it will be possible to achieve more ambitious educational goals at lower cost if fertility were to decline rapidly than remain unchanged at high levels or decline very slowly, because there will be fewer children to be educated. A recent study by Gavin Jones has demonstrated the effects of alternative fertility trends on the costs of attaining various educational goals in Sri Lanka.^{39/} The results of this study are reported in the next few paragraphs.

Projections of the school-age population were obtained from a set of three projections of total population prepared by Lesthaeghe and Chi for the period 1963-1998. These projections employ the same assumption about mortality trends but three different assumptions about trends in fertility.^{40/} The results of these projections are summarized in table 172. It will be noted that "in all three projections, the school-age population grows more slowly than the total population, because it is affected by the decline in fertility earlier than most of the remaining population, but the differential in growth rates during the thirty-five year period as a whole is sharpest in the low projection, in which fertility declines early and steeply. Indeed, during the 1980s the school-age population in the low projection is actually decreasing at a time when the total population is continuing to increase by around 1.5 per cent per annum".^{41/}

The projection of enrolments was based on three alternative assumptions regarding trends in grade-to-grade progression rates. The first assumption

^{39/} Gavin W. Jones, "Chapter 7, Sri Lanka: The importance of the timing of fertility decline", *Population Growth and Educational Planning in Developing Nations* (New York, The Population Council, 1975).

^{40/} For details, see chapter XI.

^{41/} Gavin W. Jones *loc.cit.*, p. 129.

was that there will be no change at all in the base year progression rates during the period covered by the projections (Constant Progression Rate). In the second assumption, Improving of Progression Rate 1 (IPR-1), progression rates for grades II to IX were raised by 0.004 each year until the progression rate for grade II reached 0.93 and those for grades III to IX reached 0.95. The rate for grade X was lowered each year so as to reach 1.3 after 10 years, the rate for grade XI was raised by 0.008 to reach 0.2 by 1978 and the rate for grade XII was raised to reach 1.2 by 1978. After 1978, the rates for these three grades were held constant. According to third assumption, Improving Progression Rate 2 (IPR-2), progression rates for grades II to IX were raised by 0.008 each year until the progression rate reached 0.93 for grade II and 0.95 for grade III to IX. Assumption for grades X to XII were the same as for Improving Progression Rate 1.

The index of growth of primary and secondary school enrolments based on the three assumptions regarding progression rates is shown in table 173. It will be noted that "the total increase in pupil numbers over the thirty-year period is identical in both the improving progression rate projections, but this total increase is achieved along two different time-paths, the enrolments increase being slower in the first fifteen years in IPR-1 than in IPR-2. Differences in the rate and timing of the decline in fertility according to the three population projections are well reflected in the different years in which enrolments start to decline if enrolment rates are not raised. In the low projection, with its early and steep decline in fertility, the decline begins in 1976, but in the medium projection it is delayed until 1992 and in the high projection, until 1993".^{42/} It will also be observed that in terms of the assumptions made, secondary school enrolments will grow much faster than primary school enrolments. The particularly rapid increase during the 1968-1973 quinquennium was due to the distortion in the education pyramid as the double stream which reached grade IX in 1972 moved up through it. Even after that secondary enrolments will continue to increase faster than primary enrolments in respect of all three projections.

In projecting the costs of education it was rightly assumed that in Sri Lanka unit costs of education will continue to increase in the future. Since teacher salaries constituted about 88 per cent of the recurrent expenditure at the primary level and 77 per cent at the secondary level, it was assumed that

^{42/} Gavin W. Jones *loc.cit.*, pp. 136-137.

Table 173. Index of growth rates of school enrolments, Sri Lanka, 1968-1998

Projection <u>a/</u>	1968	1973	1978 <u>b/</u>	1983 <u>b/</u>	1988 <u>b/</u>	1993 <u>b/</u>	1998 <u>b/</u>
Primary school enrolments <u>c/</u>							
Constant progression rates							
Low projection	100	105	107	100	96	100	106
Medium projection	100	107	120	127	133	134	131
High projection	100	109	126	145	164	169	156
Improving progression rates 1							
Low projection	100	108	118	116	116	122	128
Medium projection	100	110	131	146	159	164	158
High projection	100	112	137	166	195	208	191
Improving progression rates 2							
Low projection	100	111	128	127	120	122	128
Medium projection	100	114	142	160	165	164	158
High projection	100	115	149	180	202	208	191
Secondary school enrolments <u>d/</u>							
Constant progression rates							
Low projection	100	144	128	137	128	121	124
Medium projection	100	144	130	148	158	166	169
High projection	100	144	131	154	175	202	215
Improving progression rates 1							
Low projection	100	146	148	185	199	208	221
Medium projection	100	146	150	200	246	285	302
High projection	100	146	151	208	273	348	385
Improving progression rates 2							
Low projection	100	150	170	236	236	219	221
Medium projection	100	150	172	254	292	301	302
High projection	100	150	173	264	323	366	386

Source: Same as table 172.

Notes: a/ The assumptions for each are as follows:

Constant progression rate. There will be no change at all in the base-year progression rates during the period.

Improving progression rate 1 (IPR-1). Progression rates for grades II to IX were raised by 0.004 each year until the progression rate for grade II reached 0.93 and those for grades III to IX reached 0.95. The rate for grade X was lowered each year so as to reach 1.3 after 10 years (by 1978), the rate for grade XI was raised by 0.008 to reach 0.2 by 1978, and the rate for grade XII was raised to reach 1.2 by 1978. After 1978, rates for these three grades were held constant.

Improving progression rate 2 (IPR-2). This projection is the most ambitious of the three. Progression rates for grades II to IX were raised by 0.008 each year until the progression rate reached 0.93 for grade II and 0.95 for grades III to IX. Assumptions for grades X to XII were the same as for improving progression rate 1.

b/ Estimated.

c/ 1968 = 100. 1968 enrolment base was 2,083,000.

d/ 1968 = 100. 1968 enrolment base was 321,000.

Table 174. Projected costs^{a/} of primary and secondary education, Sri Lanka, 1969-1998, alternative assumptions
(in million rupees)

Projection ^{b/}	1969-1978	1979-1988	1989-1998	1969-1998
Constant pupil/teacher ratios				
Constant progression rates				
Low projection	4,560	5,506	7,444	17,509
Medium projection	4,806	6,878	9,013	20,697
High projection	4,934	7,871	10,585	23,391
Saving, medium projection-low projection	246	1,372	1,569	3,188
Saving, high projection-low projection	374	2,365	3,141	5,882
Improving progression rates 1				
Low projection	4,879	6,972	10,217	22,068
Medium projection	5,143	8,638	12,500	26,283
High projection	5,279	9,815	14,739	29,832
Saving, medium projection-low projection	265	1,667	2,283	4,214
Saving, high projection-low projection	401	2,843	4,522	7,765
Improving progression rates 2				
Low projection	5,223	7,844	10,334	23,401
Medium projection	5,503	9,649	12,650	27,802
High projection	5,642	10,902	14,914	31,462
Saving, medium projection-low projection	280	1,805	2,316	4,400
Saving, high projection-low projection	419	3,058	4,580	8,061
Lowered pupil/teacher ratio at the secondary level				
Constant progression rates				
Low projection	4,643	5,896	8,144	18,682
Medium projection	4,889	7,314	9,905	22,108
High projection	5,018	8,330	11,631	24,979
Saving, medium projection-low projection	247	1,418	1,761	3,425
Saving, high projection-low projection	375	2,434	3,487	6,296
Improving progression rates 1				
Low projection	4,969	7,514	11,406	23,888
Medium projection	5,233	9,246	14,014	28,494
High projection	5,369	10,455	16,515	32,339
Saving, medium projection-low projection	265	1,732	2,608	4,606
Saving, high projection-low projection	401	2,941	5,109	8,451
Improving progression rates 2				
Low projection	5,321	8,523	11,582	25,427
Medium projection	5,601	10,400	14,239	30,240
High projection	5,745	11,692	16,775	34,212
Saving, medium projection-low projection	280	1,877	2,657	4,814
Saving, high projection-low projection	424	3,169	5,193	8,786

Source: Same as tables 172 and 173.

Notes: ^{a/} Capital costs for 1998 are not included, as they could not be computed.
^{b/} Same as in table 173.

future trends in the teacher salary bill will be the main determinant of the total recurrent expenditures. Two different assumptions were made about the share of teacher salaries in total recurrent costs: (a) that at both primary and secondary levels this share will remain at its base-year level; and (b) that at both levels it will decline — at the primary level from 88 per cent to 80 per cent by 1998 and at the secondary level from 77 per cent to 60 per cent by 1998.

In regard to capital costs, it was assumed that the UNESCO estimate^{43/} of 225 rupees per new pupil-place for grades I-VIII and 425 rupees for grades IX-XII was fairly close to reality and that these figures should be increased by 10 per cent to allow for increased prices between the year of estimation and the base year of the projection (1968). In the future, the capital cost per new pupil was assumed to increase at the same rate as GNP per head of the labour force. In those years in which enrolments declined, net capital expenditure was held at zero; it was not allowed to become negative. It was also assumed for computational purposes that capital expenditures are incurred during the year preceding enrolments increase.

The projected total costs of primary and secondary education under alternate assumptions for the period 1969-1998 are shown in table 174. It will be seen that "during the entire projectional period, the education status quo can be maintained at saving of 5,882 million rupees if population trends follow the low projection rather than the high projection. This saving is equal to fifteen times the entire expenditure on education in 1969 and 5.3 times the expen-

diture in 1998 in the high projection. The goal of improving the coverage of education according to IPR-1 assumption can be met at a saving of 7,765 million rupees if population trends follow the low projection rather than the high projection. This saving is equal to twenty times the entire expenditure on education in 1969 and five times the expenditure in 1998 in the high projection. Finally, the goal of improving both coverage and quality of education (as measured by lowered pupil/teacher ratios at the secondary level) can be met at a saving of 8,451 million rupees if population trends follow the low rather than the high projection. This saving is equal to almost twenty-two times the entire expenditure on education in 1969 and four and a half times the expenditure in 1998 in the high projection".^{44/}

It is thus evident that a rapid or early decline in fertility would result in substantial savings in the costs of education in Sri Lanka. These savings could be used either for attaining higher goals in terms of quality of the educational services or for investing in other directly productive activities that would help in achieving rapid socio-economic development. Since similar savings could be expected from other fields, such as health expenditures, the potential contributions of an early decline in fertility to the economic development of the country is clear. As noted in chapter IX, there has in recent years been a substantial decline in the birth rates indicating that population growth in Sri Lanka is tending to follow the low rather than the high population projections. If this trend were to continue, then it will be possible to realize the savings in education expenditure discussed in the preceding paragraphs.

^{43/} UNESCO, *Long-Term Projections for Education in Ceylon* (Bangkok, 1965), pp. 57-60.

^{44/} Gavin W. Jones, *loc.cit.*, p. 157.

CHAPTER XIII

POPULATION GROWTH AND HEALTH NEEDS

A. INTRODUCTION

In Sri Lanka, the Government has not only assumed primary responsibility for the medical care of the people, but has for a long time adopted all possible measures in keeping with the resources of the country to raise the general standard of health of the population. Out-door treatment is available free at the out-patients departments of all government hospitals and dispensaries, and in-door treatment in non-paying wards is provided free to all patients. The total as well as *per capita* expenditure on health services has recorded a steady increase over the years. The current share of public expenditure on health services is about 2 per cent of the estimated gross national product and 7 per cent of the entire government expenditure.

The liberal investments in health services during the past few decades has had very beneficial effects. The crude death rate registered a marked decline during the period immediately following the Second World War, and a gradual decline thereafter to a current level of about 8 per thousand of the population, thus placing Sri Lanka among the countries of the world with very low mortality rates. Along with the decline in the general death rate, there have also been appreciable declines in the maternal and infant mortality rates. The expectation of life at birth increased from about 33 in 1921 to about 70 in 1971.

It is now becoming increasingly difficult to speed up or maintain the past rates of development of the health services. An important factor in this regard is rapid population growth which has been paradoxically aggravated by improvements in health conditions.^{1/} The other is the availability of financial resources. Developing countries such as Sri Lanka not only have very limited capital resources, but there is also a competing demand for these resources from the directly and immediately productive sectors of the economy. Hence in this chapter, the emphasis is on the available health services and on the health

needs that would be necessary to cope with the increased demands resulting from population growth.

B. INCIDENCE OF MORBIDITY

The 1969-70 Socio-Economic Survey^{2/} collected some basic information with regard to morbidity from the households covered. Inquiry was made as to the number of members in each household who suffered from any illness during the two weeks preceding the date of interview. The nature of illness as stated by the informant, or parent or guardian in the case of a child, was also obtained. Additional information was collected with regard to the period of absence from normal duties and type of treatment obtained. The incidence of morbidity by age group and sex in the urban, rural and estate sectors of the country is shown in table 175.

It will be seen that for the country as a whole, 7.5 per cent of the people reported sickness during the reference period. Sectorally, the morbidity rate was highest in rural areas (8.1 per cent), lowest in the urban area (5.7 per cent) and at an intermediate level (6.2 per cent) in the estate areas. The incidence of morbidity was slightly higher (0.2 per cent points) among males than females in the urban and rural sectors but in the estate sector, the morbidity rates for females was significantly higher (by 1.2 percentage points) than males. In all sectors, morbidity was highest among children aged 0-4 years, second highest among those aged 65 years and over and lowest in the age group 15-24 years. On the basis of the 1969-70 Socio-Economic Survey data, it has been estimated that "each individual in Sri Lanka experienced on average 2.1 episodes of sickness in 1969/70. The healthiest segment of the population was the age group 15-19 years with 1.2 illnesses annually. Schoolchildren and adolescents and the productive age group (20-59 years) suffered 1.6-1.9 episodes of sickness annually"^{3/}.

The information obtained in regard to the nature of illness was not published "since the information

^{1/} It has been observed: "To a certain extent, the enormous population growth in developing countries during the past 30 years was an unplanned consequence of the post-war drive to improve health conditions". See Gavin W. Jones, "Population growth, health and family planning" in Warren C. Robinson (ed), *Population and Development Planning* (New The Population Council, 1975), p. 109.

^{2/} Government of Sri Lanka, *Socio-Economic Survey of Sri Lanka 1969-70, Rounds 1-4, Statistical Tables, vol. 1: Population, Labour Force and Housing* (Colombo, Department of Census and Statistics, 1973).

^{3/} L.A. Simeonov, *Better Health for Sri Lanka - Report on a Health Manpower Study* (New Delhi, WHO Regional Office for South-East Asia, November 1957), p. 48.

Table 175. Percentage of persons in each age-sex group reporting sick during a 14-day period in the urban, rural and estate sectors, Sri Lanka, 1969/70

Age group (years)	All Island			Urban sector			Rural sector			Estate sector		
	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes
	0-4	14.6	12.6	13.7	12.5	10.4	11.5	16.3	13.9	15.1	7.4	6.7	7.1
5-14	5.9	5.7	5.8	4.5	4.4	4.5	6.6	6.4	6.5	2.5	2.3	2.4
15-24	3.8	4.8	4.3	2.2	3.3	2.8	4.3	5.1	4.7	2.8	5.2	4.0
25-34	6.2	7.7	6.9	4.8	4.3	4.5	6.3	8.0	7.2	7.6	11.1	9.4
35-44	7.2	7.4	7.3	5.4	5.7	5.6	7.6	7.5	7.5	7.8	9.9	8.9
45-54	8.3	9.0	8.6	7.2	6.7	7.0	8.8	9.1	8.9	6.4	12.5	9.2
55-64	11.0	11.0	11.0	8.6	10.1	9.3	11.4	11.8	11.6	11.6	6.9	9.8
65 and over	13.5	11.5	12.7	12.6	9.5	11.0	13.9	12.2	13.2	10.6	8.9	10.0
All ages	7.5	7.5	7.5	5.8	5.6	5.7	8.2	8.0	8.1	5.6	6.8	6.2

Source: Government of Sri Lanka, *Socio-Economic Survey of Sri Lanka 1969-70, Rounds 1-4, Statistical Tables, volume I: Population, Labour Force and Housing* (Colombo, Department of Census and Statistics, 1973).

Table 176. Number and rates of cases of leading diseases treated at government hospitals, Sri Lanka, 1951-1970

(per 100 thousand)

Diagnosis	1951		1961		1969/70		Percentage increase (+) or decrease (-) from 1951 to 1970
	Cases	Rate	Cases	Rate	Cases	Rate	
Diarrhoeal diseases	81,702	1,037	164,032	1,613	180,323	1,470	+42
Tuberculosis	15,598	198	12,744	125	12,841	105	-48
Anaemia and malnutrition	25,439	323	67,152	660	89,017	729	+126
Malignancies	4,380	56	5,488	54	12,115	99	+78
Respiratory infections	189,647	2,408	288,956	2,842	330,124	2,690	+12
Diseases of infancy and immaturity	13,853	176	22,444	221	4,727	39	-78
Heart diseases	16,513	210	38,911	392	44,000	359	+71
Other infectious diseases	59,952	761	31,437	309	137,424	1,120	+47
Accidents and suicides	87,082	975	99,835	982	219,148	1,786	+83

Source: L.A. Simeonov, *Better Health for Sri Lanka - Report on a Health Manpower Study*, (New Delhi, WHO Regional Office for South-East Asia, November 1975).

furnished on this aspect of morbidity by the informant and interpreted by the Investigator was subject to many errors. However, according to the data obtained, out of the total numbers reporting sick, approximately 27.4% were found to be suffering from common infectious diseases, 16.2% from common respiratory diseases, 9.7% from rheumatic diseases and 7.2% from gastroenteritis." ^{4/}

An analysis of the admissions to five major hospitals indicated that lacerations and open wounds (including dog bites) was one of the causes of admissions to all five hospitals; complications of pregnancy, child birth and the puerperium, infections of skin and subcutaneous tissues, diseases of the genito-urinary system, enteritis and other diarrhoeal diseases and pneumonias were the common causes of admissions to any four of these hospitals. The analysis of cases (patients with the leading diseases) given in table 176 shows that during the period 1951-1970, there has been an increase in diarrhoeal diseases by 42 per cent, heart diseases by 71 per cent, malignancies by 78 per cent and anaemia and malnutrition by 126 per cent, and a decrease in tuberculosis by 48 per cent and in diseases of infancy and immaturity by 78 per cent.

^{4/} Government of Ceylon, *Preliminary Report on the Socio-Economic Survey of Ceylon 1969-70* (Colombo, Department of Census and Statistics October 1971), p. iv.

C. MEDICAL CARE SERVICES

1. Types of services

The most expensive component of a health programme is medical care. In Sri Lanka, medical care is provided mainly by two systems of medicine: (a) Western medicine or that type of medicine taught in the medical faculties within and outside the country and practised by persons registered as medical practitioners with the Ceylon (Sri Lanka) Medical Council; and (b) *Ayurveda* or the indigenous system^{5/} of medicine practised by persons registered as *Ayurveda* practitioners with the Ceylon (Sri Lanka) Ayurvedic Medical Council "The basic difference between the Ayurveda school and the western medicine lies in the comparatively greater importance Ayurveda attaches to the constitution of the patient as against that attached by the modern medicine to the nature of the disease"^{6/}.

The practice of Western medicine seems to have started in Sri Lanka with the beginning of the British period in 1796 and was until recently the only system of medicine provided in government medical in-

^{5/} This term includes *Ayurveda*, *Unani* and *Siddha* systems of indigenous medicine.

^{6/} *A Proposal for Setting up an Asian Health Organization (AHO) with Constitution and Appendices* (Colombo, Ministry of Health, 1962), p. 5 cited in L.A. Simeonov, *op.cit.*

stitutions. Though the *Ayurveda* or the indigenous system has a long history, it was not until 1929 that it was recognized by the State. But after the country achieved political independence, its development was encouraged by the Government and by the people so that by 1962 an "overwhelming majority of the people of Ceylon has continued to love and approach *Ayurveda* despite two centuries of unilateral, intensive and relentless indoctrination in favour of allopathy"^{7/}.

Today both systems of medicine are being provided by the government and private sectors. According to the 1969-70 Socio-Economic Survey, nearly 73 per cent of the demand for medical services is met by the Western system and about 22 per cent^{8/} by the *Ayurvedic* or indigenous system (table 177). The survey also showed that the government sector satisfied 53.7 per cent of the demand for medical care (48.6 per cent Western and 5.1 per cent *Ayurveda*) and the private sector catered to 41.3 per cent of the demand (24.8 per cent Western and 16.5 per cent *Ayurveda*).

Sri Lanka has a large number of institutions ranging from the small clinics of private practitioners to large provincial hospitals of the government to provide medical care services for the people. These include also the specialized institutions like maternity homes, dental institutes, mental, tuberculosis, cancer, leprosy, eye, children's and infectious disease hospitals. A summary of the different types of medical institutions is given in table 178. It will be seen that accessibility to health care services, which is one of the basic health service problems in many developing countries, virtually does not exist in Sri Lanka. "A health care delivery unit can be found, on the average, not further than 0.8 miles from any home in the country and free-of-charge western-type health care services are available within 3 miles of a patient's home."^{9/}

In Sri Lanka, the hospital services lying within certain defined regions are organized in such a way that they would form for each region a single organized system consisting of a provincial hospital

at the centre, surrounded by a number of base and district hospitals, each of which in turn is the centre for a number of peripheral units.^{10/} Since the objective is regional self-sufficiency, the constituents of each system function not independently but as parts of a co-ordinated whole. The provincial hospital is linked to the base hospital and the base hospital to the district hospital by a team of visiting specialists and ambulance services. A similar functional relationship exists between the base and district hospitals and the peripheral units surrounding them.

Though the country is studded with a net work of Western medical institutions, the smaller units are neglected in favour of the larger institutions. This is because, as noted earlier, specialist facilities are concentrated in provincial and base hospitals which are situated in urban areas while these facilities are not provided in the district hospitals, central dispensaries and peripheral units which are more accessible to the vast majority of the rural population. The actual and potential attendance in various medical institutions due to "by-passing" of institutions is shown in table 179. It will be seen that the most often by-passed institutions are the central dispensaries (by 47.2 per cent of the patients), followed by the branch dispensaries and visiting stations (44.0 per cent), rural hospitals (23.0 per cent) and peripheral units (11.5 per cent). It is interesting to note that the big hospitals like provincial and base hospitals are also by-passed.^{11/}

The phenomenon of "by-passing" together with the increase in population, the demand for more and better care, the tendency of the people to seek treatment even for trivial complaints and the lax

^{10/} The provincial and base hospitals are essentially specialist institutions. The district hospitals are in the main "general practice" centres but some of them have been developed beyond this with a nucleus of visiting or resident specialist staff. The peripheral units (which generally consist of a central dispensary, a maternity home and a rural hospital) are so-called because they lie in the periphery of the region. They are also for "general practitioner" work but are being strengthened as much as possible to take the full share of the inflow of patients whose treatment does not necessitate their accommodation in the more specialized district, base and provincial hospitals.

^{11/} A survey of patients indicated that 30 per cent had no special reason but felt that the institution attended provided better treatment than the by-passed one; 14 per cent had previously attended the by-passed institution without benefit; 12 per cent were in fact referred by the institution nearest to their home; a further 12 per cent stated that the by-passed institutions did not work on all days of the week; and the balance gave other reasons.

^{7/} *Ibid.*, p. 2.

^{8/} It would appear that the data from the *Socio-Economic Survey* had under-estimated the role of the *Ayurveda* sector in providing medical services because the estimates prepared for the Health Manpower Study indicated that nearly 38 per cent of the demand for medical care is met by *Ayurveda*. See L.A. Simeonov, *op.cit.*, table 3.17.

^{9/} L.A. Simeonov, *op.cit.*, p. 191.

Table 177. Percentage distribution of sick persons by sources of medical treatment sought, Sri Lanka, 1969/70

Sources of treatment	All island	Urban	Rural	Estate
Ayurvedic - Government	5.1	6.0	5.2	2.0
Ayurvedic - Private	16.5	11.7	18.5	4.7
Western - Government	48.6	41.8	50.6	42.6
Western - Private	24.8	36.4	20.6	45.4
Unspecified	5.0	4.1	5.1	5.3
Total	100.0	100.0	100.0	100.0

Source: Same as table 175.

Table 178. Type of medical institutions in Sri Lanka, 1972

Sector	Type of institution	Number of institutions
Government Western	Colombo group of hospitals	10
	Provincial hospitals	10
	Base hospitals	12
	District hospitals	96
	Cottage hospitals	13
	Peripheral units	94
	Rural hospitals	73
	Maternity homes	128 ^{a/}
	Central dispensaries	424 ^{a/}
	Branch dispensaries	345
	Visiting stations	1,017
	Tuberculosis hospitals	4
	Leprosy hospitals	2
	Mental hospitals	3
	Other hospitals	12
	Health units (Medical Officer of Health areas)	98
Specialized campaigns	5	
Medical Research Institute	1	
Sub-total	2,253 ^{a/}	
Government <i>Ayurveda</i>	<i>Ayurveda</i> hospitals	7
	<i>Ayurveda</i> dispensaries	211
	Sub-total	218
Private Western	Nursing homes	62
	Co-operative hospitals	14
	Estate hospitals	66
	Estate maternity homes	115
	Private practitioners	530
	Sub-total	787
Private <i>Ayurveda</i>	Private practitioners	9,823
	Sub-total	9,823
All sectors		13,081

Source: Same as table 176.

Note: ^{a/} Ninety-four institutions which function both as central dispensaries and as maternity homes have been shown in both categories; thus the total number of facilities has been reduced by 94.

Table 179. Actual and potential attendance at medical institutions, Sri Lanka, 1971-1973

Institution	Number of patients attending ^{a/}	Number of patients passing	Potential total attending	Percentage increase on actual attendance	Percentage by-passing
Provincial hospitals	1,068,500	82,157	1,150,657	29	4.8
Colombo group of hospitals	813,500	-	813,500	24	0.0
Base hospitals	1,083,500	49,480	1,132,980	27	1.2
District hospitals	3,533,000	380,910	3,913,910	14	8.0
Peripheral units	2,320,000	341,985	2,661,985	7	11.5
Rural hospitals	1,198,000	298,530	1,496,530	17	23.0
Central dispensaries and maternity homes	1,542,000	70,984	1,612,984	2	4.3
Central dispensary	4,436,000	2,407,530	6,843,530	41	47.2
Branch dispensary and visiting station	1,119,933	503,003	1,622,936	45	44.0
All institutions	17,114,433	4,134,579	21,249,012		19.4

Source: Same as table 176

Note: a/ Includes only the visits to outpatient departments.

enforcement of the referral practice has resulted in over-utilization of some medical institutions and in under-utilization of the others.^{12/} It has been observed that if by-passing is controlled, "the workload in provincial hospitals, the Colombo group, the base hospitals, district hospitals, peripheral units and the central dispensaries and maternity homes will decrease by 23, 25, 28, 18, 11 and 2% respectively; whereas the workload in the rural hospitals, central dispensaries, and the branch dispensaries and visiting stations will increase by 12, 34 and 61% respectively"^{13/}

3. Outdoor medical care

As noted earlier, the demand for outpatient medical care in Sri Lanka is met largely by the government Western-type and *Ayurveda* medical institutions and by a private sector consisting of Western and *Ayurveda* practitioners. A recent study has estimated that on the average an inhabitant of Sri Lanka makes about three visits to government Western-type medical institutions annually: this includes visits to outpatients departments (OPD) and to clinics. The same study also reported that of those patronizing the outpatient departments, 39 per cent

were aged 20-59 years, 20 per cent were school children, 18 per cent were pre-school children and 8 per cent were the aged. Infants constituted only about 5 per cent of all OPD attendance, probably because they are taken care of mainly at the child welfare clinics. It was also noted that the number of all outpatient visits to hospitals and dispensaries showed a steady increase in the period 1961-1971, an increase that corresponded to population growth.^{14/}

The estimated number of visits to government *Ayurveda* institutions was roughly 0.3 per person while that to private ayurvedic practitioners averaged 2.5 per person. On the whole, nearly 50 per cent of patients visiting ayurvedic practitioners were aged 20-59 years, 11 per cent were over 60 years old and 14.5 per cent were 5-14 years old. About 56 per cent of the patients were males and 44 per cent females. Thus the *Ayurveda* services attract more male than female patients and more grown-ups than children and young people.

It was noted in the previous section that the tendency of the patients to by-pass certain medical care institutions has resulted in over-utilization of some of these institutions and in an under-utilization of others. Nearly 61 per cent of outpatients for Western medical treatment visit large hospitals while 32.5 per cent go to central dispensaries with or without attached maternity homes. Thus OPD attendance at

^{12/} It has been estimated by the Ministry of Health that about 60 medical care institutions are over 50 per cent overcrowded while about 100 hospitals have under 50 per cent bed occupancy.

^{13/} L.A. Simeonov, *op.cit.*, p. 61.

^{14/} *Ibid.*, p. 61.

the larger hospitals is very high, some provincial hospitals recording as many as 3,000 outpatients daily. "Today great crowds completely overload the outpatients departments of large hospitals where doctors and apothecaries, sometimes four or more in a room, can give only the briefest consultations, examinations and advice, and must be constantly on the alert to detect the serious case and the emergency among the relatively trivial illness. The pressure of work is such that there is little time for thorough investigation and treatment of outpatients, and patients are often admitted to the wards for conditions which, if there were more time could well be treated on an outpatient basis"^{15/} There does, therefore appear to be some deterioration in the quality of the care provided.

A one-day census of outpatients carried out in 1971 indicated that 21.6 per cent of outpatients were suffering from diseases of the respiratory system; a further 20 per cent sought treatment for infective and parasitic diseases; 16.5 per cent were treated for diseases of the skin and subcutaneous tissues and about 8 per cent for diseases of the digestive system (table 180).

4. Indoor medical care

In Sri Lanka, indoor or inpatient medical care is available to all patients free of charge in the non-paying wards of the government hospitals. The demand for inpatient medical care is largely met by the Western sector of the government medical service and the contribution of the government *Ayurveda* sector and the private hospitals is very little.

The bed-strength in government Western-type medical institutions in 1970 is shown in table 181. The bed strength has increased from 34,454 in 1964 to 39,780 in 1970 - an increase of 15.46 per cent in the six years or by 2.3 per cent *per annum*. This corresponds roughly to the annual growth of the total population of the country. It will also be noted from table 181 that there are about 3.16 beds per 1,000 population in Sri Lanka compared with about 10 or more per 1,000 of the population in the developed countries.

^{15/} W.D. Hood, "Hospital planning and administration in Ceylon," Assignment Report, WHO, cited in P.J. Hermon, "The effectiveness of social expenditures in Ceylon and West Malaysia," (Bangkok, United Nations Asian Institute for Economic Development and Planning, 1969) (mimeo.), p. 59.

The number of inpatients treated in government Western type medical institutions during the period 1961-1971 is shown in table 182. It will be observed that the number of inpatients registered an increase of 6.3 per cent between 1961 and 1971. The annual demand for inpatient treatment also showed an increase from an average of 15.5 per 100 persons in 1961-1964 to 16.3 in 1965-1968 or an increase of 5 per cent between the two four-year periods. A recent study has noted that the increase in the demand for inpatient treatment was not the same in all categories of hospitals. It was the highest in the provincial hospitals, base hospitals and peripheral units. A decrease was also noted in the demand for inpatient treatment in tuberculosis hospitals and leprosy hospitals.^{16/}

Over the past several years inpatient services have been subject to heavy pressure and the occupancy rates in the provincial and base hospitals were increasing tremendously. In 1968, the occupancy rate of the provincial and base hospitals was 121 per cent. An analysis of the patients discharged from government hospitals indicated that 36 per cent received treatment for influenza, malaria, bronchitis, enteritis, skin infection, asthma, helminthiasis and diseases of the digestive system, while over 95 per cent of the mothers who were discharged have had normal deliveries.^{17/} It will thus be seen that a substantial proportion of the hospital beds are occupied by patients suffering from diseases that can well be treated at outpatients departments. Further, although about 90 per cent of all ailments could be adequately cared for by a general practitioner's service, patients demand to be treated by specialists^{18/}, thus resulting in an over-crowding of wards in the larger hospitals. It has also been found that patients are kept in wards for longer periods than are necessary due to inadequate operating theatre facilities or awaiting pathological investigations and X-ray reports. It is also true that cured patients are often reluctant to be discharged due to personal reasons such as poverty, unemployment or no transportation.

^{16/} L.A. Simeonov, *op.cit.*, p. 63.

^{17/} It may be noted that there are, on average, about 370,000 live births every year in Sri Lanka and about 60 per cent of them take place in hospitals and maternity homes.

^{18/} "Although 85% of deliveries are normal and can be attended by ordinary Grade I officers, patients are not satisfied and demand qualified obstetricians; it is the same with regard to other specialities". See P.J. Hermon, *op.cit.*, p. 58.

Table 180. Diseases in outpatients, Sri Lanka, 1972^{a/}

Diagnosis	ICD Code	Rank	Number of cases	Percentage
Diseases of the respiratory system	460-519	1	11,525	21.64
Infective and parasitic diseases	000-136	2	10 644	19.98
Diseases of the skin and subcutaneous tissues	680-709	3	8,771	16.47
Diseases of the digestive system	520-577	4	4,078	7.66
Symptoms and ill-defined conditions	680-796	5	3,678	6.91
Diseases of the musculoskeletal system and connective tissues	710-738	6	2,791	5.24
Diseases of blood and blood-forming organs	280-289	7	2,418	4.54
Accidents, assaults, etc.	800-999	8	2,018	3.79
Diseases of the nervous system and sense organs	320-389	9	1,844	3.46
Diseases of the genitourinary system	580-629	10	1,643	3.08
Endocrine, nutritional and metabolic diseases	240-279	11	1,602	3.01
Complications of pregnancy, childbirth and the puerperium	630-678	12	1,167	2.19
Diseases of the circulatory system	390-458	13	806	1.51
Mental disorders	290-315	14	171	0.32
Neoplasms	140-239	15	85	0.16
Congenital abnormalities	740-659	16	16	0.03
Certain causes of perinatal mortality and morbidity	760-779	17	8	0.02
Total			53,265	100.00

Source: Same as table 176.

Note: ^{a/} Based on the one-day census of outpatients.

Table 181. Bed strength in government medical institutions, Sri Lanka, 1970

Category of health institution	Number of institutions	Number of hospital beds	Number of hospital beds per 1,000 population ^{a/}
Colombo group of hospitals	10	4,811	0.38
Provincial hospitals	10	7,085	0.56
Base hospitals	12	3,642	0.29
District hospitals	96	10,719	0.85
Peripheral units	94	3,388	0.27
Cottage hospitals	13	416	0.03
Rural hospitals	73	1,706	0.14
Maternity homes	128 ^{b/}	1,534	0.12
Central dispensaries	424 ^{b/}	-	-
Branch dispensaries	345	-	-
Visiting stations	1,017	-	-
Tuberculosis hospitals	4	1,670	0.13
Leprosy hospitals	2	859	0.07
Mental hospitals	3	3,520	0.28
Other hospitals	12	430	0.03
Total	2,149 ^{b/}	39,780	3.16

Source: Same as table 176.

Notes: ^{a/} Based on estimated total population of 12,571,000 in 1970.

^{b/} Ninety-four institutions which function both as central dispensaries and maternity homes have been shown in both categories, thus the total number of the institutions has been reduced by 94.

Table 182. Number of inpatients treated in government medical institutions, Sri Lanka, 1961-1971

Year	Number of inpatients	Inpatients as percentage of total population
1961	1,609,218	15.8
1962	1,667,414	16.0
1963	1,614,664	15.3
1964	1,642,369	15.1
1965	1,784,791	16.0
1966	1,764,016	15.4
1967	1,945,205	16.6
1968	2,079,984	17.3
1970/71 ^{a/}	2,007,263 ^{b/}	16.8

Source: Same as table 176.

Notes: a/ Data for the fiscal year (1 October 1970 to 30 September 1971).

b/ Excluding admissions to maternity homes.

This increases the average length of hospital stay and reduces the turnover of patients.^{19/}

It has also been observed that although the fatality rate of inpatients dropped from 2.5 per cent in 1951 to 1.6 per cent in 1964, this appears to be due to a more liberal policy as regards who needs inpatient care rather than an improvement in the care given. Since 1959, "the fatality rate achieved a level consistently less than 1.7% (1.9% if deliveries without complications are omitted from the calculation). At that time one nurse had to look after more than 600 inpatients p.a. (inpatient days are not available); in 1962-63 when the rate was 1.5% the nurse inpatient ratio was no less than 1:759. If outpatient attendances are included in the calculation, doctors and apothecaries had each to look after 11,876 patients in 1964-65 (in 1950 the rate was 1:9111)".^{20/}

^{19/} It has also been observed: "There are indications that the most expensive health care commodity, treatment in hospital, has been provided at the patients' request rather than on the basis of an objective assessment of their health by medical practitioners. As a consequence, a large number of the population seem to patronize the outpatient departments of hospitals with the expectation of being admitted to the wards." See L.A. Simeonov, *op.cit.*, pp. 167-168.

^{20/} P.J. Hermon, *op.cit.*, p. 59. Since separate figures for doctors dealing with inpatients and outpatients are not available, Hermon equalled the care given to one inpatient to that given to one outpatient, although in reality the ratio is nearer 5:1. The situation is further aggravated by frequent absenteeism particularly among nursing personnel. A survey conducted in 1960 found that "generally speaking, a sister was away from work on days "off" and other leave for 116.7 days *per annum*, a nurse for 91.2 days and a midwife for 113.2 days *per annum*, and quite a number of these officers were in the habit of absenting themselves without prior notice" in the *Administration Report of Director of Health Services*, 1960, cited in P.J. Hermon, *op.cit.*

However, it has been observed that there was an increase in the number of patient days utilized in some categories of medical institutions between 1960/61 and 1970/71, though this increase was not uniform in regard to all categories of institutions. The largest increase was recorded in the provincial hospitals (42.2 per cent) and in the base hospitals (33.4 per cent). The increase in the number of patient days was moderate (7.7 per cent) in the Colombo group of hospitals and very slight (1.2 per cent) in the district hospitals. On the other hand, the number of patient days decreased by 36.2 per cent in tuberculosis hospitals and by 13.2 per cent in leprosy hospitals and by 15.4 per cent in mental hospitals.

The over-all effect of the varying changes in the number of inpatients and in the number of patient days was that "the average duration of treatment in hospitals decreased in all the hospitals under consideration from 8.1 days to 6.2 days (a reduction of 23.5%). This reduction was most pronounced in the mental hospitals (by 50%) and the tuberculosis hospitals (by 25.1%). In other types of hospitals, the decrease in the duration of inpatient treatment varied from 17.5% in the district hospitals to 1.1% in the Colombo group. It is not clear whether the reduction in the duration of hospital treatment is due to higher pressure on hospital admissions and consequently a quicker turn-over of patients, or to changes in the diseases and their severity in these institutions; or to the adoption of more efficacious methods of treatment in hospitals; or to all these factors".^{21/}

D. PUBLIC HEALTH SERVICES

The main function of the public health services is the promotion of health and the prevention of diseases. In Sri Lanka, greater emphasis was laid for a long time on the expansion of the relatively more expensive medical care or curative services and sufficient attention was not paid to the development of the public health or preventive services. It is true that funds allocated for preventive care have increased during the past few years, but this has been more for the malaria control programmes and not for community health services. For instance, safe water for drinking and domestic purposes in adequate quantity is available only to about 25 per cent of the total population while the rest obtain their supplies from unprotected wells, springs, tanks and rivers open to contamination with disease-transmitting organisms. Even in the urban areas, the situation is not satisfactory. Nearly 40 per cent

^{21/} L.A. Simeonov, *op.cit.*, p. 64.

of all morbidity cases in the country and about 30 per cent of the diseases receiving indoor treatment in public medical institutions have their origin in poor environmental sanitation. It is also significant that in Sri Lanka, gastro-intestinal disorders and nutritional deficiencies are still important causes of death. However, in recent years greater attention has been paid to the prevention and control of diseases and this aspect of health is the responsibility of the government Western sector.

1. General preventive services and environmental sanitation

At present there are 98 health units forming the network of public health services in the country. At the head of each of these units is the medical officer of health who is assisted by a group of field staff consisting of public health inspectors, public health midwives and public health nurses. The 98 health units are divided into 700 ranges (or areas) for public health inspectors and 2,277 ranges for public health midwives. On the average, therefore, each health unit has eight public health inspectors and 23 public health midwives. Thus the basic working unit in public health is the range of public health midwives for family health work and the range of the public health inspector for environmental sanitation and the control of communicable diseases.

The public health inspector administers vaccinations against smallpox, follows up contact in respect of communicable disease control, inspects premises with regard to sanitation and food control and promotes health education, latrine construction and provision of safe water supply. The midwife provides a domiciliary service to pregnant mothers and infants and is directly engaged in maintaining a link between the clinics and the families in the village. The public health nurse supervises the work of the midwife and attends to the care of children over 10 years old. Because of high birth rates and infant mortality rates, the greatest emphasis in terms of expenditure and personnel has been placed on maternal and child health work. However, the services provided by the health unit include ante-natal care at home and at clinics, home delivery of normal cases and after care of mother and child, child health clinics, nutrition programme, immunization programmes, investigation of notifiable diseases and attempts to improve sanitation through advice, education and financial assistance.

With a view to improving the nutritional levels

among expectant mothers and children^{22/}, the Ministry of Health has been issuing milk and dietary supplements at ante-natal and well baby clinics. For a long time, the milk feeding centres have been distributing free fresh milk to pre-school children, expectant and nursing mothers. In addition, under the CARE Milk scheme, skim milk is distributed free as a dry ration to pre-school children, expectant and nursing mothers, tuberculosis and leprosy patients through health centres, MOH clinics and medical institutions. Recently, a nutritional supplement programme has been introduced with UNICEF aid through the distribution of "Thripsha" — a wheat-soya blend protein food. This programme has been integrated with the family health programme.

Health programmes can be effective only with the understanding, support and active participation of the people. Since a large number of morbidity cases in Sri Lanka result from ignorance of the simple health rules, there is hardly any line of effort in the field of health which is capable of yielding as high a return, in proportion to investment, as the spread of health education. In the past, the health education programmes have been organized and carried out only by health educators with a view to teaching the people the elementary rules relating to hygiene and public health. These programmes, however, were not designed to meet the specific health problems of different areas. However, the programme has now been reorganized and expanded to meet the particular health needs of the people in the various regions and also to enable all categories of personnel in the health services and all concerned public and private agencies to participate in the programme.

Though originally designed to cover a population of about 50,000, each of the health units currently serves a population of approximately 80,000 to 120,000. On the basis of an estimated population of 13.6 million in 1975 and a health unit for every 50,000 people, Sri Lanka should have about 270 health units to provide a satisfactory coverage, in terms of population and area. There is thus a need to set up an additional 170 health units to serve the existing population. Over the years, the increase in population will require the setting up of further health units. Moreover, although the crude death

^{22/} In Sri Lanka, the chief cause of maternal deaths is anaemia due to malnutrition among pregnant women and the chief cause of infant mortality is pre-maturity, likely to be due also to maternal anaemia. The chief cause of anaemia is inadequate dietary intake due to poverty and shortage of food.

rates as well as age-specific mortality rates for the country as a whole declined steadily over the years and have now reached low levels, there are regional, ethnic and occupational differences in these rates, probably associated with inequalities in the socio-economic conditions of the population. These factors also will have to be taken into consideration, besides the purely demographic, in setting up the health units throughout the country.

2. Specialized campaigns

There are five specialized campaigns each concerned with the control of a specific disease. These are: (a) anti-malaria campaign; (b) anti-filariasis campaign; (c) anti-tuberculosis campaign; (d) anti-leprosy campaign and (e) anti-venereal diseases campaign. All these campaigns are organized and carried out independently, although some have partly merged their activities with the general medical care and public health services.

The anti-malaria campaign performs two main activities: (a) spraying of houses with insecticides in the endemic areas; and (b) diagnostic and therapeutic services to individual patients. The spraying of houses is carried out by spraying teams and the diagnosis and treatment of malaria in the field is done by mobile and walking teams and by malaria assistants attached to the general medical institutions.

As noted in chapters I and VIII, for a long time, malaria was the main cause of morbidity and mortality in the country. In 1940, the number of malaria morbidity cases was 3,413,618 and the number of deaths due to malaria was 9,169. The anti-malaria campaign started in 1945 was responsible for drastically bringing down the number of morbidity cases to a mere 460 in 1960 and malarial deaths to 61. However, after several years of remission of epidemic malaria, there was an outbreak in 1967 which continued with greater vigour until 1970. The disease has now settled at a rather high level of incidence which during 1971 and 1972^{23/} was more than 1 per cent (table 183). Since the recent past has shown clearly that malaria is quite an unpredictable disease, it would be safer not to expect any major success in malaria control during the next one or two decades.

^{23/} The number of blood examinations for malaria in 1971/72 was 900,000 or about six blood examinations per one diagnosed case of malaria. The number of cases sprayed with insecticides in 1971/72 was 4,000,000, that is an average of two sprayings per house annually.

Table 183. Number of new positive cases of malaria, Sri Lanka, 1961-1972

Year	Number of positive cases	Rate per 1,000
1961	110	-
1962	31	-
1963	17	-
1964	150	0.00137
1965	308	0.027
1966	499	0.043
1967	3,466	0.29
1968	440,644	36.4
1969	537,688	43.4
1970	468,199	37.9
1971	145,368	11.3
1972	132,605	10.1

Source: Same as table 176.

The antifilariasis campaign deals with two aspects of filariasis control: (a) the diagnosis and treatment of cases; and (b) mosquito control, by spraying and oiling stagnant waters. The work is organized and conducted through one centre, one sub-centre, 16 special clinics for treatment, and field teams for diagnosis and for vector control work.

Filariasis is a specific problem in Sri Lanka. The disease is prevalent in the southwest coastal area and the estimated population at risk is about 2 million. Twenty years ago, the annual incidence of micro-filariasis was about 3-5 per cent, which meant that at least 12-20 per cent of the population at risk was infected at any point in time. Recently, a spectacular decrease in the incidence of the disease has reduced the incidence rate to 0.59 per cent (in 1972); this means that there are about 12,000 new cases annually in the country.^{24/} However, during the three years, 1969-1972, there was no major change in the incidence which shows that further reduction in the incidence of this disease will be at a much slower pace.

The anti-tuberculosis campaign is concerned with (a) the diagnosis and treatment of cases of tuberculosis; and (b) BCG vaccination. There is a National Tuberculosis Institute in Colombo, which ad-

^{24/} The number of blood examinations for micro-filaria carried out in 1971/72 was about 2,500,000 or 125 per cent of the population at risk.

ministers the campaign, as well as 51 chest clinics and branch clinics, 4 special hospitals, and 28 wards for tuberculosis in general hospitals for the treatment of tuberculosis cases. A large number of general medical and public health institutions participate in the work by carrying out BCG vaccinations and treating the diagnosed cases. Some of them also take part in diagnostic work by collecting sputum specimens. During the period 1961-1972, all forms of tuberculosis underwent a remarkable decline, the incidence falling from 8.7 to 4.9 per 10,000 population, a decrease of 44 per cent, or 4 per cent annually.^{25/} On the basis of experience in other countries, it may be expected that the incidence will decrease by a further 50 per cent during the next 20 years, going down to about 2.5 per 10,000 persons.

The antileprosy campaign diagnoses and treats patients at home and in the two leprosy hospitals. The incidence of leprosy clearly increased during the period 1964-1972 from three to seven new cases per 10,000 population. This increase cannot be ascribed solely to improved case-finding and registration, since about 25 per cent of new cases registered in 1970-1971 were children under 15 years old. The total number of registered cases in 1971-1972 was 6,981. In view of the very chronic course of the disease, major changes are not to be expected during the next two decades or so.

The anti-venereal diseases campaign deals with the diagnosis, treatment, and follow-up of cases of venereal diseases in the Colombo central venereal diseases clinic, and in nine full-time clinics and 16 part-time clinics in various parts of the country. The incidence of venereal diseases was in the range of 7.2-8.2 per 10,000 during the period 1961-1969, without showing any time trend. About four times more cases are recorded among males than among females, which may be a reflection of the case-finding policy and not of the dynamics of the disease and of the fact that more males tend to seek treatment at anti-venereal disease clinics. As the reported figures refer only to attendance at government clinics, it is likely that the true figures will be higher since a considerable number of cases may have been treated in the private sector.

E. DENTAL SERVICES

In Sri Lanka, dental care forms an integral part

of the general health services of the country. Dental services are organized and administered in two streams - curative and preventive. The dental curative services consist of both out-door and in-door treatment of patients at the dental clinics attached to 10 provincial, 12 base and in a large number of district hospitals throughout the island. Nevertheless, due to a shortage of qualified dental surgeons and limited financial resources to meet the capital as well as the current expenses of an expansion programme, it has not been possible to provide an adequate dental service.

The largest curative dental unit is the Dental Institute, Colombo, administered as part of the Colombo Group of Hospitals. There are 30 dental surgeons including 4 specialists with a ward of 45 beds. The average daily attendance is in the order of 800 patients and it is estimated that a large number of others are referred by this Institute to the clinics nearest to their homes as it is not possible to cater to their needs with existing staff and facilities. The lack of adequate facilities has also resulted in work in several departments like prosthetics, orthodontics and conservation falling into arrears.

Daily attendance at the dental clinics in the provincial and base hospitals is also fairly large and it is not possible to cater to the increasing number of patients with existing facilities. The increasing pressure of attendance at these clinics is mostly due to an influx of patients from areas where dental services are lacking. The problem could be solved either by expanding the existing services or by setting up new services in rural areas.

The chief component of the preventive dental services is the School Dental Service which is designed to provide regular treatment for school-going children between the ages 5 and 13 years as well as pre-school children. The service includes the detection of dental caries in their incipient stage among children and providing conservation treatment.^{26/} The school dental service is staffed by dental nurses, directed and supervised by dental surgeons. The School Dental Service was started in 1953 with Colombo Plan aid from the Government of New Zealand and was during the initial stages confined to schools in the city of Colombo. Gradually the service was expanded to cover schools in other areas as well and the service is currently carried out by 234 dental nurses in 124 school dental clinics

^{25/} Vaccinations against tuberculosis in 1971/72 amounted to about 750,000 of which about 133,000 were BCG vaccinations of newborns giving a 36 per cent coverage of newborn infants.

^{26/} Dental caries is a highly prevalent condition in urban school-children aged 6-9 years. In rural areas also it seems to be a problem of importance but less than in urban schools.

Table 184. Health manpower in Sri Lanka, 1972

Category of health manpower	Number of health manpower		
	Government and semi-government	Non-government	Total
Western type of training	40,054	4,290	44,344
Doctors	2,218 ^{a/}	1,033	3,251
Nurses	5,661	797	6,458
Midwives	3,394	192	3,586
Dental surgeons	180	100 ^{b/}	280
Assistant/Registered Medical practitioners	1,194	143 ^{b/}	1,337
Public health inspectors	1,074	129 ^{b/}	1,203
Medical laboratory technologists	455	55 ^{b/}	510
Radiographers	164	20 ^{b/}	184
Physiotherapists	129	15 ^{b/}	144
Dental nurses	239	29 ^{b/}	268
Pharmacists	406	49 ^{b/}	455
Dispensers	804	96 ^{b/}	900
Attendants	5,269	632 ^{b/}	5,901
Other workers	18,867	1,000 ^{b/}	19,867
Ayurveda type of training	983	9,823	10,806
Ayurveda doctors	293	9,823	10,116
Other workers	690	-	690
Total	41,037	14,113	55,150

Source: Same as table 176.

Notes: a/ Estimated number of doctors in semi-government institutions is 173.

b/ Estimates.

throughout the island. However, the service has not covered even half the number of children needing these services. The number of children in the age group 2.5 to 13 years is estimated to be 4 million. But according to available data, the school dental service is now covering only about 117,000 children.

The other aspect of the preventive dental service is the adolescent dental services catering to school-going children between 13 and 18 years of age. This service is manned by dental surgeons who also attend to difficult cases referred by the school dental clinics. The adolescent dental service is at present available at only four clinics — three in Colombo and one in Kandy.

F. HEALTH MANPOWER

The efficient and smooth functioning of the health system depends largely on the timely availability of appropriately trained manpower^{27/} in adequate

^{27/} For the purposes of this study, health manpower refers to persons who have received, or are receiving, education and training for a specific occupation in the health care system.

numbers. A proper assessment of the health manpower of various levels and categories is rendered difficult by the absence of reliable information. The most reliable data concerns medical doctors, nurses, midwives and dental nurses. Data on other categories reflect the budgetary provisions and not the actual number employed. Nevertheless, the situation in regard to health manpower in 1972 is shown in table 184. The adequacy of the important categories is discussed in the following sections.

1. Medical doctors

The number of doctors qualified in the Western system of medicine was estimated to be 3,250 in 1972. On the basis of an estimated population in that year of 12,951,000, the doctor-population ratio works out to 1 doctor per 3,985 persons or 25.1 doctor per 100,000 population. Though this ratio is better than India (22.0) and Thailand (18.7) and much better than some African countries like Nigeria (2.0), Senegal (5.0) and Malawi (0.7), it is considerably below the ratio obtaining in several countries at a

comparable level of development, e.g. Turkey (47.6), Columbia (41.0), Peru (45.5), Ecuador (35.7) and Jamaica (45.5).

In Sri Lanka, there is wide disparity in the regional distribution of doctors as measured by the doctor-population ratio (table 185). The ratio is higher (52.7) in the Colombo SHS (Superintendent of Health Service) division and lowest (9.7) in Kegalla SHS division. However, the ratios standardized for the size of the geographic area show that the accessibility to doctors ranges from a low of 3.3 in Vavuniya SHS division to a high of 95.8 in Colombo SHS division. This means that accessibility to doctors by the population is about 30 times easier in Colombo SHS division than in Vavuniya SHS division.

Table 185. Doctor-population ratio by region, Sri Lanka, 1972

Superintendent of Health Service Division	Ratio per 100,000 population	Area in sq. mi in which population of 100,000 live	Standardized ratio per 100 sq mi ^{a/}
Sri Lanka	25.6	189.2	18.6
Anuradhapura	17.4	491.3	7.8
Badulla	13.2	475.7	6.1
Batticaloa	13.2	396.4	6.6
Colombo	52.7	29.6	95.8
Galle	14.4	87.6	15.5
Jaffna	28.7	136.9	24.5
Kalutara	18.9	85.4	20.3
Kandy	20.1	84.6	21.8
Kegalla	9.7	98.5	9.8
Kurunegala	13.6	179.2	10.1
Matale	10.4	433.5	5.0
Matara	10.3	159.5	8.2
Puttalam	20.8	302.6	11.9
Ratnapura	17.1	189.0	12.5
Vavuniya	12.1	1,377.6	3.3

Source: Same as table 176.

Note: ^{a/} See footnote ^{27/} of chapter XIII.

Though the doctor-population ratio is a good indicator of the level of the medical facilities available to the people, it is not possible to fix a norm *a priori* as to the most desirable doctor-population ratio for the country. The adequacy of the number of doctors in the country has to be determined in relation to a number of factors such as their geographical and functional distribution, the level of medical technology, availability of equipment and institutional facilities, supporting para-medical staff like laboratory technicians, nurses and midwives and alternative medical services like *Ayurveda* etc.

Judging by these factors and also by an evaluation of the efficiency and output of medical services in relation to demand, it is clear that the number of doctors is inadequate. For instance, there are about a hundred small hospitals which are not manned by doctors. If the government policy of strengthening peripheral medical care services is to be implemented, more doctors will then have to be recruited.

The Planning Committee on Education, Health Housing and Manpower observed, "In the context of the present volume of development effort in the country, it will not be possible to reach a ratio comparable to that obtaining in the countries mentioned above. Nevertheless, we feel that the present ratio is also too low. After considering the requirement of doctors for the implementation of the various health programmes over the next 5 years and the fact that at present Ayurvedic Medical Practitioners also provide medical aid to a considerable extent, we feel that Ceylon should have a doctor population ratio of at least 1:3,000"^{28/}

On the basis of a doctor-population ratio of 1:3000, Sri Lanka should have had about 4,320 doctors for an estimated population of 12.951 million in 1972. Hence the existing backlog in 1972 was 4,320-3,250 = 1,070 doctors. The increment to the population is estimated at about 300,000 *per annum*; thus the new demand created by population increase is estimated at about 100 doctors per year.

2. Dental surgeons

The number of dental surgeons in practice in the country was estimated to be 280 in 1972 of whom 180 were employed in the government and semi-government institutions.^{29/} The ratio of dental surgeons to population in 1972 works out to 1 dental surgeon per 46,250 people. This ratio is not realistic in equity as the tendency for private practitioners is to concentrate in urban areas. Even so compared with standards obtaining in other countries, this ratio is very unsatisfactory. The Ministry of Health had suggested that this ratio should be improved to 1:20,000 as early as possible.^{30/} On the basis of

^{28/} Government of Ceylon, *Report of the Planning Committee on Education, Health, Housing and Manpower* (Colombo, Ministry of Planning and Economic Affairs, May 1967), p. 87.

^{29/} The dental surgeons work mainly in hospitals. Very few of them, nine in 1973, were employed in the dental public health service.

^{30/} *Report of the Planning Committee on Education, Health, Housing and Manpower, op. cit.*, p. 88.

this desirable ratio, the number of dental surgeons required in the country in 1972 was about 650. Thus there was a backlog of 370 dental surgeons in Sri Lanka in 1972. The requirements created by the increase in population is estimated at 15 *per annum*.

3. Nurses

In Sri Lanka, there are several categories of nursing personnel who have had different types of training. They are employed in the government, the semi-government and private sectors. According to the Health Manpower Survey conducted in 1972, there were 6,458 nurses in the country of whom 5,661 or nearly 88 per cent were employed in the government and semi-government medical institutions. The number of nurses employed in the government sector in 1965 was 3,856; there has thus been an increase of government nurses by 47 per cent during the seven-year period.

The distribution of nurses by health regions is shown in table 186. For the country as a whole, there are about 51 nurses per 100,000 population or 1 nurse per 1,969 persons. However, this ratio varies from a low of 22.8 in Batticaloa SHS division to a

Table 186. Nurse-population ratios (per 100,000) and nurse-doctor ratios in different Superintendent of Health Service (SHS) divisions, Sri Lanka, 1972

Superintendent of Health Service Division	Number of nurses	Nurse-population ratio	Nurse-doctor ratio
Sri Lanka	6,458	50.8	2.1
Anuradhapura	160	27.5	1.6
Badulla	195	24.1	1.8
Batticaloa	121	22.8	1.7
Colombo	2,396	89.6	1.7
Galle	309	41.9	2.9
Jaffna	385	54.7	1.9
Kalutara	315	43.0	2.3
Kandy	558	34.0	1.7
Kegalla	214	32.8	3.4
Kurunegala	418	40.7	3.0
Matale	120	25.0	2.4
Matara	219	23.6	2.3
Puttalam	133	35.0	1.7
Ratnapura	240	36.3	2.1
Vavuniya	42	24.2	2.0
Specialized campaigns	449		
<i>Ayurveda</i> hospitals	66		
Others	112		

Source: Same as table 176.

high of 89.6 in the Colombo SHS division. "There is a fairly good association between the regional distribution of nurses and the regional distribution of doctors, expressed as nurse/doctor ratio. This ratio is 2.1 for the island, varying from 1.7 in the Batticaloa, Colombo, Kandy and Puttalam SHS divisions to 3.4 in the Kegalle SHS division. Such a close association between the doctor:population ratio and nurse:population ratio, by SHS division, indicates a significant working interrelation between these two categories of health manpower."^{31/}

The ratio of 51 nurses per 100,000 population obtaining in Sri Lanka corresponds to the ratio obtaining in Thailand and is better than the ratios for India (13), Turkey (6), Colombia (11), Peru (28), Ecuador (6), Guatemala (12), Malawi (2), Nigeria (14), Senegal (3) and Sudan (2). Nevertheless, on the basis of an 8-hour duty shift, the spread of nurses works out to 1 nurse per 21 beds. This ratio is considered quite inadequate by norms of efficient service. In view of the current bed occupancy rate of 1.3 persons per bed due to overcrowding, it is considered desirable to have a nurse for every 12 beds. The total number of nurses who should therefore be in service is 10,363. Thus there is an immediate need for 4,703 additional nurses. The proposal to increase the bed strength in government medical institutions by 950 beds *per annum* will require the services of another 800 nurses for the decade 1975-1985.

4. *Ayurveda* practitioners

The total number of *Ayurveda* practitioners registered with the Sri Lanka Ayurvedic Medical Council in 1972 was 10,116 of whom 9,823 or about 97 per cent were in the non-governmental sector. The number of *Ayurveda* practitioners is three times the number of Western doctors in the country. Their distribution by various health regions is shown in table 187. It will be seen that while for the island as a whole, there were about 80 ayurvedic practitioners per 100,000 people, this ratio was highest in Kalutara (115.3) followed by Kegalla (109.3) and Jaffna (105.5) and lowest in Badulla (14.7). Thus there is considerable disparity in the regional distribution of *Ayurveda* practitioners.

The ayurvedic practitioners practise one of three systems of indigenous medicine: (a) *Ayurveda* which is based mostly on treatment with decoctions of different herbs; (b) *Unani*, based on treatment

^{31/} L.A. Simeonov, *op.cit.*, p. 122.

Table 187. Distribution of *Ayurveda* practitioners by Superintendent of Health Service (SHS) divisions and the *Ayurveda* doctor - population ratio, 1973

Superintendent of Health Service division	Number of <i>Ayurveda</i> practitioners	<i>Ayurveda</i> doctor - population ratio ^{a/}
Sri Lanka	10,163	79.9
Anuradhapura	340	58.8
Badulla	119	14.7
Batticaloa	290	54.6
Colombo	2,668	99.8
Galle	726	98.8
Jaffna	743	105.5
Kulutara	844	115.3
Kandy	813	49.6
Kegalla	713	109.3
Kurunegala	921	88.7
Matale	357	74.3
Matara	807	86.8
Puttalam	254	66.9
Ratnapura	511	77.2
Vavuniya	57	32.9

Source: Same as table 176.

Note: a/ Number of *Ayurveda* doctors per 100,000 population.

with different oils and (c) *Siddha* or *rasa*-medicine based mainly on treatment with metals like mercury etc. Some of them practise in a narrow field only, like boils and carbuncles, diabetes, snake-bites, asthma etc.

G. HEALTH EXPENDITURE

The public expenditure on health services in Sri Lanka for the period 1955 to 1970 is shown in table 188. It will be observed that public expenditure on health services constitutes a little over 2 per cent of the gross national product and about 7 per cent of the total government expenditure. In absolute terms, the total public expenditure on health has increased by over two and half times between 1955 and 1970, while *per capita* expenditure showed an increase by about 76 per cent during this period. This large increase in annual expenditure reflects, to a large degree, the extent of the increased services rendered to the community in the field of health.

While Sri Lanka can be proud of the various achievements in the field of health, it must be men-

tioned that the standards which are envisaged for the various health services of the country have not yet been reached. Much still remains to be done which must necessarily have to be spread over a number of years. Even the maintenance of the current level of service will cost more because of the increase in population and increase in unit costs of providing these services.^{32/} The faster the rate of increase in population, the higher will be the expenditure that has to be incurred for the provision of health services and facilities.

A recent study by Jones and Selvaratnam attempts to assess the effect of alternative rates of population growth on government expenditure on health services.^{33/} The study takes into account the differential needs of health services among different age and sex groups in the population and the fact that the rate of use of the government health services is greater at the time of birth and infancy than at any other stage of the life cycle except old age. According to this study, the population dependent on government health care in Sri Lanka estimated at 10.1 million in 1968 will increase to 21.1 million by 1998 if population trends were to follow the path of constant 1968 fertility levels (high projections) and to only 15.8 million persons or 5.3 million less if there were to be a rapid decline in fertility between 1968 and 1998 (low projections). Similarly, if the availability of health services per head is to be expanded by two thirds during the 30-year period,^{34/} the number of doctors will increase by 233 per cent according to the high projections and by only 146 per cent accord-

^{32/} It has been observed that "the quantitative *per capita* demand for the government western-type inpatient and outpatient hospital services has not shown any significant rise during the past 10 years and it is unlikely that it will change considerably in the future. Thus, the size of the demand for government western-type medical services will depend mainly on the population growth in the future". See L.A. Simeonov, *op.cit.*, pp. 65-66.

^{33/} Gavin W. Jones and S. Selvaratnam, "Chapter 5: The effect of a decline in fertility on the cost of public health care in Ceylon", *Population Growth and Economic Development in Ceylon* (Colombo, Hansa Publishers Ltd., 1972), pp. 55-91.

^{34/} Two basic alternative trends in the health system were contrasted in this study to test the effect of a decline in fertility in each case. In the first case it was assumed that Sri Lanka will merely try to maintain the 1968 levels of health care except that an increasing proportion of births will be hospitalized. In the second case, the assumptions regarding the hospitalization of births and the proportion of population not dependent on government health facilities were the same as in case one. But a further assumption was that by 1998 the number of inpatient cases (excluding maternity cases) and of outpatient cases per head of the population dependent on government health care will be raised by two-thirds.

Table 188. Public expenditure on health services, Sri Lanka, 1955-1970
(Million rupees)

Year	GNP at current factor cost prices	Total government expenditure	Current government expenditure	Total public expenditure on health services	Current public expenditure on health services	Capital public expenditure on health services	Public expenditure on health services per capita (Rupees)	(4) As per-centage of (1)	(4) As per-centage of (2)	(5) As per-centage of (3)
	1	2	3	4	5	6	7	8	9	10
1955	5,050.9	1,068.1	762.3	107.9	89.2	18.7	12.37	2.1	10.1	11.7
1956	5,701.8	1,258.4	862.8	118.0	97.8	20.2	13.21	2.1	9.4	11.3
1957	5,146.9	1,456.9	976.7	122.5	104.7	17.8	13.37	2.4	8.4	10.7
1958	5,422.9	1,502.3	1,118.2	134.2	118.3	15.9	14.30	2.5	8.9	10.6
1959	5,783.1	1,743.8	1,274.4	149.0	140.5	8.5	15.48	2.6	8.5	11.0
1960	5,893.3	1,821.3	1,365.4	149.2	139.2	10.0	15.08	2.5	8.2	10.2
1961	6,286.8	1,976.4	1,471.3	154.0	141.0	13.0	15.12	2.4	7.8	9.6
1962	6,313.3	2,076.6	1,498.1	156.2	143.2	13.0	14.96	2.5	7.5	9.6
1963	6,502.5	1,985.3	1,534.0	158.7	145.2	13.5	14.95	2.4	8.0	9.5
1964	6,796.7	2,220.7	1,753.6	159.3	147.8	11.5	14.61	2.3	7.2	8.4
1965	8,063.0	2,431.2	1,895.5	166.8	148.5	18.3	14.94	2.1	6.9	7.8
1966	8,309.0	2,586.5	1,996.8	173.0	156.4	17.4	15.12	2.1	6.7	7.8
1967	9,004.0	2,792.1	2,096.7	189.3	168.4	20.9	16.18	2.1	6.8	8.0
1968	10,594.0	3,181.6	2,392.4	220.6	196.1	24.5	18.39	2.1	6.9	8.2
1969	11,816.0	3,522.1	2,612.3	247.5	210.0	37.5	20.20	2.1	7.0	8.0
1970	12,433.0	3,732.9	2,849.8	273.7	235.7	38.0	21.77	2.2	7.3	8.3

Source: Ministry of Health.

ing to low projections. Roughly the same proportions apply to the requirements for hospital beds.

According to Jones-Selvaratnam's study, an improvement in health coverage could be attained at considerably less cost if fertility were to decline more rapidly than to remain constant at 1968 levels. "In fact, during the entire projection, period, something of the order of Rs. 3,356 million would be saved if fertility declined according to the low projection,

or 17 times the entire sum spent by the government on health services in 1968. True, most of the savings come towards the end of the period. But even in the first 20 years, Rs. 1,198 million would be saved (6 times the 1968 expenditure), and in the first 10 years, Rs. 228 million would be saved or more than the entire 1968 expenditure"^{35/}

^{35/} Gavin W. Jones and S. Selvaratnam, *op.cit.*, p. 90.

CHAPTER XIV

ECONOMIC ACTIVITY OF THE POPULATION

A. INTRODUCTION

The economically active population is generally defined as that part of the population which supplies and which is willing to supply the labour for the production of economic goods and services. It thus includes those who, during the reference period, are (a) employed, that is, those who work for wages or profit including unpaid family workers; and (b) the unemployed, or persons who are not currently engaged in any work but intend to work and are actively looking for work. The economically inactive persons are those who are neither employed nor unemployed during the reference period such as those engaged in domestic duties in their own homes, students, the old-aged, the disabled and persons voluntarily engaged in charitable and religious services.

In Sri Lanka, the population censuses and labour-force and other sample surveys constitute the major source of information on the economic activity of the population.^{1/} The data of the 1946 census can be taken as a benchmark because no complete census was held in 1931 and the accuracy of the 1921 census data is considered to be doubtful. Further, the censuses prior to 1946 used the "earner" concept to enumerate the economically active population, while the censuses since 1946 used the "gainful worker" concept. The gap between these two concepts is too wide to permit any worthwhile comparison to be made.

Though all four censuses since 1946 have adopted the "gainful worker" concept to measure the economically active population, the definition of "gainful worker" has varied from one census to another. For instance, the 1946 and 1953 censuses enumerated only the unemployed persons with previous experience as part of the gainfully employed. In 1963, all those without employment whether previously employed or not were considered unemployed and their particulars recorded only if they were actively seeking employment. In 1971, all those without employment were considered unemployed if they were available for work irrespective of whether they were actively seeking employment or not. Similarly, the unpaid family workers were excluded from the

^{1/} For detailed discussion on available data, see S. Selvaratnam, "Labour force data in Sri Lanka — description of sources and annotated bibliography" (Bangkok, ILO ARTEP, 1973) (mimeo).

category of gainful workers in the 1946 census, but were included in this category in the subsequent censuses.^{2/} Further, in Sri Lanka, "the absence of a well-defined labour market, prevalence of work-sharing according to availability of work as well as of persons to do it, frequent inter-change between productive and non-productive forms of activity and similar other factors make it difficult to identify with great precision all the economically active members of the population."^{3/} The analysis of the time series data on economic activity of the population has therefore to take into consideration the limitations imposed by changes in definitions as well as difficulties in measurement.

B. ECONOMICALLY ACTIVE POPULATION

1. General trends

The total as well as the economically active population as recorded at the various censuses, their intercensal growth, and the activity rates are shown in table 189. It will be observed that the total population increased by about 91 per cent from 6.7 million in 1946 to 12.7 million in 1971. But in spite of the much wider definition adopted in 1971 census, the economically active population increased by only about 72 per cent during the same period. As a result, the over-all participation or crude activity rate recorded a decline from 39.2 per cent in 1946 to 34.8 per cent in 1971 (figure 19). This disparity between widening definition and declining relative size of the economically active population is observed even in the intervening censuses of 1953 and 1963, being more pronounced in 1963. The trend in the activity rate for males, who constitutes over 75 per cent of the economically active persons, is similar to that of the total population, but the rates for females give a different picture. The rate of increase of the total female population has in all intercensal periods been higher than that of the

^{2/} For discussion on differences in definition, see S. Selvaratnam and L.S. Fernando, "Measurement of the employed and unemployed in Ceylon" in Ronald G. Ridker and Harold Lubell (ed.), *Employment and Unemployment Problems of the Near East and South Asia Vol. I* (New Delhi, Vikas Publications, 1971); Pitiyage Wilson, *Economic Implications of Population Growth — Sri Lanka Labour Force 1946-1981* (Canberra, The Australian National University, 1975).

^{3/} R.K. Srivastava and S. Selvaratnam, "Employment situation and trends" (Colombo, Ministry of Planning and Employment, 1971) (mimeo), p. 10.

Table 189. Growth of total population and economically active population, Sri Lanka, census years 1946, 1953, 1963 and 1971

Census year	Total population			Economically active population ^{a/}			Crude activity rate ^{b/}
	Number	Percentage increase	Annual average growth rate	Number	Percentage increase	Annual average growth rate	
Both sexes							
1946	6,657,339	-	-	2,611,524	-	-	39.2
1953	8,097,895	21.6	2.84	2,993,349	14.6	1.97	37.0
1963	10,582,064	30.7	2.63	3,451,707	15.3	1.39	32.6
1971	12,689,897	19.9	2.23	4,488,139	30.0	3.23	34.8
Male							
1946	3,532,218	-	-	2,041,524	-	-	57.8
1953	4,268,730	20.9	2.74	2,268,740	11.1	1.52	53.1
1963	5,498,674	28.8	2.49	2,736,046	20.6	1.83	49.8
1971	6,531,361	18.8	2.11	3,312,469	21.0	2.34	49.9
Female							
1946	3,125,121	-	-	570,000	-	-	18.2
1953	3,829,165	22.5	2.94	724,609	27.1	3.49	18.9
1963	5,083,390	32.8	2.79	715,661	-1.2	-0.12	14.1
1971	6,158,536	21.2	2.35	1,175,670	64.3	6.20	18.8

Sources: *Census of Ceylon, 1946, Vol. I, Part II, Statistical Tables*; *Census of Ceylon 1953*; and unpublished data of 1963 and 1971 censuses.

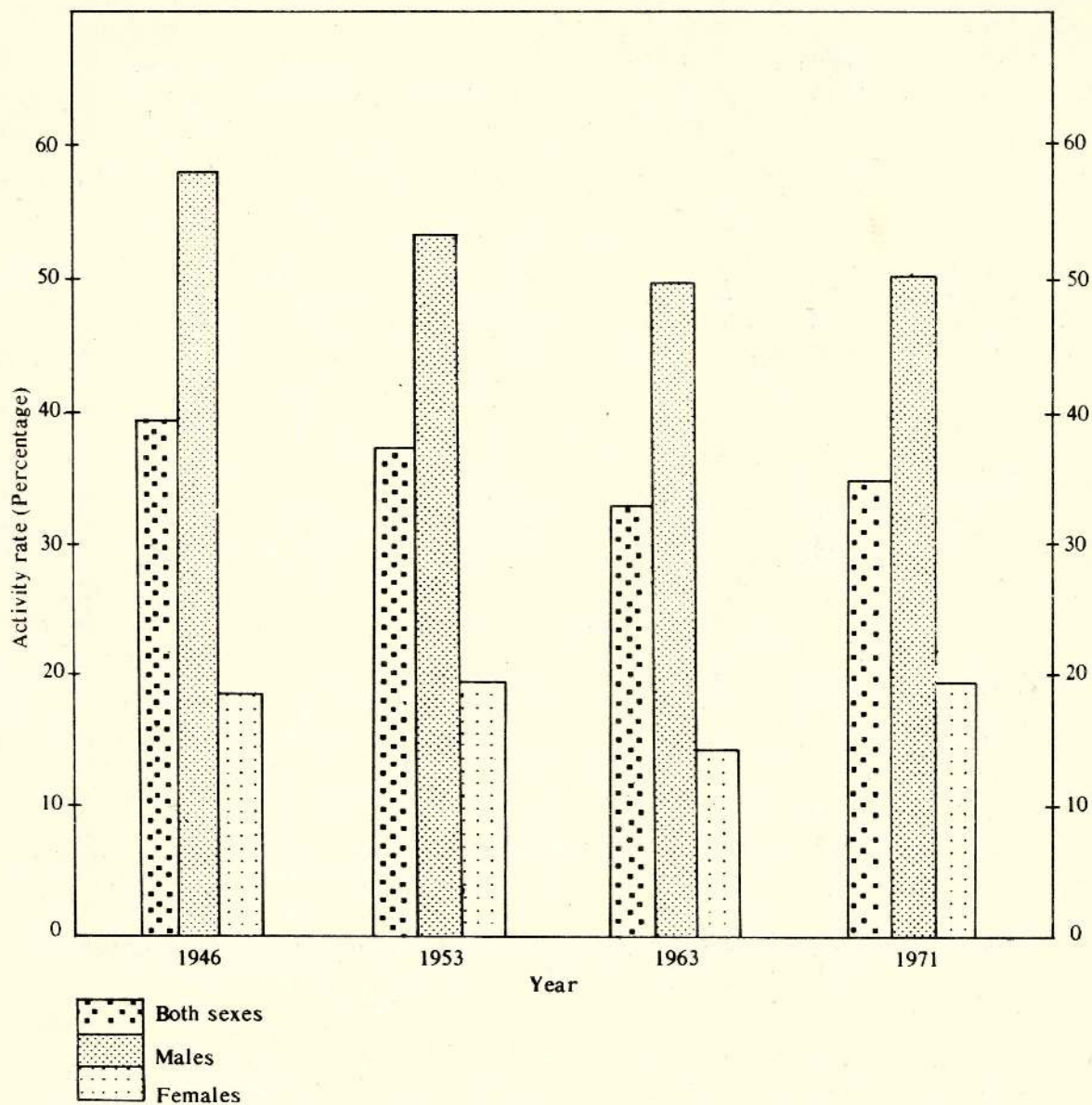
Notes: ^{a/} Aged 10 years and over.

^{b/} The crude activity rate represents the number of economically active persons as percentage of the total population.

male population, and the rate of increase in the female economically active population has been higher than the rate of increase of the female population except for the aberration in 1963. Thus while the male economically active population increased by 62.3 per cent between 1946 and 1971, the female labour force increased by 106.3 per cent during the same period.

It will be observed that the crude activity rate for the total population declined steadily from 39.2 in 1946 to 32.6 in 1963. To some extent, this decline could be attributed to the differences in concepts and definitions used which have resulted in an under-

estimation of the economically active population in 1963. However, changes in the activity rates of the very young and very old workers have also contributed to the declining trend. The activity rate for the age group 10-14 fell from 13.0 per cent in 1946 to 10.1 per cent in 1953 and to 6.2 per cent in 1963. Similarly for those aged 65 years and over, the rate dropped from 60 per cent in 1946 to 47 per cent in 1953 and to 33.7 per cent in 1963. Since crude activity rate is greatly influenced by the age composition of the population, the changing age structure of the population also accounted for some of this decline in over-all activity rate. During the years of rapid population growth, 1946-1963, the largest



Source: Pitiyage Wilson, *Economic Implications of Population Growth - Sri Lanka Labour Force 1946-1981* (Canberra, The Australian National University, 1975).

Figure 19. Percentage of the total population in the labour force (crude activity rates), 1946-1971

increase was in regard to children too young to be in the labour force. Thus between 1946 and 1963, the number of children below 15 years of age increased by about 80 per cent compared with an increase of only 44 per cent in the population of working age, 15-59 years. Consequently, the proportion of children in the total population increased from about 37 per cent in 1946 to 42 per cent in 1963 while the proportion of those in the working age decreased from 57 per cent to 52 per cent during the same period. The decline in over-all activity rates followed closely the decline in the proportion of working age population during the 1946-1963 period.

A further factor is the increase in the average age of entry into the labour force. It has been estimated that for males this average age increased from 17.0 years in 1946 to 17.3 years in 1963. ^{4/} "A change of a single year in the average age of entering the labour force can have a powerful effect... upon the overall ratio of the labour force to the population" ^{5/} Though the increase in the average age of entering the labour force was only 0.3 years, it tended to decrease the ratio of the labour force to the total population.

Between 1963 and 1971, however, there was an increase in the over-all activity rate by 2 percentage points reflecting largely the entry into the working age of those children born during the early period (the late 1940s) of rapid population growth in Sri Lanka. During this period, the proportionate share of the working age population increased by 3 percentage points while that of children aged 0-14 years dropped by the same number of percentage points.

It will also be observed from table 189 that while there has been a steady increase in the number of economically active males over the years, there was a slight decline in the number of economically active females between 1953 and 1963. An examination of the age distribution of the economically active females shows that between 1953 and 1963 there was a decline in the number of active females in the ages 10-14, 40-54 and 65 and over, and that these declines had more than offset the increases in the

^{4/} Pitiyage Wilson, *op.cit.*, p. 74. The average age of entering the labour force was calculated from the estimated entries in respective census years.

^{5/} J.D. Durand, *The Labour Force in the United States, 1890-1960* (New York, Social Science Research Council, 1948), p. 31 cited in *Economic Implications of Population Growth - Sri Lanka Labour Force 1946-1981*.

other age groups. It has been suggested that this decline in the absolute number of economically active females "is spurious due partly to the under-estimation of the number of unemployed in 1963." ^{6/}

In Sri Lanka, as noted earlier, only a very few children below 15 years are economically active. Further, the age of compulsory retirement in the public sector and in most private sector establishments has for long been 60 years. Hence it will be more appropriate and meaningful to examine the levels and trends in economic activity of those in the working age group, 15-59 years. Table 190 shows the growth of the total as well as the economically active population aged 15-59 years during the various intercensal periods from 1946 to 1971. It will be seen that the general activity rate, that is the activity rate for persons of working ages, is high, the rate for males being over 80 per cent and that for females being about 30 per cent. "As is to be expected, the changes in the labour force in this age group are more in consonance with changes in the corresponding population and the activity rates more stable. The separate statistics for the two sexes, however, show that whereas in the case of males, the differences in the relative increases in the population and labour force have decreased, they have become more pronounced in the case of the females who are a much smaller group in the labour force." ^{7/}

The foregoing analysis, however, indicates that the total economically active population increased from 2,611,500 in 1946 to 4,488,100 in 1971 representing an increase of about 72 per cent. This means that during this 25-year period, the economically active population or labour force increased by about 75,000 or at the rate of 2.1 per cent *per annum*. Although the data are not strictly comparable because of differences in definition and concepts used, the growth of the labour force cannot be questioned. It is the result partly of rapid population growth and partly of the large influx of females into the labour force.

It has been noted in chapter I that Sri Lanka experienced a rapid upsurge in its population growth during the years immediately following the Second World War due to drastic reduction in mortality. "Population increase due to declining mortality and high fertility affects the size of the workforce in

^{6/} Pitiyage Wilson, *op.cit.*, p. 73.

^{7/} CICRED, *The Population of Sri Lanka* (Colombo, Department of Census and Statistics, 1974), p. 64.

Table 190. Growth of population and economically active population aged 15-59 years, Sri Lanka, census years 1946, 1953, 1963 and 1971

Census years	Total population			Economically active population			Crude activity* rate
	Number	Percentage increase	Annual average growth rate	Number	Percentage increase	Annual average growth rate	
Both sexes							
1946	3,818,949	-	-	2,308,694	-	-	60.5
1953	4,445,697	16.4	2.19	2,673,624	15.8	2.12	60.1
1963	5,502,173	23.8	2.09	3,099,731	15.9	1.45	56.3
1971	7,745,212	40.8	4.23	4,407,410	42.2	4.36	56.9
Male							
1946	2,072,390	-	-	1,822,396	-	-	87.9
1953	2,398,773	15.7	2.11	2,044,820	12.2	1.66	85.2
1963	2,889,200	20.4	1.82	2,441,931	19.4	1.74	84.5
1971	4,018,116	39.1	4.08	3,263,069	33.6	3.57	81.2
Female							
1946	1,746,559	-	-	486,298	-	-	27.8
1953	2,046,924	17.2	2.29	628,804	29.3	3.74	30.7
1963	2,612,973	27.7	2.40	657,800	4.6	0.44	25.2
1971	3,727,096	42.6	4.40	1,144,341	74.0	6.94	30.7

Source: Same as table 189.

the short as well as long run. In the short-run, the decline in mortality results in an increase in the survival of the existing labour force. In the long run, the large number of births occurring as a result of high birth rates will tend to increase the number of persons seeking employment after about 15 years or so".^{8/} As can be noted from table 189, during the first two intercensal periods, 1946-1953 and 1953-1963, the growth of the total economically active population was lower than the growth of the total population. But during the 1963-1971 period the rate of growth of the economically active population was considerably larger than the rate of growth of the total population. This relatively high growth rate of the labour force arose because the children born during the early period of the rapid decline in mortality started to enter the labour force in increasing numbers in the mid-1960s.

It will also be noted that while the number of economically active males increased from 2,041,500

in 1946 to 3,312,500 in 1971 or by about 62 per cent, the number of economically active females registered an increase from 570,000 to 1,175,700 or by about 106 per cent during the same period. As a result the proportion of females in the total economically active population which was 21.8 per cent in 1946 increased to 26.2 per cent in 1971. The large influx of females into the labour force was partly responsible for the rapid growth of the economically active population.

2. Age-sex trends and patterns

The age-specific activity rate, or the rate calculated for a specific age group, is a more reliable measure of trends in economic activity since these rates are independent of the age structure of the population. The trend in age-specific activity rates by sex is shown in table 191.

During the period 1946-1971, there was no recognizable trend in the age-specific activity rates either for males or for females, except in the first (10-14) and the last (65 and over) age groups. Between 1946 and 1953, the activity rates for males in the age-groups 15-49 years show a declining trend while the

^{8/} S. Selvaratnam, "Impact of population growth on employment and training in Sri Lanka", *Report of the National Management Seminar on Population and Family Planning* (Colombo, Department of Labour, 1972), p. 30.

Table 191. Age-specific activity rates by sex, Sri Lanka, 1946-1971

Age group	Male				Female			
	1946	1953	1963	1971	1946	1953	1963	1971
10-14	14.1	10.5	8.1	6.0	11.8	9.9	4.3	3.9
15-19	59.2	46.5	46.2	48.3	24.3	27.7	21.6	26.7
20-24	83.3	81.4	84.4	88.9	23.8	28.7	29.3	43.1
25-29	95.0	94.5	94.1	96.9	26.3	28.6	27.7	40.2
30-34	99.3	95.1	96.5	97.7	28.8	30.1	25.0	35.2
35-39	98.4	95.8	96.8	97.5	31.1	32.3	25.9	32.9
40-44	99.0	95.3	96.1	96.8	33.7	34.6	25.9	30.8
45-49	97.5	95.4	95.7	95.7	33.4	35.6	26.0	29.5
50-54	92.9	93.8	92.9	92.3	28.4	35.8	21.4	24.7
55-59	86.5	91.2	87.8	81.1	32.6	34.1	17.5	17.6
60-64	81.4	84.2	76.7	66.2	22.8	30.1	11.4	11.0
65 +	83.1	67.8	52.2	42.6	23.1	23.1	6.0	5.6

Source: Computed from data of 1946, 1953, 1963 and 1971 Census of Population.

rates in the groups 50-64 indicate an increasing trend. Apart from the differences of definition in the enumeration of 1946 and 1953, "it may however be the case that participation rates were actually higher in 1946 than in 1953. Immediately following the Second World War, Colombo was the headquarters of the Supreme Allied Command for the South-east Asia Campaign. This may have had the effect of providing higher than usual opportunities for employment. Also overall participation rates may have been higher in 1946 than in 1953, owing to the presence of a larger proportion of immigrants in the former year. This would be the case if the immigrant population had a higher participation rate than the native population".^{9/}

Between 1953 and 1963, apart from a slight decrease of 0.3 per cent point in the age group 15-19 years and 0.1 per cent point in the 25-29 age group, the activity rates in all other age groups below 50 years recorded an increasing trend and those over 50 years recorded a declining trend. During the 1963-1971 period, the activity rates for males in the age group 15-44 increased, the rate for 45-49 remained unchanged and the rates for ages 50 and over decreased.

It will thus be seen that the differences in the activity rates for males in the age group 15-54 years are not significant. In particular, the age group 25-44, which is the most significant in the labour force, shows a fairly consistent high participation,

the lower rates reported for the group in 1953 being due to the exclusion at this census of the unemployed persons from the economically active category. The principal explanation for the slight changes in the participation rates of those aged 15-54 during the 25-year period lies in the variations in the definitions and their application by enumerators as well as in other limitations of data. However, the rapid declining trend in respect of those aged 10-14 years during 1946-1971 and of those aged 55 years and over between 1963 and 1971 cannot be entirely attributed to the variations in the definitions or to other limitations.

The declining trend in the male activity rates of the 10-14 age group has largely to be explained in terms of government policy which has aimed at keeping children below 14 years of age in school and discouraging them from participating in paid employment. Since 1945 all education in Sri Lanka from the kindergarten to the university was declared free. Though not strictly enforced, regulations still exist to make attendance at school between the ages 6 and 14 compulsory. The Employment of Women, Young Persons and Children Act, No. 47 of 1956, totally prohibits the employment of children below 12 years of age in any occupation even by their parents.^{10/} As a result the school enrolment ratios for the 5-14 age group has shown marked increases between 1946 and 1971.

^{10/} According to this Act, children between 12 and 14 years of age may be employed in family undertakings provided they belong to the family running the undertaking. There are, however, certain specified undertakings in which children between 12 and 14 may not be employed even if they are family undertakings.

^{9/} R.M. Sundrum, V.R. Rao and S. Selvaratnam, *Manpower Resources of Ceylon 1956-1981* (Colombo, Planning Secretariat, 1959), p. 11.

The steep downward trend in the participation rate of males aged 55 years and over between 1963 and 1971 is due to two factors, (a) the effect of unemployment, and (b) the changing attitudes towards the retirement age. The proportion of unemployed males at all ages recorded an increase from 7.3 per cent in 1963 to 14.3 per cent in 1971. It was also reported that nearly 197,000 among these unemployed males were actively seeking work for more than two years in 1971. "If a person cannot find a job within two years and the unemployment rate is extremely high — in other words, no hope of success in the near future — it is reasonable to assume that particularly the persons in older age groups are discouraged from reporting that they are still seeking work. They are certain that they will not be able to compete with the younger persons when the scarce job opportunities are being filled. Moreover, they know that the employers' preferences are with the physically capable young persons."^{11/}

In 1971, the compulsory retirement age for employees in the public sector was reduced by five years with a view to speeding up the absorption of the unemployed. Though data are not available to estimate the effect of this policy decision on the labour force, it can nevertheless be assumed that this policy would have tended to lower the activity rates, particularly in the 55-59 age group.

The trend in the age-specific activity rates for females is slightly different from that of males. The female activity rates in the age groups 15 and over indicate an increasing trend between 1946 and 1953, whereas in the case of males, as noted earlier, there was a decline in the rates for age groups 15-49 between these two years. The increase in female participation rate in 1953 could to some extent be explained by the fact unpaid family workers, 56 per cent of whom were females, were included in the 1953 enumeration of the gainfully occupied population but excluded in the 1946 enumeration. During the subsequent decade, 1953-1963, there was a decline in the female participation rates in practically all age groups. But between 1963 and 1971 the rates displayed steeply increasing trends. This is partly because of the under-estimation of the economically active population, particularly females, in the 1963 census.

The pattern of participation in economic activity for males is generally identical in most countries, though there are significant differences in the activity rates of the younger and older age groups. The activity rates increase steeply with age up to the mid-twenties and remain almost constant at a high level

(around 97 per cent) until the early fifties. Thereafter, activity rates decline, first gradually and then more rapidly. The pattern of male participation in economic activity in Sri Lanka is shown in figure 20. There is no major difference between the general pattern of the participation curves during the period 1946-1971. In 1946 and in 1971, the activity rates increased until the mid-thirties, whereas in 1953 and 1963 they increased until the late thirties. Until the early fifties, activity rates remained more or less constant at high levels, declining thereafter, the decline in 1971 being more rapid than in the earlier three years. It may, however, be noted that the participation curve in 1946 is characterized by sudden increases at ages 30-34, 40-44 and 65 and over.

The pattern of female participation in economic activity is shown in figure 21. It will be seen that the participation curves for 1946 and 1953 followed an almost similar pattern except for the sudden increase at 55-59 in 1946. The rates rose steeply at first, then gradually after which they declined. The highest participation rate in 1946 was in respect of the 40-44 age group, while in 1953 it occurred 10 years later in the 50-54 age group. There was a slight dip in the curves in mid-twenties in 1946 and late twenties in 1953.

Compared to the patterns obtaining in 1946 and 1953, the 1963 pattern of female participation in economic activity reflects a transitional stage. The 1963 curve was characterized by two peaks, the first occurring at ages 20-24 and the second at ages 45-49. In 1971, however, there is only one peak in the age group 20-24 followed by an over-all declining trend, first rapidly until the ages 35-39 and thereafter slowly in the 40-49 ages and again rapidly in subsequent age groups. The 1963 pattern of female labour force participation is different from that prevalent in developed countries where female labour-force participation is generally very responsive to marital and maternal status. In these countries, females enter the labour force before marriage raising activity rates in the younger age groups (around 20). In the next few age groups there is a decline in female activity rates as married women tend to leave the labour force because of increasing family responsibilities. The rise to the second peak reflects the growing freedom of middle-aged mothers from maternal cares as their children grow older. Finally the rates decline because of old age retirement. This four-phased cyclical pattern is hardly discernible in the 1963 participation curve of Sri Lanka. Whereas in developed countries during the first two phases, female activity rates are characterized by rapidly increasing and decreasing trends, in Sri

^{11/} Pitiyage Wilson, *op.cit.*, p. 86.

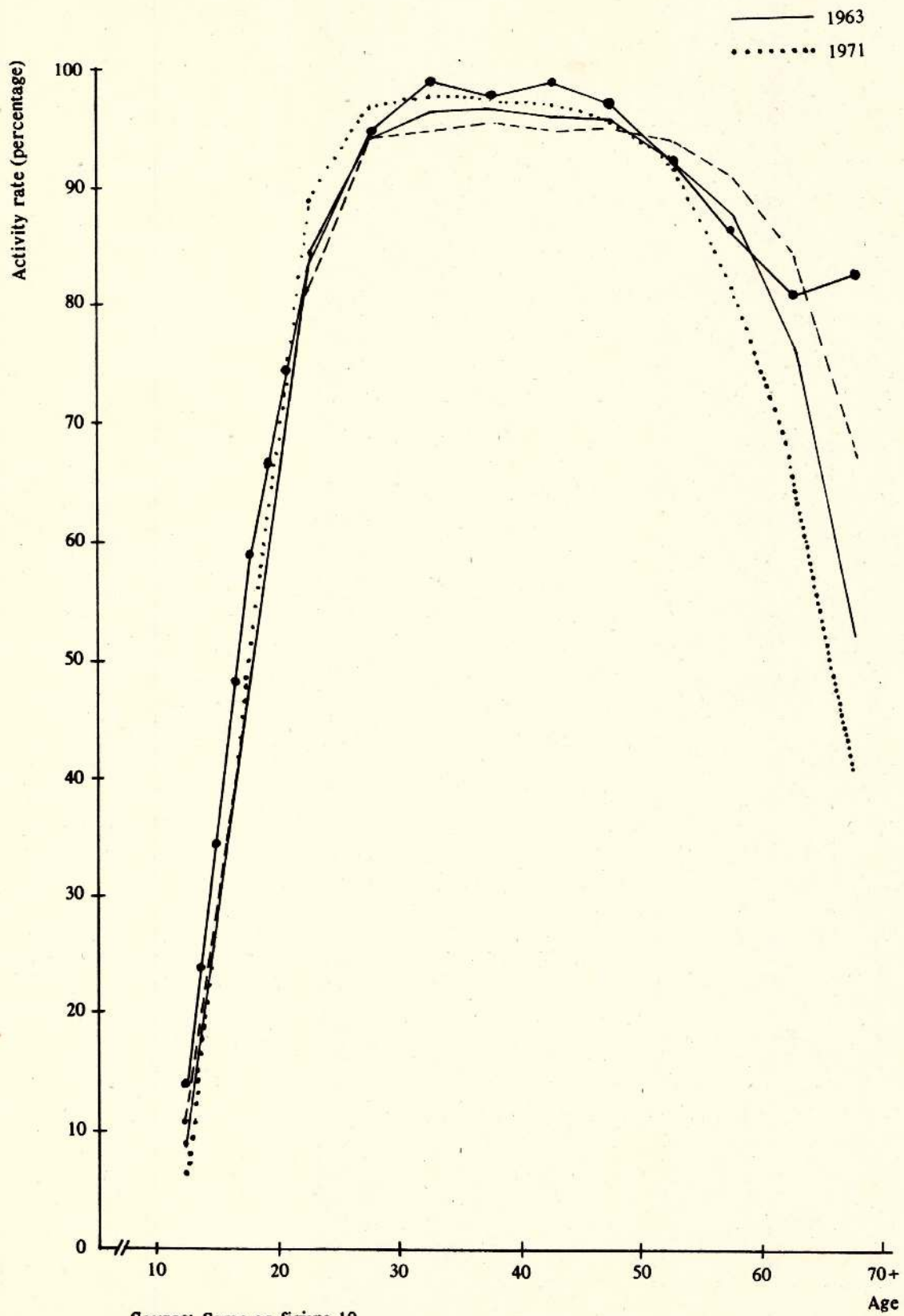
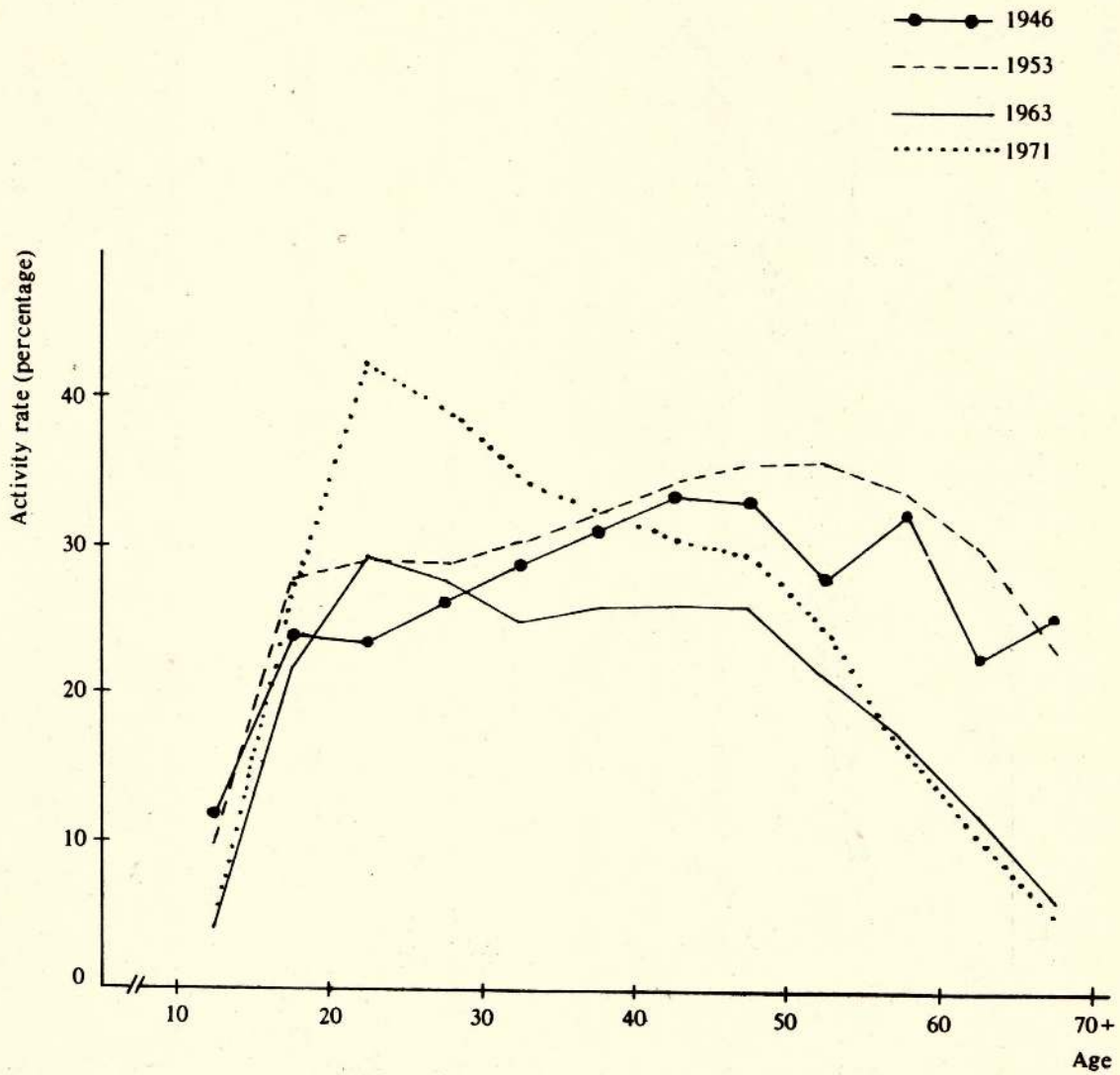


Figure 20. Pattern of labour force participation, male, 1946-1971



Source: Same as figure 19.

Figure 21. Pattern of labour force participation, female, 1946-1971

Lanka they are characterized by very slight decreasing and increasing trends. This may be due to two factors. First, the majority of the females are engaged in agricultural occupations which are affected relatively little, if at all, by the changing maternal responsibilities at different ages in the life cycle. Secondly, most of the household duties, including the bringing up of small children, may be assigned to household relatives or domestic servants.^{12/}

The more sophisticated characteristics in the pattern of female labour force participation in Sri Lanka reflects largely the socio-economic changes in the country. It would appear that during the 1946-1953 period, women's responsibilities were largely limited to household duties while the custom of keeping marriageable daughters at home predominated. But when these young women married and started to have children, the need for additional income would have compelled these women to enter the labour force, thereby raising the female participation rates even during the child-bearing period in 1946 and 1953. Since 1950, however, there were changes in the social status of women as a result of

the wider spread of education. These changes had their effects on female labour-force participation as well. The 1971 participation curve, however, did not follow the 1963 pattern. This does not mean that maternal status had no effect on female participation in 1971. It might be that increasing unemployment might have offset the effect of maternal status. The re-entry of females who had left the labour force after their marriage might have been discouraged by the lack of suitable employment opportunities and the high unemployment rates.

3. Urban-rural differentials

The age-sex specific activity rates for urban and rural areas in 1963 and 1971 are given in table 192. It will be seen that the over-all participation rates for males in both years are almost equal, 68-69 per cent, in the rural as well as urban areas. However, in 1963 the rural rate was 0.5 percentage points higher than the urban rate, while in 1971 the urban rate was 0.6 percentage points higher than the rural rate. But in regard to the females, the over-all rates for rural areas have been significantly higher (7.2

Table 192. Age-sex specific activity rates in urban and rural areas, Sri Lanka, 1963 and 1971

Age group	Male				Female			
	Urban		Rural		Urban		Rural	
	1963	1971	1963	1971	1963	1971	1963	1971
10 - 14	9.5	7.3	7.8	5.7	4.9	4.5	4.1	3.8
15 - 19	40.8	46.1	47.8	49.0	11.8	20.4	24.0	28.4
20 - 24	80.6	86.7	85.6	89.7	20.9	35.2	31.2	45.4
25 - 29	93.4	95.7	94.3	97.4	20.7	33.0	29.3	42.3
30 - 34	95.3	97.0	96.9	97.9	18.5	28.2	26.6	37.2*
35 - 39	95.4	97.0	97.1	97.6	16.9	25.3	27.9	35.0
40 - 44	95.1	95.8	96.3	97.1	17.0	23.7	28.1	32.9
45 - 49	93.9	94.5	96.1	96.0	16.9	21.1	28.0	31.9
50 - 54	90.7	90.1	93.3	93.1	15.7	18.7	22.7	26.5
55 - 59	83.5	73.4	88.8	83.3	12.6	13.7	18.7	18.7
60 - 64	66.6	53.8	79.0	60.6	10.2	10.8	11.8	11.1
65 +	45.8	34.1	53.5	44.7	6.1	6.8	6.0	5.2
All ages	68.8	68.9	69.3	68.3	14.2	21.1	21.4	27.4

Source: Department of Census and Statistics.

^{12/} It has been observed that 56 per cent of the female factory workers in Colombo left their children under the supervision of household relatives and older brothers or sisters. B. Ryan and S. Fernando, "The female factory worker in Colombo", in *International Labour Review*, vol. 64, No. 4 (1951), pp. 459-460.

percentage points in 1963 and 6.3 percentage points in 1971) than the corresponding urban rates.

The relatively higher female activity rate in rural compared with urban areas is partly due to the reporting of women in farm households as unpaid family

Table 193. Age - and sex-specific economic activity rates for selected countries, censuses around 1970

Age group	Hong Kong	Indonesia	Japan	Republic of Korea	Peninsular Malaysia	Nepal	Philippines	Singapore	Sri Lanka	Thailand	Argentina	Brazil	Morocco	United States of America	Czechoslovakia	Sweden	Switzerland	United Kingdom
15-19	T	53.3	38.7	36.1	42.8	42.4	36.1	49.5	37.6	77.3	46.0	42.8	38.3	30.1a/	38.4	31.1	60.8	58.3
	M	50.4	48.9	36.5	45.9	52.3	46.5	55.7	48.3	77.4	60.8	62.1	58.9	35.1a/	35.1	32.9	62.8	60.8
	F	56.4	28.6	35.0	40.3	32.7	46.2	26.9	43.0	26.7	77.2	31.1	24.4	16.6	25.0b/	42.0	29.3	58.7	55.6
20-24	T	80.2	51.8	77.2	47.1	63.8	48.7	73.5	66.2	84.0	64.9	57.9	47.7	68.9	85.1	57.8	79.7	75.3
	M	90.2	76.5	83.6	50.3	86.9	70.4	92.9	80.9	88.9	88.6	88.6	85.2	80.9	90.9	62.0	87.8	90.1
	F	69.5	31.8	69.2	43.9	41.7	39.2	29.6	53.6	43.1	79.0	43.6	28.7	13.5	56.1	79.1	71.4	60.3
25-29	T	73.4	59.3	71.5	58.6	65.5	57.5	64.5	68.7	86.8	65.7	57.6	48.4	68.7	88.8	67.7	74.4	70.4
	M	97.9	90.5	98.2	85.7	93.4	95.1	83.8	96.9	95.4	95.8	94.2	95.2	92.9	98.5	85.0	96.1	97.0
	F	43.2	34.1	44.4	31.7	38.2	36.6	31.9	30.8	40.2	36.2	22.8	11.1	45.4	78.9	49.0	51.1	43.3
30-34	T	70.7	63.1	72.9	66.2	66.2	55.9	60.6	67.5	87.5	64.3	58.6	48.2	69.1	89.1	68.6	72.0	72.2
	M	98.8	92.2	98.6	95.6	94.3	96.7	98.3	97.7	96.5	97.7	96.8	96.9	95.0	98.8	91.2	98.7	98.4
	F	36.3	37.8	46.8	36.3	38.8	33.9	32.3	22.7	35.2	78.7	31.6	21.2	9.9	79.4	44.5	43.3	45.4
35-39	T	70.0	66.9	77.5	69.5	66.2	61.9	60.3	65.6	88.3	63.8	57.2	52.4	71.2	89.6	71.7	72.0	76.7
	M	98.7	93.8	98.5	96.6	94.1	97.4	98.4	97.5	96.6	98.1	95.3	97.1	95.1	98.4	92.7	98.9	98.4
	F	37.8	40.3	55.9	43.1	39.8	34.0	34.8	19.3	32.9	80.1	29.1	20.4	10.9	81.0	50.0	43.7	54.6
40-44	T	70.4	67.7	81.0	70.2	66.3	61.6	60.8	66.2	88.5	62.2	57.4	52.6	72.8	88.8	74.1	71.9	79.4
	M	98.5	92.9	98.3	95.9	93.1	92.2	97.4	96.8	96.6	97.4	93.9	96.2	94.6	97.6	93.1	98.8	98.3
	F	39.5	42.6	63.6	47.2	39.8	32.9	36.4	17.8	30.8	80.3	27.0	20.3	13.2	80.4	55.0	45.2	60.5
45-49	T	69.4	68.7	79.9	71.4	65.5	69.7	60.0	64.7	87.8	59.8	55.9	57.5	72.5	86.5	74.0	71.6	79.9
	M	97.7	91.6	98.1	95.2	91.4	96.8	96.2	95.7	95.9	95.4	92.3	94.5	93.5	96.0	92.9	98.3	98.0
	F	39.2	44.2	64.3	48.6	40.5	32.5	35.3	17.5	29.5	79.6	25.1	52.9	14.8	77.7	55.0	45.8	62.1
50-54	T	68.0	64.9	77.2	68.3	61.8	57.0	55.0	61.4	83.5	55.9	52.5	56.7	71.0	81.4	71.2	69.8	77.7
	M	95.4	88.0	97.3	91.9	86.6	94.0	88.1	92.3	93.5	91.1	87.7	91.7	91.4	93.2	91.9	97.0	97.3
	F	38.6	42.3	60.5	45.2	36.4	30.5	33.2	17.5	24.7	73.9	22.0	16.5	52.0	70.5	50.3	43.4	59.1
55-59	T	62.4	62.2	72.6	61.2	53.3	55.0	46.2	52.5	77.4	47.0	48.8	62.2	66.2	59.8	64.6	66.2	72.5
	M	89.1	84.3	94.2	85.4	75.4	82.4	73.9	81.1	89.3	79.8	82.6	88.8	86.8	85.0	88.4	94.8	95.3
	F	36.0	39.8	53.4	39.1	29.0	27.7	30.2	16.2	17.6	65.9	16.1	14.2	22.4	37.0	41.1	39.8	51.2
60-64	T	52.1	53.9	63.3	45.5	45.1	50.3	35.0	42.0	60.6	32.8	42.7	33.8	53.4	25.4	50.2	56.6	55.6
	M	77.1	77.8	85.8	67.9	65.0	64.1	75.9	66.2	74.6	56.4	73.5	63.0	73.0	33.3	75.7	87.3	86.6
	F	31.4	33.1	43.1	26.9	23.5	17.9	25.9	13.4	11.0	47.5	10.2	11.4	7.6	18.5	25.7	30.3	28.2
65+	T	21.6	40.8	34.9	30.7	29.8	33.9	17.7	25.7	31.5	15.4	27.0	19.3	16.2	9.0	8.6	18.9	11.4
	M	39.8	60.5	54.4	49.6	45.7	53.0	31.9	42.6	44.6	28.4	49.8	33.4	24.8	14.6	15.2	32.2	19.3
	F	12.6	22.8	19.6	17.2	12.8	10.4	15.5	6.5	5.6	21.2	4.6	6.3	3.8	5.2	3.2	9.9	6.4
15+	T	64.0	57.1	67.1	56.2	57.2	51.7	56.5	56.9	80.3	53.4	49.4	45.6	55.5b/	63.4	53.2	62.6	61.2
	M	84.7	80.4	84.3	74.8	78.9	74.2	82.3	81.2	87.6	81.1	79.4	80.0	72.9b/	73.2	69.4	84.3	81.4
	F	42.8	35.6	50.3	36.9	35.6	34.3	30.2	29.5	30.7	73.2	26.5	20.1	12.6	54.4	37.3	41.9	42.8

Source: United Nations, Demographic Yearbook, 1973 (Sales No. E/F.74.XIII.1); Unpublished Data of the Sri Lanka 1971 Census, Department of Census and Statistics, Colombo.

Notes: a/ Refers to age group 14-19 years.
b/ Refers to ages 14 and above.

workers in agricultural work. For instance, at the 1971 census, of the 90,528 women reported as unpaid family workers, as many as 88,333 or 97.6 per cent were from rural areas. Nearly 88 per cent of the rural female unpaid family workers were reported as engaged in agriculture and related industry. It was also noted that in 1971, while in urban areas unpaid family workers constituted about 2 per cent of the total employed females, in the rural areas this proportion was as high as 12.6 per cent. Further, opportunities for self-employment is greater in the rural than in urban areas and this is clearly brought out by the fact that in 1971, nearly 12 per cent of all employed females in the rural areas were "workers on own account", the corresponding proportion in urban areas being 5.3 per cent. Consequently, the proportion of females in the 1971 total economically active population was 20.7 per cent in urban compared to 27.8 per cent in rural areas.

A more significant reason is that the rural areas also include the estate sector in which the level of female labour-force participation is very high. For instance, according to the 1968 Labour Force Survey, nearly 64 per cent of the females aged 10 years and over in the estate sector were economically active. The corresponding rate for the urban and rural areas (excluding estate) were three to four times less than the estate sector. It is noteworthy that the participation rate for females in the estate sector was almost similar to the participation rates for urban as well as rural males.

The age-specific activity rates show that for both males and females in the age group 10-14 years, the urban rates are higher than the rural rates. In all other age groups, the rural rates are higher than the urban rates except for females aged 65 years and over. For males, the peak activity rates in both urban and rural areas are in respect of the ages 30-39 years while for females the peak is in the 20-24 age group.

4. International comparison

The age-specific economic activity rates for Sri Lanka are compared with those for some selected countries in table 193. It should, however, be noted that a strict comparison of these rates is not possible on account of variations from country to country in the definitions and concepts used as well as in the methods of enumeration.

The over-all activity rate of the total population aged 15 years and over for Sri Lanka is 56.9 per cent and this rate is almost equivalent to corres-

ponding rates in Indonesia (57.1 per cent), Republic of Korea (56.2 per cent) peninsular Malaysia (57.2 per cent) and Singapore (56.5 per cent) all of which are developing countries in the ESCAP region. However this rate is considerably lower (23 percentage points) than the rate for Thailand and significantly lower (10 percentage points) than the rate for Japan, and lower than the rate for Hong Kong by 7 percentage points and that for Nepal by 4 percentage points. In comparison with countries in the other regions, the Sri Lankan rate is higher than the rate for Argentina, Brazil, Morocco, the United States of America and Sweden but lower than the rates for Czechoslovakia, Switzerland and the United Kingdom.

The pattern of male-age specific activity rates for Sri Lanka appears to be similar to those in other countries in that the highest rates are found in respect of the age groups 25-29 through 45-49 years. The activity rate for all males aged 15 years and over in Sri Lanka is higher than the corresponding rate for Indonesia, Republic of Korea, peninsular Malaysia and the Philippines among selected ESCAP countries. The Sri Lankan rate is at almost the same level as the rates for Argentina, and the United Kingdom and significantly higher than the rate for the United States of America, Czechoslovakia and Sweden among selected countries in other regions.

The over-all economic activity rate of 30.7 for Sri Lankan females aged 15 years and over is almost equivalent to the rate obtaining in the Philippines, higher than the rates for Singapore, Argentina, Brazil and Morocco, but lower than the rates for other selected countries included in table 193. The pattern of female economic activity rate in Sri Lanka with the highest rate in the age group 20-24 years is similar to the patterns obtaining in Hong Kong, Japan, peninsular Malaysia, Singapore, Argentina and the United States of America. However, the level of the activity rate for Sri Lankan females aged 15 years and over is lower than the rates obtaining in all these countries except peninsular Malaysia and Brazil.

C. EMPLOYED POPULATION

1. Introduction

The economically active population includes, as noted earlier, the employed as well as the unemployed persons. The employed category is usually defined to include: (a) employer or person who either operates his own business or is engaged independently in a profession or trade for profit and employs in

connexion with his business one or more workers other than unpaid family workers or apprentices; (b) worker on own account or person who operates his business alone or is engaged independently in trade or profession for fees or profit and has no employees in his business other than unpaid family workers: a worker on own account is also referred to as self-employed person; (c) paid worker or person who works for public or private employers and receives remuneration for his work in money wages, salary, commission, gratuities, piece rates or in kind: a paid worker is also referred to as an employee; and (d) unpaid family worker or a person who works without pay of any kind in a business operated by any member of the household excluding house-

The relative share of the employed and the unemployed in the total economically active population of 1963 and 1971 is shown in table 194. It will be seen from this table that while in 1963, the employed category consisted of 92.4 per cent of the total economically active persons, in 1971 this proportion had declined to 81.3 per cent. Consequently, there was an increase in the proportion unemployed from 7.6 per cent in 1963 to 18.7 per cent in 1971. The changes are more marked in the case of the economically active females in respect of whom the proportion employed registered a substantial decline from 91.1 to 68.9 while the proportion of unemployed rose from 8.9 per cent to 31.1 per cent during the 1963-1971 period.

Table 194. Economically active population aged 10 years and over by sex and activity status, 1963 and 1971

Sex and year	Economically active persons		Employed persons		Unemployed persons	
	Number	Percentage	Number	Percentage	Number	Percentage
Both sexes						
1963	3,451,707	100.0	3,189,322	92.4	262,385	7.6
1971	4,488,139	100.0	3,648,875	81.3	839,264	18.7
Male						
1963	2,736,046	100.0	2,537,194	92.7	198,852	7.3
1971	3,312,469	100.0	2,838,404	85.7	474,065	14.3
Female						
1963	715,661	100.0	652,128	91.1	63,533	8.9
1971	1,175,670	100.0	810,471	68.9	365,199	31.1

Source: Unpublished data of the 1963 and 1971 Censuses, Department of Census and Statistics.

keeping. The unemployed consists of those persons who are able and willing to work but who are not at work during the period of inquiry but are actively looking for work.

As mentioned earlier, the definition of the economically active population in 1946 excluded the unpaid family workers and the first time job-seekers or unemployed with no previous employment experience. In the 1953 Census though unpaid family workers were included, the first time job seekers were still excluded from the definition of the economically active population. However the definition of unemployed adopted at the 1963 and 1971 censuses included both categories of unemployed and the unpaid family workers in the economically active category. Thus only the 1963 and 1971 census data on economically active population provide a reliable basis for comparative analysis of employment trends and characteristics.

2. Employment trends

In view of the limitations of the data referred to in the preceding section, it is difficult to study with any degree of precision the growth of employment over time. However, the following discussion based mainly on census data presents some salient features of trends in employment growth during the 25-year period, 1946-1971. It will be noted from table 195 that the number of employed persons increased from 2,611,500 in 1946 to 3,648,900 in 1971 or by 39.7 per cent during this 25-year period. However, the growth of the employed population has not been uniform during the three intercensal periods. While between 1946 and 1971, the total employed population grew at an average annual rate of 1.32 per cent, the rate of growth has shown marked fluctuations from one intercensal period to another.

The employed male population increased by 39

Table 195. Growth of employed population by sex, 1946-1971

Census year	All employed persons			Employed males			Employed females		
	Number	Percentage increase	Annual growth rate	Number	Percentage Increase	Annual growth rate	Number	Percentage increase	Annual growth rate
1946	2,611,524	-	-	2,041,524	-	-	570,000	-	-
1953	2,993,349	14.6	1.97	2,268,740	11.1	1.52	724,609	27.1	3.49
1963	3,189,322	6.5	0.62	2,537,194	11.8	1.09	652,128	-10.0	-1.02
1971	3,648,875	14.4	1.64	2,838,404	11.9	1.37	810,471	24.3	2.67

Source: Based on data from 1946, 1953, 1963 and 1971 Censuses of Population.

per cent from 2,041,500 in 1946 to 2,838,400 in 1971. The annual rate of growth of the male employed population has varied from a low of 1.09 per cent during 1953 to 1963 to a high of 1.52 per cent during 1946-1953 period. The proportion of males in the total employed population has also varied from 78.2 per cent in 1946, to 75.8 in 1953, 79.5 in 1963 and 77.5 per cent in 1971.

There has, however, been very significant fluctuations in the growth of the employed female population, the number of employed females recording a decline by about 10 per cent between 1953 and 1963. This decline "was due to a shift of workers in the categories of own account workers and unpaid family workers to home duties. In 1963, the census was taken in July and the census of 1946 and 1953 in March and the Census of 1971 was taken in October and the information would have been recorded at the preliminary censuses held a month or so earlier in each case. The information of the 1963 Census would therefore have been recorded in the month of June which is a slack month for agricultural activity, whereas for the other three censuses the information would have been recorded in months in which agricultural activity is high."^{13/} A partial explanation for

the fall in the number of employed females in 1963 therefore may be that women who were seasonal workers were reported as attending to home duties if at the time of the census they were not actually at work. This is evident from the fact that between 1953 and 1963, while there was an increase in the number of female paid employees engaged in agricultural occupations, there was a decline in the number of female own account workers and unpaid family workers. Further among those females aged 20-59 years, reported as economically inactive, those engaged in home duties constituted 67.6 per cent in 1963 as against 60.7 per cent in 1971. Another factor may be the displacement of workers from employment as industry became organized and traditional methods and crafts were supplanted.^{14/} Between 1963 and 1971 (the two censuses with apparently the same definitions of employed population), the number of females employed increased significantly by about 24 per cent or at the rate of 2.67 per cent *per annum*.

The growth of the employed population between 1953 and 1971 by rural and urban areas is indicated in table 196. During this period, while the total of employed population increased by 21.9 per cent, the employed population in rural areas increased by 13.2

Table 196. Growth of employed population by rural and urban areas, 1953-1971

Census year	All employed persons			Employed - rural areas			Employed - urban areas		
	Number	Percentage increase	Annual growth rate	Number	Percentage increase	Annual growth rate	Number	Percentage increase	Annual growth rate
1953	2,993,349	-	-	2,534,114	-	-	459,235	-	-
1963	3,189,322	6.5	0.62	2,580,141	1.8	0.17	609,181	32.7	2.78
1971	3,648,875	14.4	1.64	2,867,689	11.1	1.29	781,186	28.2	3.06

Source: Based on data from 1953, 1963 and 1971 Censuses of Population.

^{13/} *The Population of Sri Lanka, op.cit.*, p. 69.

^{14/} Most of the loss between 1953 and 1963 under agricultural occupations in the categories of own account workers and unpaid family workers had been made up in 1971.

per cent while that of urban areas increased by 70.1 per cent. Thus the percentage growth in the number of employed persons in urban areas was substantially greater than the percentage growth in rural areas. The disparity in the growth of the employed population between urban and rural areas was more marked between 1963 and 1971 when urban employed population increased at an average rate of 3.06 per cent *per annum*, the corresponding rate for rural areas being only 1.29 per cent.

It will also be noticed that the share of the rural

had 37 new town councils created during the 1963-1971 intercensal period with a total population of about 403,000. Also between 1953 and 1971, the growth of the urban population was faster than that of the rural population.

3. Age composition of employed population

The percentage distribution of the employed population by age and sex in census years from 1946 to 1971 is shown in table 197. It will be observed that

Table 197. Percentage distribution of employed population by age and sex, 1946-1971

Sex and census year		10-14	15-24	25-34	35-44	45-64	65 and over	Total
All island								
Both sexes	1946	4.0	24.5	25.5	21.0	20.0	5.0	100.0
	1953	3.2	23.1	26.4	20.5	22.3	4.5	100.0
	1963	2.1	22.1	26.2	22.2	23.9	3.5	100.0
	1971	1.4	23.3	26.4	22.1	23.4	3.5	100.0
Male	1946	2.9	23.9	26.3	21.4	20.4	5.1	100.0
	1953	2.2	21.6	27.5	21.2	23.0	4.5	100.0
	1963	1.7	20.0	26.2	22.6	25.5	4.0	100.0
	1971	1.2	21.3	26.0	22.2	25.2	4.1	100.0
Female	1946	8.1	26.6	22.8	19.6	18.7	4.2	100.0
	1953	6.1	27.7	23.1	18.5	20.3	4.3	100.0
	1963	3.7	31.0	26.0	20.0	17.3	1.4	100.0
	1971	2.2	30.2	27.5	21.6	17.4	1.1	100.0
Urban								
Both sexes	1963	2.5	21.5	28.9	22.2	22.4	2.5	100.0
	1971	1.7	22.1	29.3	22.6	21.9	2.4	100.0
Male	1963	1.9	22.2	28.4	22.4	22.6	2.5	100.0
	1971	1.3	21.5	29.2	22.7	22.7	2.6	100.0
Female	1963	6.4	25.8	27.3	19.3	19.0	2.2	100.0
	1971	4.1	25.7	29.9	21.7	17.1	1.6	100.0
Rural								
Both sexes	1963	2.1	22.3	25.6	22.2	24.1	3.7	100.0
	1971	1.3	23.6	25.6	21.9	23.8	3.8	100.0
Male	1963	1.7	19.6	25.5	22.6	26.3	4.3	100.0
	1971	1.1	21.2	25.0	22.1	25.9	4.6	100.0
Female	1963	3.3	31.7	25.9	20.8	17.1	1.2	100.0
	1971	1.9	30.9	27.2	21.6	17.4	1.0	100.0

Source: Computed from the data of the 1946, 1953, 1963 and 1971 Censuses of Population.

employed population in the total employed population declined over the years while that of the urban employed population recorded an increase. The decline of the proportion of rural employed persons can largely be explained by the elevation of some rural areas to urban status at successive censuses. For instance, as noted in chapter IV, the 1971 census

in all census years, the proportion of all employed persons increased with age until the age group 25-34 years, after which it declined with increasing age. A similar pattern is particularly apparent among employed males but in the case of the employed females, the highest concentration was in the 15-24 age group, reflecting the effect of marital status. It has, how-

ever, to be noted that this is true only for the rural areas; in urban areas the proportionate age distribution of employed females was the same as that of employed males. The urban-rural differences in the distribution of employed females may demonstrate the tendency among rural females to enter marriage at an earlier age as compared with the urban females.

Table 198 shows the age-specific employment

male rates were more marked. Except in the age group 10-14 years, the age-specific female employment rates in all other age groups in the rural areas were substantially higher than the corresponding urban rates. This is largely due to two factors. "Firstly, in Sri Lanka rural labour force includes the estate sector, which has a higher employment potential for women. Secondly, work performed by rural women is primarily in agricultural production or small-

Table 198. Age-specific employment rates, 1963 and 1971

Age group	All island			Urban			Rural			
	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female	
					1963					
10-14	68.9	70.6	65.8	75.1	76.4	72.9	67.3	69.1	64.2	
15-24	69.5	72.3	63.4	63.3	72.0	38.8	71.1	72.4	68.3	
25-34	89.3	91.7	81.0	86.0	90.7	63.5	90.2	92.1	84.4	
35-44	96.1	96.3	95.1	92.8	94.4	82.3	96.9	96.8	97.0	
45-64	95.1	95.9	91.3	90.3	91.4	82.1	96.3	96.9	92.9	
65+	85.8	88.3	65.0	72.4	73.8	63.0	88.4	91.1	65.5	
Total	85.8	88.3	77.3	81.3	86.1	59.3	87.0	88.9	80.7	
					1971					
10-14	63.2	66.8	58.2	64.1	66.3	60.5	63.0	67.0	56.8	
15-24	62.8	67.1	54.3	56.6	63.8	36.0	64.6	68.2	58.1	
25-34	83.8	88.6	70.9	81.2	87.7	56.4	84.6	89.0	74.2	
35-44	93.3	95.3	86.8	89.6	93.7	69.9	94.4	95.8	90.3	
45-64	94.4	96.2	86.2	89.5	93.3	67.6	95.7	97.0	90.1	
65+	91.6	94.6	64.6	80.0	86.3	47.3	94.0	96.2	71.3	
Total	81.3	85.7	68.9	76.6	83.0	52.4	82.7	86.6	72.6	

Source: Computed from the unpublished data of the 1963 and 1971 Censuses of Population.

rates, or the proportion of persons employed to total economically active persons in specified age group, for males and females in 1963 and 1971. It will be observed that the proportion employed declined from 86 per cent in 1963 to 81 per cent in 1971, reflecting an increase in the proportion of unemployed during this period. For the country as a whole, the age-specific employment rates for males in all age groups exceeded the corresponding rates for females. In 1971, the highest proportion of employed males was in the age group 45-64 years while for females it was in the 35-44 age group.

There were also significant differences between the urban and rural age-specific employment rates, the proportion employed in the rural sector being more than that of the urban sector. In 1963, the proportion of the rural employed persons exceeded that of the urban employed persons by 5.7 percentage points; the corresponding difference in 1971 being 6.1 percentage points. There was little difference between the urban and rural age-specific employment rates for males but the differences in regard to fe-

scale industries, very often on a part-time or seasonal basis, and as unpaid family helpers. Under such circumstances, women who report themselves as economically active are, generally, those who are 'employed'. Those 'unemployed' by definition would more often than not report themselves, as 'not in the labour force.'^{15/}

4. Industrial classification

The type of economic activity that an employed person performs can be looked at from the point of view of (a) the industry or the activity of the establishment in which an economically active person works during the time reference period; (b) occupation or the kind of work done during the time reference period; and (c) status as employee, own account worker or unpaid family worker. In Sri Lanka, a classification of the data on employed population in terms of these major categories was first carried out in the 1953 census. However, because of the changes in the methods of classification by industry

15/ Pitiyage Wilson, *op.cit.*, pp. 115-116.

and by occupation, the data of the three censuses which were held since 1953 are not strictly comparable. In order to effect a comparison, the distribution of the employed population by various major industrial on occupational groups has been reduced in this study to a few broad categories.

In regard to industry, the employed population are classified into three broad industrial sectors, viz., primary, secondary and tertiary. Each sector represents the following major divisions:

Primary: comprising the major divisions agriculture, forestry, hunting and fishing;

Secondary: comprising the major divisions, mining and quarrying, manufacturing and construction;

Tertiary: comprising all other major divisions, electricity, gas, water and sanitary ser-

vices, commerce, transport, storage and communication and other services.

The distribution of the employed population by the three broad industrial sectors and by rural and urban areas is shown in table 199. It will be seen that about 50 per cent of all employed persons were engaged in the primary sector. The tertiary sector engaged the second largest number - nearly 30 per cent in all years - while the balance were employed in the secondary sector. It will also be noted that the proportion of the females employed in the primary sector was higher than that of males, but in the other two sectors a higher proportion of males were employed except in the tertiary sector in urban areas. The nature of work in the estate sector with heavy concentration on female labour and the presence of a substantial number of female unpaid family workers in traditional agriculture are the chief factors responsible for a higher percentage of female workers in the primary sector.

Table 199. Percentage distribution of employed population by major industrial sector and sex, 1953-1971

Sex	Year	Primary	Secondary	Tertiary	Unspecified	Total
All island						
Both sexes	1953	52.9	12.5	28.0	6.6	100.0
	1963	52.6	12.8	29.1	5.5	100.0
	1971	50.4	13.1	28.3	8.2	100.0
Male	1953	50.6	12.2	30.2	7.0	100.0
	1963	49.8	13.5	30.7	6.0	100.0
	1971	47.0	13.6	30.7	8.7	100.0
Female	1953	60.3	13.2	21.0	5.5	100.0
	1963	63.5	10.0	22.9	3.6	100.0
	1971	61.9	12.6	19.9	5.6	100.0
Urban						
Both sexes	1963	7.6	18.1	66.0	8.3	100.0
	1971	9.3	16.3	60.1	14.3	100.0
Male	1963	8.2	19.2	64.2	8.4	100.0
	1971	9.9	16.6	58.9	14.6	100.0
Female	1963	4.1	11.6	77.3	7.0	100.0
	1971	5.6	14.2	68.0	12.2	100.0
Rural						
Both sexes	1963	63.4	11.6	20.4	4.6	100.0
	1971	61.0	12.3	20.0	6.7	100.0
Male	1963	60.8	12.0	21.9	5.3	100.0
	1971	58.0	12.3	22.4	7.3	100.0
Female	1963	72.4	9.9	15.0	2.7	100.0
	1971	70.2	12.4	12.9	4.5	100.0

Source: Pitiyage Wilson, *Economic Implications of Population Growth - Sri Lanka Labour Force 1946-1981* (Canberra, The Australian National University, 1974), table 4.4.

The proportion of persons employed in the primary sector was lowest in the urban areas and highest in the rural areas. Most urban workers were engaged in tertiary activities, the proportion of females being higher than that of males. Another significant feature of the urban employment structure is that the proportion of males in the primary sector exceeded the corresponding proportion of females by about 4 per cent. This could be explained by the fact that the bulk of the males in the urban centres along the coastal belt of Sri Lanka are engaged in the fishing industry.

It will also be noted from table 199 that the proportion of employed persons in the primary and tertiary sectors declined by 2.2 percentage points and 0.8 percentage points respectively. Consequently, there has been a slight increase by 0.3 per cent in the proportion of those employed in the secondary type of activities and a considerable increase by 2.7 per cent in the "unspecified" category. This was mainly apparent among employed females, the employed males displaying only slight changes. The proportion of males employed in the tertiary and secondary sectors was almost constant. The proportionate decline in the primary sector was counterbalanced by the proportionate increase in the "unspecified" category. Similarly, remarkable changes can be seen in the proportion of urban and rural employed persons. The proportion of workers who performed a primary type of activity in the urban areas increased while the proportion of rural workers declined. The considerable increase in the proportion of those included in the "unspecified" category precludes the analysis of the reasons for and the outcome of these changes.

5. Occupational classification

In view of the data difficulties, the distribution of employed persons by occupation has been combined and reduced into two major divisions, viz., agricultural occupations and non-agricultural occupations. The agricultural occupations consist of the major occupational divisions of farmers, hunters and related workers. The non-agricultural workers include all the other workers classified in any specific occupational groups.

The percentage distribution of the employed population by major occupations and sex is shown in table 200. It will be noted that the number of employed persons was evenly distributed among the agricultural and non-agricultural occupations. The majority of the employed males were in non-agri-

cultural occupations. In the urban areas, a very high proportion of both males and females were engaged in non-agricultural occupations. Between 1963 and 1971, a slight increase in the proportion of agricultural workers in the urban area depressed the proportion in the non-agricultural occupations. This was the result of the creation between 1963 and 1971 of new urban areas which still had heavy concentrations of agricultural occupations.

An analysis of the 1971 census data of the employed population by occupation and educational levels is given in table 201. "It appears that agricultural work seems to be the occupation of those with little or no schooling. Almost 70 per cent of those with schooling up to grade V are engaged in agricultural occupations. Among those who have had a few years in the high school without completing the 'O' level examinations, the biggest group (42 per cent) falls into the 'others' category of occupations - the production and service workers. Among those with at least 'O' level education (The G.C.E. 'O' level examination is at the end of 10 years of schooling and the 'A' level examination at the end of 12 years of schooling) the most popular occupations are the white collar occupations (70 per cent among those with 'O' level qualifications and 95 per cent of those with higher qualifications).

"That those who are educated above the 'O' level should prefer the professional, administrative and other white collar occupations is to be expected. But not so obvious perhaps is the preference for white collar occupations among those with 'O' level qualifications and the preference for the so-called blue collar occupations among the less educated. These preferences are based on many factors; such as the nature of employment and employee incomes in those occupations and the need for some minimal amount of capital for self employment. Employment in the agricultural occupations is mostly at the level of unskilled labour with low wages and without much assurance of continued availability of employment, except on the tea, rubber and coconut estates. Self employment on own account is also possible for the poorer person as tenant operator in small farms. Incomes in these occupations are low. In the blue collar occupations, more attractive employment both from the point of view of the nature of employment and monetary returns is available. The white collar occupations, of course, are the best paid not

Table 200. Percentage distribution of employed population by major occupation and sex, 1953-1971

Sex	Year	Agricultural	Non-agricultural	Unspecified	Total
All island					
Both sexes	1953	51.3	46.6	2.1	100.0
	1963	51.7	47.1	1.2	100.0
	1971	49.4	48.1	2.5	100.0
Male	1953	48.9	49.6	1.5	100.0
	1963	48.8	50.2	1.0	100.0
	1971	46.0	51.7	2.3	100.0
Female	1953	58.7	37.2	4.1	100.0
	1963	62.8	34.8	2.4	100.0
	1971	61.4	35.7	2.9	100.0
Urban					
Both sexes	1963	7.3	90.7	2.0	100.0
	1971	9.0	87.0	4.0	100.0
Male	1963	7.9	90.5	1.6	100.0
	1971	9.6	86.7	3.7	100.0
Female	1963	3.4	91.9	4.7	100.0
	1971	5.2	89.2	5.6	100.0
Rural					
Both sexes	1963	61.9	37.0	1.1	100.0
	1971	59.9	38.0	2.1	100.0
Male	1963	59.3	39.8	0.9	100.0
	1971	56.7	41.4	1.9	100.0
Female	1963	71.1	26.9	2.0	100.0
	1971	69.7	27.8	2.5	100.0

Source: Pitiyage Wilson, *Economic Implications of Population Growth – Sri Lanka Labour Force 1946-1981* (Canberra, The Australian National University, 1974), table 4.5

Table 201. Distribution of the employed population by occupation and educational attainment, Sri Lanka, 1971

Educational attainment		White collar occupations ^{a/}		Agricultural occupations		Other occupations	
		Number	Percentage	Number	Percentage	Number	Percentage
Total	T	654,481	18.1	1,790,594	49.4	1,179,371	32.5
	M	542,288	19.3	1,290,008	45.9	977,440	34.8
	F	112,193	13.8	500,586	61.4	201,931	24.8
No schooling	T	2,285	0.4	541,879	91.4	48,987	8.3
	M	1,613	0.5	268,111	90.4	26,698	9.0
	F	672	0.2	273,768	92.3	22,289	7.5
Grades I-V	T	113,405	7.9	853,820	59.2	474,469	32.9
	M	106,650	8.9	681,719	57.1	404,921	33.9
	F	6,755	2.7	172,101	69.3	69,548	28.0
Grades VI-X	T	274,794	26.3	333,293	31.8	438,513	41.9
	M	245,380	26.7	298,236	32.4	376,127	40.9
	F	29,414	23.2	35,057	27.6	62,386	49.2
GCE 'OL' six or more subjects	T	120,590	69.1	14,358	8.2	39,521	22.7
	M	90,167	66.7	13,100	9.7	31,868	23.6
	F	30,423	77.3	1,258	3.2	7,653	19.5
GCE 'AL' three or more subjects	T	65,280	94.6	1,142	1.7	2,582	3.7
	M	35,954	91.7	1,093	2.8	2,145	5.5
	F	29,326	98.4	49	0.2	437	1.5
Degree or above	T	30,102	94.5	386	1.2	1,353	4.3
	M	22,740	93.4	386	1.6	1,208	5.0
	F	7,362	98.1	-	-	145	1.9
Unspecified	T	48,025	17.9	45,716	17.1	173,946	65.0
	M	39,784	19.7	27,363	13.6	134,473	66.7
	F	8,241	12.5	18,353	27.8	39,473	59.7

Source: Computed on the basis of the data published in *Census of Population 1971 Preliminary Report* (Colombo, Department of Census and Statistics, 1974), table 12.

Note: ^{a/} Include professional, technical and related workers; administrative and managerial workers; clerical and related workers and sales workers.

Table 202. Percentage distribution of employed population by employment status and sex, 1953-1971

Sex	Year	Employee	Employer	Own-account worker	Unpaid family worker	Unspecified	Total
All island							
Both sexes	1953	61.2	3.1	30.0	5.7	-	100.0
	1963	65.0	2.4	26.7	5.1	0.8	100.0
	1971	66.6	3.1	25.0	5.3	-	100.0
Male	1953	59.4	3.7	33.6	3.3	-	100.0
	1963	60.6	2.9	31.3	4.7	0.5	100.0
	1971	63.7	3.8	29.0	3.6	-	100.0
Female	1953	66.9	1.3	18.9	12.9	-	100.0
	1963	82.2	0.6	8.9	6.6	1.7	100.0
	1971	76.9	0.8	11.2	11.1	-	100.0
Urban							
Both sexes	1963	77.1	4.5	16.5	1.0	0.9	100.0
	1971	81.8	5.4	11.7	1.1	-	100.0
Male	1963	76.0	5.0	17.6	0.8	0.6	100.0
	1971	80.2	6.1	12.8	0.9	-	100.0
Female	1963	84.5	1.2	8.9	2.5	2.9	100.0
	1971	91.1	1.6	5.3	2.0	-	100.0
Rural							
Both sexes	1963	62.2	1.9	29.0	6.2	0.7	100.0
	1971	62.5	2.5	28.7	6.3	-	100.0
Male	1963	56.6	2.3	34.8	5.7	0.6	100.0
	1971	58.5	3.1	34.0	4.4	-	100.0
Female	1963	81.9	0.5	8.9	7.2	1.5	100.0
	1971	74.6	0.6	12.1	12.6	-	100.0

Source: Computed from the data of the censuses held in 1953, 1963 and 1971.

only at the higher levels but for a long time even at the lower levels of clerical workers and sales workers. In the industry and service sectors, where the blue collar and white collar jobs are found, the establishments are better organized and there is not only greater probability of continued employment, but also the protection afforded by trade union organizations and labour legislation. Social prestige that goes with different vocations no doubt reflects these considerations and would also be an important factor in influencing any choice of occupation."^{16/}

6. Employment status

As noted earlier, employed persons have been classified according to their employment status into four broad categories, namely, (a) employee; (b) employer; (c) own account worker and (d) unpaid family worker. The proportionate distribution of the employed population by 'status' is given in table 202. It will be observed that for the total population, the proportion of paid employees increased between 1953 and 1971, while the proportions of employers and unpaid family workers decreased between 1953 and 1963 and then increased between 1963 and 1971. The changes in the status of the employed males and females however, were not identical.

^{16/} *The Population of Sri Lanka, op.cit.*, pp. 82-85.

In regard to males, the proportion of employers and of own account workers declined between 1953 and 1963 while those of paid employees and unpaid family workers showed increases. Between 1963 and 1971, the proportions of employers and paid employees increased while those of own account workers and unpaid family workers declined.

In the case of females, as was noted earlier, there was a decline in the number of employed between 1953 and 1963 and this decline was observed in every status category other than paid employees. The proportion of paid employees therefore recorded a marked increase from 66.9 in 1953 to 82.2 per cent in 1963. Though between 1963 and 1971 the proportion of paid employees recorded a decline, the 1971 proportion of 76.9 per cent was 10 percentage points higher than that of 1963.

Generally in agricultural countries, the proportions of own account workers or self-employed and unpaid family workers exceed the proportion of paid employees. However, in Sri Lanka, resulting largely from the wage employment in the estate sector, the highest proportion of employed persons are paid employees. For instance in the rural areas, where the highest concentration of employed persons are in agriculture, nearly 62 per cent are paid employees. Thus compared to other developing countries, in Sri Lanka the gap between the proportion of paid employees in rural and urban areas is narrow.

It is also clear from table 202 that there were noticeable changes in the status distribution of the employed by sex in urban and rural areas. In regard to the males, the proportions of employees and of employers both in urban and rural areas increased while the proportion of own account workers showed decreases, the decrease being greater in urban areas. The proportion of male unpaid family workers increased very slightly in the urban areas but dropped by 1.3 percentage points in rural areas.

In the case of females, the proportions of employees and employers in urban areas increased while the proportions of own account workers and unpaid family workers decreased. In the rural areas, however, the proportion of female employees decreased while the proportions in other status categories increased between 1963 and 1971. The rate of increase was particularly high in regard to female own account workers and unpaid family workers. "These changes may be attributed to the effect of slow growth of wage employment opportunities and prevailing high unemployment. Female participation in the labour force is highly sensitive to the unemployment rates.

Own-account workers and unpaid family workers are part of the labour force; increasing unemployment rates might have motivated some of them to seek means of livelihood as self-employed or to help in family enterprises. Moreover, the government policy of encouraging self employment by giving individuals financial assistance and other incentives to start farms, small industries etc., obviously contributed to these changes"^{17/}.

The proportionate distribution of the employed persons by status and major industrial sectors for 1963 and 1971 ^{18/} is shown in table 203. The largest proportion of the total employed population in all sectors ^{19/} in both years were paid employees. The proportion of unpaid family workers was lower than workers in all categories except in the primary sector where the proportion of employers was the lowest. In the primary sector, while the largest proportion of male workers was "own account workers," the largest proportion of female workers was "employees." "This difference was the result of the relative importance of the two sub-sectors (modern and traditional) within agriculture. As might be expected, the majority of males were self employed farmers in traditional agriculture. On the other hand, the majority of female workers were engaged in the modern agricultural sector as waged employees."^{20/} In the secondary and tertiary sectors, the highest proportions of males and females were employees. The relatively high proportion of female own account workers in the secondary sector, compared with the corresponding proportion in the primary and tertiary sectors, reflects the relative importance of cottage industries among female workers.

The status distribution of employed persons by industry changed slightly between 1963 and 1971. The proportion of male and female employees in the secondary and tertiary sectors increased while this proportion in the primary sector declined. This was because during the last two decades, the number of jobs was more or less stabilized in the plantation or modern agricultural sector in which waged employment opportunities exist. However, the expansion of paid employment in the secondary and tertiary sectors was relatively high.

^{17/} Pitiyage Wilson, *op.cit.*, p. 122.

^{18/} The 1953 data has not been cross-classified by status and industry.

^{19/} For definition of primary, secondary and tertiary sectors, see section on Industrial classification.

^{20/} Pitiyage Wilson, *op.cit.*, p. 124.

Table 203. Employed population by employment status and major industrial ^{a/} sector, 1963 and 1971

Major industrial sector	Sex	Employee	Employer	Own-account worker	Unpaid family worker
1963					
Primary	Both sexes	55.2	0.9	35.5	8.4
	Male	44.9	1.2	45.5	8.4
	Female	86.7	0.2	4.8	8.3
Secondary	Both sexes	75.0	3.0	20.6	1.4
	Male	77.9	3.4	17.8	0.9
	Female	59.6	0.9	35.4	4.1
Tertiary	Both sexes	76.0	5.1	17.6	1.3
	Male	74.1	6.0	19.0	0.9
	Female	85.8	1.3	9.8	3.1
1971					
Primary	Both sexes	51.0	1.3	38.7	8.9
	Male	43.1	1.8	48.8	6.4
	Female	72.3	0.2	12.0	15.5
Secondary	Both sexes	83.2	3.9	11.8	1.1
	Male	83.7	4.5	11.0	0.8
	Female	81.5	1.7	14.7	2.1
Tertiary	Both sexes	81.3	6.0	11.4	1.3
	Male	79.9	6.7	12.4	1.0
	Female	89.2	1.7	6.2	2.8

Source: Computed from unpublished data of the 1963 and 1971 censuses, Department of Census and Statistics.

Note: ^{a/} Unspecified category excluded.

Table 204. Employed population by employment status and major occupation ^{a/}, 1963 and 1971

Major occupation	Sex	Employee	Employer	Own-account worker	Unpaid family worker
1963					
Agricultural	Both sexes	54.2	0.9	36.3	8.6
	Male	43.4	1.1	46.8	8.7
	Female	86.7	0.2	4.8	8.3
Non-agricultural	Both sexes	78.0	4.1	16.7	1.2
	Male	77.8	4.6	16.8	0.8
	Female	79.2	1.1	16.5	3.2
1971					
Agricultural	Both sexes	49.8	1.4	39.7	9.1
	Male	41.3	1.8	50.3	6.6
	Female	71.8	0.3	12.2	15.7
Non-agricultural	Both sexes	83.0	4.9	10.9	1.1
	Male	82.3	5.8	11.1	0.8
	Female	86.4	1.7	9.4	2.5

Source: Computed from unpublished data of the 1963 and 1971 censuses, Department of Census and Statistics.

Note: ^{a/} Unspecified category of workers excluded.

It is evident that the occupational distribution of employed population by status groups shown in table 204 is closely related to the industrial distribution of workers by status groups shown in table 203. This may be the result of the industry orientation of most of the agricultural occupations.

D. UNEMPLOYED POPULATION

1. Growth trends

An accurate analysis of the trend in the growth of the unemployed population in Sri Lanka is handicapped by a lack of uniform definition in regard to unemployment. The definition of unemployment has varied from one enquiry to another. The first comprehensive and specific study of unemployment was undertaken by the International Labor Organisation in 1959/60^{21/}. This survey classified as unemployed "all persons aged 12 years and over whose main activity status was either (a) without work but available and

willing to work or (b) without any substantive work or duties though able to work or take duties whole time". Two estimates (high and low) of unemployment were prepared on the basis of this survey. The low estimate amounted to 10.5 per cent of the labour force whereas the high estimate amounted to 12.8 per cent of the labour force.

It is generally believed that the extent of unemployment has been increasing since the time of the 1959/60 survey as a result of the relatively high rate of growth of population and the slow rate of growth of employment opportunities. Nevertheless the 1963 census^{22/} recorded a relatively low level of unemployment - 7.7 per cent of the labour force, which was 2.8 percentage point less than even the low estimate of the 1959/60 survey. There is, however, no evidence to prove that the reduction in the level of unemployment was the result of a comparable increase in the level of employment between 1959/60 and 1963. A comparison of the 1963 census data on

^{21/} ILO, *Preliminary Report to the Government of Ceylon on Survey of Employment, Unemployment and Under-employment 1959/60* (Geneva, 1962).

^{22/} According to the 1963 census, to be classed as unemployed, a person had to satisfy two conditions, (a) he should be without employment or work and (b) he should be seeking or looking for work.

unemployment with the data of the 1969-70 Socio-Economic Survey as well as of the 1971 census gives the impression that the 1963 census data was subject to severe under-enumeration. According to the adjustments made by Wilson^{23/}, unemployed persons constituted about 14 per cent of the labour force in 1963.

According to the 1969-70 Socio-Economic Survey^{24/}, the ratio of the number of persons unemployed to the total number in the labour force was 14 per cent. According to the 1971 census, the unemployed constituted about 18.7 per cent of the labour force in that year. The growth and sex distribution of the unemployed population since 1959/60 is indicated in table 205.

The number of unemployed persons increased at an annual average rate of 5.2 per cent between 1959/60 and 1963 (adjusted estimates) and at a rate of 6.0 per cent *per annum* between 1963 and 1971. Though the largest proportion of the unemployed were males, the proportion of females has been increasing over the years. During the entire period, the rate of increase for female unemployed (6.3 per cent *per annum*) exceeded the corresponding rate for male unemployed (4.5 per cent *per annum*) by 1.8 percentage points. To a certain extent, it is the rapid increase in the number of unemployed females that has pushed up the unemployment level in Sri Lanka to an unprecedentedly high rate of about 19 per cent of the total labour force in 1971. The high rate of increase of female unemployment was a result of the large influx of females into the labour force at a time when there was no corresponding demand for their labour.

2. Age-sex distribution

The percentage distribution of the unemployed persons by age and sex in the urban and rural areas in 1971 is shown in table 206. It will be seen that the highest concentration of unemployment was among young adults. For the country as a whole about 60 per cent of unemployed persons were in the age group 15-24 years. The proportion of unemployed in the subsequent age groups decreased with increasing age. There is no significant difference between the

age distribution of unemployed males and females. However, there was a higher proportion of males than females unemployed in the age group 15-24 years. About 80 per cent of the unemployed of both sexes were 15-34 years old. The distribution of unemployed persons in urban and rural areas followed the over-all pattern. However, the incidence of unemployment among rural adults was higher than that of their urban counterparts.

The age-specific unemployment rates for both sexes by rural and urban areas is shown in table 207. The highest unemployment rate was recorded in respect of those aged 15-19 years followed by those aged 10-14 and 20-24 years. For the country as a whole, a little over 40 per cent of all persons aged 15-19 years were unemployed, this rate being as high as 50.4 per cent in urban areas. Among those aged 20-24 years, more than a third were unemployed, again the proportion in urban areas being higher than in rural areas. The highest rate of unemployment, 64.7 per cent, was recorded in respect of women in the 15-19 age group followed by 63.6 per cent among women aged 20-24 years. It may also be noted that the age-specific unemployment rates for females in all age groups were higher than the rates for males. The over-all female rate was 31.1 per cent as against a rate of 14.3 per cent for males; thus, the over-all rate for females was more than twice that for males.

It is also evident from table 207 that the level of unemployment is higher in the urban than in the rural areas. In 1971, nearly 23 per cent of the urban labour force was unemployed compared with about 17 per cent of the rural labour force. In all age groups, urban females displayed higher unemployment rates, and the over-all unemployment rate for urban females was 20 percentage points more than the rate for rural females. "The relatively high unemployment in the urban centres is a common phenomenon in developing countries. A great part of these variations lies in the differences in the interpretation of the concept of unemployment by urban and rural respondents. Generally a fair number of rural persons do not consider that they are unemployed since they do odd jobs in the farms which are operated very often by other members of the family. On the other hand, the urban labour force has to rely on wage employment. If they do not have wage employment they have to report that they are unemployed. In addition, the high job expectations of the urban labour force resulting from the relatively higher educational attainments are partly responsible for these changes"^{25/}.

^{23/} Pitiyage Wilson, *op.cit.*, p. 130.

^{24/} Government of Sri Lanka, *Socio-Economic Survey of Sri Lanka 1969-70 Rounds 1-4, Statistical Tables, vol. I, Population, Labour Force and Housing* (Colombo, Department of Census and Statistics, 1973).

^{25/} Pitiyage Wilson, *op.cit.*, pp. 133-134.

Table 205 Unemployed population 1959/60, 1963, 1969/70 and 1971

Year		Number unemployed (thousands)	Unemployment rate	Percentage distribution	
				Male	Female
1959/60	Low estimate	340.0	10.5	73.5	26.5
	High estimate	450.0	12.8	60.0	40.0
1963	Observed	264.3	7.7	76.0	24.0
	Adjusted	526.3	14.2	63.6	36.4
1969/70	Observed	588.5	14.4	62.5	37.5
1971	Observed	839.3	18.7	56.5	43.5

Table 206. Percentage distribution of unemployed persons by age and sex, urban and rural areas Sri Lanka, 1971

Age group	Whole country			Urban area			Rural area		
	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female
10-14	3.5	3.5	3.6	3.0	3.1	3.0	3.7	3.6	3.9
15-19	24.6	26.9	21.7	22.4	24.8	19.1	25.5	27.7	22.6
20-24	35.3	35.7	34.8	33.3	34.8	31.2	36.1	36.1	36.2
25-29	15.7	14.2	17.6	15.4	14.0	17.2	15.9	14.2	17.7
30-34	6.5	5.8	7.5	6.9	5.9	8.2	6.4	5.8	7.2
35-39	4.2	3.9	4.5	5.0	4.2	6.1	3.8	3.8	3.9
40-44	2.7	2.7	2.8	3.6	3.2	4.2	2.3	2.4	2.2
45-49	2.3	2.2	2.3	3.1	2.8	3.4	1.9	2.0	1.9
50-54	1.6	1.6	1.7	2.3	2.1	2.5	1.3	1.3	1.4
55-59	1.3	1.3	1.3	1.8	1.8	1.8	1.1	1.1	1.1
60-64	0.9	0.9	0.8	1.2	1.2	1.3	0.7	0.8	0.7
65-69	0.6	0.7	0.6	0.9	0.9	0.9	0.5	0.5	0.5
70-74	0.4	0.4	0.4	0.6	0.6	0.6	0.3	0.3	0.3
75 and over	0.3	0.3	0.3	0.5	0.5	0.5	0.3	0.3	0.3
All persons	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Government of Sri Lanka, *Census of Population 1971, vol. II, All Island Tables, part I, General Characteristics of the Population* (Colombo, Department of Census and Statistics, 1975), table 16.

Table 207. Age-specific unemployment rates, urban and rural areas, Sri Lanka, 1971

Age group	Whole country			Urban area			Rural area		
	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female
10-14	36.8	33.2	42.3	35.9	33.7	39.5	37.0	33.0	43.2
15-19	40.4	38.3	44.3	50.4	44.8	64.7	37.8	36.4	40.2
20-24	35.3	29.7	46.7	39.7	31.8	63.6	33.9	29.1	43.0
25-29	20.1	14.5	33.6	22.6	15.3	48.5	19.2	14.2	30.2
30-34	11.1	7.5	22.1	13.7	8.4	36.1	10.3	7.1	19.0
35-39	7.4	5.2	14.0	11.2	6.7	31.2	6.3	4.7	10.6
40-44	5.9	4.1	12.0	9.6	5.8	28.6	4.7	3.6	8.5
45-49	5.4	3.8	11.4	9.6	6.0	29.2	4.2	3.1	8.0
50-54	5.3	3.5	13.0	9.4	5.9	30.5	4.1	2.8	9.2
55-59	5.9	4.0	17.2	11.8	7.8	37.7	4.5	3.0	12.9
60-64	6.5	4.3	23.6	14.4	9.7	42.2	4.7	3.1	18.1
65-69	6.9	4.4	28.5	16.1	11.1	45.3	5.0	3.2	22.8
70-74	8.3	5.3	39.1	21.1	14.5	56.3	5.7	3.7	31.7
75 and over	14.7	9.5	53.1	32.1	22.7	67.1	10.8	6.9	46.3
All persons	18.7	14.3	31.1	23.4	17.0	47.6	17.3	13.4	27.4

Source: Same as table 206.

Table 208. Percentage distribution of unemployed persons by level of educational attainment, sex, urban and rural areas, 1971

Level of educational attainment	Whole country			Urban			Rural		
	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female
No-schooling	12.7	13.0	12.4	13.5	13.5	13.6	12.4	12.8	11.8
Primary	13.6	16.1	10.3	11.4	13.3	9.0	14.5	17.3	10.9
Middle	59.1	60.4	57.4	62.9	63.9	61.6	57.4	58.9	55.5
Passed GCE 'OL'	13.3	9.5	18.1	10.7	7.9	14.0	14.4	10.2	20.0
Passed GCE 'AL' and above	1.3	1.0	1.8	1.5	1.4	1.7	1.3	0.9	1.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Based on the 10 per cent sample tabulation of the 1971 census schedules. See *Census of Population 1971 - Preliminary Report* (Colombo, Department of Census and Statistics, 1974) (mimeo.), table 17.

3. Educational level

The analysis of the unemployed population in 1971 by level of educational attainment is given in table 208. It will be seen that the majority of the unemployed, 59 per cent, had completed five to nine years of schooling. The second highest proportion was in respect of persons who had passed the GCE 'OL' examination after 10 years of schooling, while those who had primary education (one to four years of schooling) constituted the third highest proportion. According to the analysis of the data collected in the

1968 labour force survey the rates of employment and unemployment by education level were as follows:

Educational status	Employed	Unemployed
Illiterate	93.0	7.0
Literate		
Below grade V	85.0	15.0
Grades V to VII	77.0	23.0
Grade VIII	52.6	47.4
GCE 'OL'	40.9	59.1
Above GCE 'OL'	47.7	52.3

Table 209. Percentage distribution of unemployed persons by age, sex and level of educational attainment, 1971

Level of educational attainment	Male					Female				
	15-24	25-34	35-44	45-64	65 +	15-24	25-34	35-44	45-64	65 +
No-schooling	9.8	11.4	21.4	27.0	37.2	6.8	9.1	25.4	42.3	64.0
Primary	14.3	12.7	21.7	22.6	28.3	8.5	7.5	16.7	16.2	12.3
Middle	65.1	59.9	51.2	47.0	32.2	65.0	52.5	47.3	38.4	22.1
Passed GCE 'OL'	10.2	13.8	4.6	2.1	1.0	18.4	27.6	9.6	2.2	0.8
Passed GCE 'AL' and above	0.6	2.3	1.2	1.3	1.3	1.4	3.4	0.9	0.9	0.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Same as table 208.

It will thus appear that "the probability of obtaining employment tends to diminish as the educational level of the labour force entrant rises".^{26/}

It is also clear from table 208 that there are significant differences in the distribution of the unemployed by level of educational attainment between rural and urban areas. At higher educational levels, the probability of being unemployed was high for rural population as compared with their urban counterparts. For instance, the proportion of rural unemployed persons with GCE 'OL' and higher qualifications exceeded the corresponding proportion of urban unemployed by about 45 per cent. Apparently, in any country, the availability of jobs for educated persons is relatively high in urban centres. The other noteworthy feature is that the proportion of urban unemployed with no schooling was slightly higher than that of rural unemployed. A more detailed breakdown of the educational structure of the unemployed persons by age and sex is given in table 209. It will be noted that in all age groups except the 65 years and over, the highest proportion among unemployed males had completed middle level education, that is, five to nine years of schooling. The majority of unemployed males aged 65 years and over were illiterate. It is also interesting to note that the proportion of illiterate unemployed males was considerably high in all age groups. This may largely be attributed to the employers' preference to engage literate persons than illiterates, particularly when there is no dearth of literate persons. This tendency may have accumulated the number of illiterate unemployed persons. The majority of un-

employed males who had obtained educational qualifications of GCE 'OL' and above were in the age groups 25-34. This category constituted 16.1 per cent in 1971. Thereafter, the proportion of unemployed males in this educational category decreased with increasing age. The persons who fully benefited from free education which was introduced in the late 1940s were in the age groups 25-34 years, and it was still too early to spread that benefit into the older age groups.

The distribution of unemployed females by age and educational status displayed a somewhat different pattern. It is important to note that the proportion of unemployed females with no-schooling in the age groups 35-44 and above exceeded the corresponding proportions of males. Among the unemployed females aged 45 years and over the highest concentration was in the no-schooling category. It will also be noted that there is increasing unemployment among educated women. For instance, the unemployment rate of women in all age groups who had passed the GCE 'OL' was higher than the corresponding rates for men. Among those aged 15-34 years and had passed the GCE 'AL' and above, women had higher unemployment rates than men. "This is a disturbing feature and is indicative of the possibility of increasing participation of educated women in the labour force inspite of high unemployment levels. It also shows that the reservoir of educated women in the working age-group, and particularly the youth age-group, is potentially capable of joining the labour force at short notice if special efforts are made for employment generation for this group. This factor has important implications for employment policy".^{27/}

^{26/} R.K. Srivastava and S. Selvaratnam, "Youth employment in Ceylon - problems and prospects", *Marga*, vol. 1, No. 4, 1972, p. 39.

^{27/} *Ibid.*, p. 41.

Table 210. Percentage distribution of the unemployed by those not actively seeking work, those actively seeking work in age and sex categories, urban and rural areas, 1971

Age group	Whole country				Urban area				Rural area			
	Male		Female		Male		Female		Male		Female	
	Not actively seeking work	Actively seeking work	Not actively seeking work	Actively seeking work	Not actively seeking work	Actively seeking work	Not actively seeking work	Actively seeking work	Not actively seeking work	Actively seeking work	Not actively seeking work	Actively seeking work
10-14	78.5	21.5	81.8	18.2	77.8	22.2	90.5	9.5	79.2	20.8	78.9	21.1
15-24	31.8	68.2	38.0	62.0	29.0	71.0	45.3	54.7	32.9	67.1	35.3	64.7
25-34	27.9	72.1	40.6	59.4	30.5	69.5	56.7	43.3	26.7	73.3	34.1	65.9
35-44	47.6	52.4	80.6	19.4	48.5	51.5	88.9	11.1	47.2	52.8	73.3	26.7
45-64	66.9	33.1	95.7	4.3	67.0	33.0	95.3	4.7	66.9	33.1	95.0	5.0
65+	92.6	7.4	97.6	2.4	88.5	11.5	98.5	1.5	94.6	5.4	97.9	2.1
All ages	36.8	63.2	47.7	52.3	37.0	63.0	60.3	39.7	36.7	63.3	41.8	58.3

Source: Based on 10 per cent sample tabulation of the 1971 census schedules reported in *Census of Population 1971 Preliminary Report* (Colombo, Department of Census and Statistics, 1974), (mimeo), table 15.

4. Category of unemployed

The 1971 census also made a distinction between those unemployed who were actively seeking work and those not actively seeking work. The majority of the unemployed, about 58 per cent, were actively seeking employment. All those persons who were not actively seeking work might not have been unemployed in terms of the international definition of unemployment, as there is a tendency among the people to report that they are unemployed if they do not have regular jobs offering security and a steady income.^{28/} It can be assumed that some of the unemployed persons may be engaged in part-time work or sharing work with their parents or relatives. Particularly in rural areas they might be engaged in seasonal agricultural work. As long as they are not satisfied with their current occupations they may report that they are unemployed, but they may not report that they are actively seeking work.

The distribution of the two categories of unemployed (those actively seeking work and those not actively seeking work) by age and sex is shown in table 210. It will be seen that the majority of the active seekers were young adults, whereas the not active seekers were concentrated in the age groups 35 and over. The proportion of males as well as females who were actively seeking work increased until their mid-thirties, after which it declined with

increasing age; the highest concentration was in the age groups 25-34. However, the proportion of not actively seeking work increased from the age groups 25-34 for males and from the age groups 15-24 for females rising gradually to a peak in the last age group, 65 and over. It seems, therefore, the older the person, the greater the chances of his giving up an active search for work.

A high proportion of young persons in the category of "not actively seeking work" is partly attributable to the social structure of the society. In Sri Lanka, an individual is supported, by his parents as long as he stays with them. In other words, as far as the parents are concerned, even the adult children are not a burden to the family, whether they work or not. In the context of prevailing high levels of unemployment, some of the young persons might consider it useless to declare themselves as actively seeking work.^{29/}

The proportions of females not actively seeking work in all age groups were higher than the corresponding rates for males. The relatively high proportion of unemployed males might have discouraged the females from reporting that they were actively seeking work. Further, these differences between the

^{29/} A similar argument was put forward by You Poh Seng when he said "In fact among the young adults there are those who are still squatting in their parents household, who are not looking for job, who can be described as job-waiters rather than job-seekers". See You Poh Seng, "The growth of the labour force" in *Proceedings of the International Population Conference*, London, 1969, vol. III (Liege, IUSSP), pp. 1492-1493.

^{28/} ILO, *Matching Employment Opportunities and Expectations - A Programme of Action for Ceylon* (Geneva, 1971), p. 26.

two sexes may also have resulted from the operation of those factors such as marital status, age at marriage and maternal status, which generally determine the relatively low participation rates for females.

There was no significant difference in the distribution of urban and rural males actively and not actively seeking work; but there was significant difference among urban and rural unemployed females. The majority of rural females were in the actively seeking work category, whereas among urban females the majority were in the not actively seeking work category. The inclusion of the estate sector with its high work potentials for women in "rural" might have been the reason for the presence of more rural females than urban females in the category of actively seeking work.

been looking for work for more than three years; 30.9 per cent amongst males and 26.0 per cent amongst females. The majority of them were in the age group 25-34. About 63 per cent of the unemployed males were actively seeking work in the urban sector as well as in the rural sector; of them nearly one-third were looking for work for more than three years. The proportion of those actively seeking work and the proportion of those waiting for more than three years was higher among rural females than urban females.

E. UNDEREMPLOYMENT

In agricultural countries like Sri Lanka, a substantial proportion of the employed population is underemployed. "Persons who cannot find employment will turn to very small-scale retailing, food and ser-

Table 211. Distribution of unemployed actively seeking work by period of which they were seeking work, age, sex, urban and rural areas, 1971

Age group	Whole country					Urban					Rural				
	Total actively seeking work	<1 yr.	1 yr.	2 yrs.	3 yrs.+	Total actively seeking work	<1 yr.	1 yr.	2 yrs.	3 yrs.+	Total actively seeking work	<1 yr.	1 yr.	2 yrs.	3 yrs.+
Both sexes	58.4	9.0	8.3	12.4	28.7	52.4	7.6	6.9	10.8	27.2	61.1	9.6	8.9	13.1	29.4
Male															
10-14	21.5	10.7	4.5	2.5	3.9	23.0	10.3	4.8	2.2	5.7	20.9	10.8	4.3	2.7	3.0
15-24	68.2	12.3	12.0	17.5	26.4	71.0	11.9	11.4	17.6	30.1	67.1	12.4	12.3	17.5	24.9
25-34	72.1	5.7	4.7	8.9	52.8	69.7	5.5	4.5	9.6	50.1	73.2	5.9	4.8	8.5	54.0
35-44	52.4	7.0	3.6	4.9	36.9	51.1	7.0	2.9	4.2	37.1	53.0	6.9	4.0	5.3	36.8
45-64	33.1	4.6	1.9	3.8	22.8	33.1	3.8	1.8	3.0	24.4	33.2	5.1	2.0	4.4	21.7
65+	7.4	1.3	0.3	0.7	5.1	9.9	1.7	-	1.2	7.0	5.4	0.9	0.6	0.3	3.5
All males	63.2	10.0	9.0	13.4	30.9	63.0	9.4	8.2	12.9	32.6	63.3	10.2	9.3	13.6	30.1
Female															
10-14	18.1	9.3	4.3	2.2	2.4	10.3	3.4	2.3	2.1	2.6	21.6	11.8	5.2	2.3	2.3
15-24	62.0	11.5	11.3	16.2	23.1	52.9	7.6	9.4	14.1	21.9	64.7	12.2	12.0	17.0	23.5
25-34	58.8	3.0	3.0	6.7	46.7	43.3	2.3	2.3	4.1	34.5	65.9	3.3	3.3	7.8	51.5
35-44	19.4	1.4	0.6	1.6	15.8	11.5	0.9	0.5	1.2	8.9	26.5	1.8	0.7	2.0	21.9
45-64	4.5	0.5	0.3	0.4	3.4	4.2	0.4	0.2	0.1	3.5	4.8	0.6	0.3	0.7	3.2
65+	1.8	0.2	-	-	1.6	1.5	-	-	-	1.5	2.1	0.5	-	-	1.6
All females	52.4	7.8	7.5	11.2	26.0	39.7	5.5	5.3	8.2	20.7	58.2	8.9	8.4	12.5	28.4

Source: Same as table 210.

5. Duration of unemployment

The 1971 census data on unemployment were available by period for which the persons were actively seeking work (table 211). The most significant feature is the fact that about 29 per cent of the persons actively seeking work reported that they had

vice stalls, with a variable number of unpaid family help"^{30/} However, "there is a growing suspicion among persons who work in the field that the usual procedure of collecting economic activity data does not get at these people, particularly in a census. And those that are covered are taken as fully employed

^{30/} *Ibid.*, p. 1491.

in the normal census routine, because questions on hours of work are too detailed and too difficult to ask"^{31/}

In Sri Lanka, there were two sample surveys, the 1959/60 Survey of Employment, Unemployment and Under-employment, and the 1968 Labour Force Survey, in which attempts were made to measure the extent of underemployment by obtaining the number of hours worked by the employed population^{32/} The results are summarized in table 212.

Table 212. Percentage distribution of employed persons by number of hours worked, Sri Lanka, 1959/60 and 1968

Hours worked	1959/60 Survey			1968 Labour Force Survey		
	Whole country	Urban area	Rural area	Whole country	Urban area	Rural area
Less than 1 hour ^{a/}	12.0	8.8	12.5	4.5	3.8	4.6
1 - 14 hours	4.8	2.5	5.1	4.3	2.4	4.6
15 - 39 hours	26.4	17.7	27.8	27.9	19.1	29.4
40 hours and over	56.8	71.0	54.6	63.3	74.7	61.4
Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: Pitiyage Wilson, *Economic Implications of Population Growth—Sri Lanka Labour Force 1946-81* (Canberra, The Australian National University, 1975), p. 147.

Note: ^{a/} In the case of the 1959/60 Survey less than 0 hour can be regarded as effectively unemployed.

Persons who were working less than one hour per week can be regarded as effectively unemployed. Similarly, persons who were working more than 40 hours per week can be regarded as effectively employed. Therefore, the category, "underemployed" would constitute only the employed persons who were working 1 to 39 hours per week. As can be seen from table 212, the underemployed accounted for almost one-third of all employed persons in both surveys. However, if a distinction is made between severely underemployed (those who were working 1-14 hours) and less severely underemployed (those who were working 15-39 hours) 4.5 per cent of the employed were severely underemployed, while over one quarter were less severely underemployed. The 1968 survey also showed that 4.1 per cent of all employed males and 4.3 per cent of all employed females were severely underemployed, but the proportion of less severely underemployed females (29.9 per cent) exceeded the corresponding propor-

tion for males (27.4 per cent) by 2.5 percentage points.

The extent of underemployment was higher in rural than in urban areas. In both surveys, the rural proportion of severely underemployed exceeded the corresponding urban proportion by nearly 50 per cent. The system of sharing available work (particularly in agriculture) among the available persons in the overcrowded rural areas obviously explains at least part of this difference.

The 1959/60 survey is the only source which provides detailed information about underemployed persons who looked for additional work. Of all employed persons working less than 40 hours per week, about 40 per cent were actually available for extra work. Nearly 19 per cent of rural employed declared that they wanted extra work, while 11 per cent of urban employed were available for extra work.^{33/}

On the basis of the 1968 Labour Force Survey, Wilson prepared an estimate of underemployment in 1971.^{34/} According to his estimates, 1,348,000 would have been underemployed in 1971. To satisfy the needs of unemployed and underemployed persons, it would have required the provision of 1,463,300 (839,300 for unemployed and 624,000 for underemployed) additional employment opportunities in 1971.^{35/}

^{31/} *Ibid.*, p. 1492.

^{32/} This is not a complete measure of the extent of underemployment. Though it may provide a meaningful estimate of visible underemployment, the invisible underemployment will go undetected.

^{33/} *Preliminary Report to the Government of Ceylon on Survey of Employment, Unemployment and Under-employment 1959/60*, *op.cit.*, p. 12 cited in *Economic Implications of Population Growth—Sri Lanka Labour Force 1946-81*.

^{34/} Pitiyage Wilson, *op.cit.*, p. 148.

^{35/} For a discussion on the difficulties in regard to creating adequate employment opportunities, see Gavin W. Jones and S. Selvaratnam, "Some problems of employment creation in Ceylon". *Marga*, vol. I, No. 1, 1971, pp. 72-91.

CHAPTER XV

FAMILIES, HOUSEHOLDS AND HOUSING NEEDS

A. INTRODUCTION

In studies relating to trends, determinants and consequences of population growth, a consideration of families and households is very important since almost all individuals are members of these two groups. The structure and size of families and households largely determine, and are in turn determined by, the basic demographic processes of fertility, mortality and migration. It is through the family that children are brought forth and cared for until they are able to assume an independent role in society. On it depends the continuity of population and society. The household as a unit derives its importance from the fact that it represents the smallest group of persons living together and making common provision for food and other essentials. The collective decisions of households as consumers of goods and services have an important bearing on the functioning of the economy. Households and families live in housing units. Hence, the process of housing development, which is vital to social progress, is also a subject of interest in population studies.

However, a systematic analysis of the formation and growth of households and families over the years in relation to population growth is rendered difficult by the fact that the population censuses conducted in Sri Lanka have not specifically provided for the collection of information on households and families.^{1/} For this reason one has to depend on certain ancillary information gathered in the population censuses and on information collected in the few censuses of housing which were conducted simultaneously with the population censuses. The periodic household sample surveys such as the Consumer Finance Survey conducted by the Central Bank and the Socio-Economic Survey of the Department of Census and Statistics provide valuable information on the socio-economic characteristics of the households.

B. FAMILIES AND HOUSEHOLDS

1. Definition of household and family

The concept of family and household are generally confused because of their close relationship and

^{1/} The 1911 census superintendent observed: "Probably the only means of obtaining anything like accurate information with regard to the number of families in Ceylon would be the insertion of an entry in the Census schedule for relationship to head of the family.", E.B. Denham, *Ceylon at the Census of 1911 Being the Review of the Results of the Census of 1911* (Colombo, Government Record Office, 1912), p. 27.

similarity, and because of the lack of unambiguous definitions for either of them.^{2/} The composition of a family depends on biological relationship while that of a household depends on certain living arrangements. According to the United Nations:

"The concept of 'household' is based on the arrangements made by persons, individually or in groups, for providing themselves with food or other essentials for living. A household may be either: (a) a one-person household, that is, a person who makes provision for his own food or other essentials for living without combining with any other person to form part of a multi-person household; or (b) a multi-person household, that is, a group of two or more persons who make common provision for food or other essentials for living. The persons in the group may pool their incomes and have a common budget to a greater or lesser extent; they may be related or unrelated persons, or a combination of both."^{3/}

On the other hand the United Nation's definition of family is as follows:

"The family is defined as those members of the household who are related to a specified degree, through blood, adoption or marriage. The degree of relationship used in determining the limits of the family is dependent upon the uses to which the data are to be put and so cannot be precisely set for world-wide use".^{4/}

Thus according to the United Nations definition, a family could not comprise more than one household, but a household could consist of more than one family, or of one family with one or more non-related persons or entirely of non-related persons.

^{2/} The 1901 census superintendent remarked: "There has been interminable controversy among statisticians as to what constitutes a house or family. The difficulty in framing a satisfactory definition is not diminished in this Island by the wide differences which prevails in the character and conditions of its various provinces and peoples. The definition must vary also with the statistical conclusions which it is intended to bring out". P. Arunachalam *The Census of Ceylon 1901* vol. I, (Colombo, 1902), p. 48.

^{3/} *Principles and Recommendations for the 1970 Population Census* (United Nations publication, Sales No. 67.XVIII.3), para.146.

^{4/} *Ibid.*, para. 213.

The definition of household adopted in the various censuses and surveys in Sri Lanka conforms basically to the United Nations definition. For instance, the 1971 housing census defined a household as single person or a group of persons who live together and have common cooking arrangements. Such persons need not necessarily be related to each other. The Consumer Finance Surveys conducted by the Central Bank also adopted a similar definition. However, the 1969/70 Socio-Economic Survey conducted by the Department of Census and Statistics defined a household as a group of two or more persons, related or unrelated, who combine to occupy the whole or part of the housing unit and provide themselves with food and other essentials of living. Boarders were included if their number did not exceed three but lodgers were excluded. Domestic servants who occupied the same premises and partook of household meals were included.^{5/} Thus, one-member households were not included in this survey.

tion, each of the following groups of persons formed a separate family: (a) a married couple without children; (b) a married couple living with one or more unmarried children; and (c) one parent living with one or more unmarried children. This definition was formulated specifically for the purpose of estimating housing requirements by identifying families that would each require a separate housing unit.

2. Trends in growth of households and families

Although recent population censuses do not provide any basic data on the total number of households, the housing censuses of 1953 and 1971 contain much useful information which give a broad indication of the trends in household formation during the period covered by these two censuses. Reasonably comparable data in respect of households derived from these two housing censuses are shown in table 213. It will be noted that the total number of private

Table 213. Growth of population and households by urban and rural sectors, Sri Lanka, 1953 and 1971

	1953		1971		Percentage increase 1953-1971
	Number	Percentage of total	Number	Percentage of total	
Whole country					
Population	8,097,895	100.0	12,689,897	100.0	56.7
Households	1,611,807	100.0	2,446,177	100.0	51.8
Urban					
Population	1,239,133	15.3	2,848,116	22.4	129.8
Households	188,586	11.7	474,521	19.4	151.6
Rural					
Population	6,858,762	84.7	9,841,781	77.6	43.5
Households	1,423,221	88.3	1,971,656	80.6	38.5

Source: Department of Census and Statistics.

It may also be noted that the "household" has been the unit of enumeration or subject of investigation in most inquiries; hence not much information has been collected in regard to the family. The housing censuses of 1963 and 1971 included a question on the number of families occupying a housing unit and for this purpose a family was defined as "a married couple or parents living with his/her/their unmarried children". According to this defini-

households in the country as a whole recorded an increase from 1,611,807 in 1953 to 2,446,177 in 1971 or by 51.8 per cent during the 18-year period. But the percentage increase in urban households (151.6 per cent) was about four times the corresponding increase (38.5 per cent) for rural households. Consequently, the share of the rural households in total households recorded a decline from 88 per cent in 1953 to about 81 per cent in 1971 while the proportionate share of urban households increased from about 12 per cent to 19 per cent during this period. The sharp increase in the total number of urban households has largely to be attributed to the crea-

^{5/} Government of Ceylon, *Preliminary Report on the Socio-Economic Survey of Ceylon 1969-70* (Colombo, Department of Census and Statistics, 1971), p. 128.

tion of a large number of urban centres and the increase in rural-urban migration between 1953 and 1971.

It may also be noted that while the total population increased by about 57 per cent between 1953 and 1971, the number of households increased by only 47 per cent. Thus the rate of household formation has not kept pace with population growth. However, in the urban sector, household formation has outstripped population growth while in the rural areas it has lagged behind. This could be explained by the fact that in urban areas most families and individuals either by choice or necessity tend to live separately, while in the rural areas where family ties are stronger, multi-family households are still quite common.

Comparable data on the number of families occupying private housing units are available only for the census years 1963 and 1971 from the data collected in the housing censuses. The trend in family formation is shown in table 214. It will be observed that

3. Projections of households

The method adopted in this study is to project the ratio of the number of households to the adult-population aged 20 to 64 years and to apply this ratio to the projected population aged 20-64 years.^{6/} The estimates of the ratio for future years has been derived by the following formula:

$$h_t = 1 - (1 - h_{1953}) \times \left(\frac{1 - h_{1971}}{1 - h_{1953}} \right)^{\frac{(t-1953)}{18}}$$

where h_t denotes the ratio of total households to the population aged 20-64 years in year t ; h_{1953} and h_{1971} denotes this ratio as obtained at the censuses of 1953 and 1971 respectively.

The projected number of households as well as the average rate of growth of households at five-year

Table 214. Growth of population and families by urban and rural sectors, Sri Lanka, 1963 and 1971

	1963		1971		Percentage increase 1963-1971
	Number	Percentage of total	Number	Percentage of total	
Whole country					
Population	10,582,064	100.0	12,689,897	100.0	19.9
Families	1,995,170	100.0	2,435,062	100.0	22.0
Urban					
Population	2,016,285	19.1	2,848,116	22.4	41.3
Families	334,070	16.7	457,161	18.8	36.8
Rural					
Population	8,565,779	80.9	9,841,781	77.6	14.9
Families	1,661,140	83.3	1,977,902	81.2	19.1

Source: Department of Census and Statistics.

while for the country as a whole the percentage increase in number of families was only marginally higher than the increase in population, in the urban areas family formation has lagged behind population growth while in the rural areas the percentage increase in the number of families was higher than the percentage increase in population. It may also be noted that in 1971, the total number of households (table 213) was slightly higher than the total number of families (table 214). This is because one member households had been excluded from the definition of a family.

intervals for the period 1976-2001 are given in table 215. The most striking feature is that the projected number of households continues to increase at a high

^{6/} For a description of this method, see United Nations, *Methods of Projecting Households and Families*, Manual VII, (ST/SOA/SER.A/54). It may also be noted that this Manual had recommended the "headship rate method" as the most plausible and widely applicable method for many countries for some years to come. But in the absence of detailed data relating to household heads in Sri Lanka, it is not possible to use this method to project the number of households in the future.

Table 215. Projections of households, Sri Lanka, 1971-2001

Year	Projected number of households (thousands)	Average annual rate of growth of households (percentages)	Average annual rate of growth of population (percentages)		
			High	Medium	Low
1971	2,446	-	-	-	-
1976	2,887	3.4	2.3	2.3	2.2
1981	3,373	3.2	2.2	2.1	1.6
1986	3,875	2.8	2.3	1.9	1.1
1991	4,365	2.4	2.3	1.7	1.2
1996	High	4,884	2.2	1.5	1.2
	Medium	4,884			
	Low	4,853			
2001	High	5,473	2.1	1.4	1.1
	Medium	5,418			
	Low	5,213			

Note: The projections of households are based on the population projections prepared by the Department of Census and Statistics in 1974. For details regarding various assumptions, see chapter XI, section D and table 148.

rate and any decline in fertility will not affect the growth rate of households significantly until the year 1991. This is to be expected since the size of the population aged 20-64 years on which the projections are based will not be affected until 1991 by any changes in fertility occurring after 1971.

4. Size of households

Comparable data on household size obtained from the Consumer Finance Surveys of the Central Bank given in table 216 show that for the country as a whole the average (mean) size of a household increased from 5.3 persons in 1953 to 5.8 in 1963 and then declined to 5.6 in 1973. The median size of a household though lower, has also shown the same trend. The decline between 1963 and 1971 has largely to be attributed to a fall in birth rates since the mid-1960, which lowered the number of children per household.

Table 216. Average size of households, Sri Lanka, 1953-1973

Sector	Mean			Median		
	1953	1963	1973	1953	1963	1973
Whole country	5.3	5.8	5.6	4.7	5.1	4.9
Urban	5.3	6.0	5.8	4.8	5.2	5.0
Rural	5.3	5.7	5.6	4.8	5.1	5.0
Estate (plantation)	5.4	5.8	5.2	4.3	5.2	4.3

Source: Reports of the Consumer Finance Surveys carried out by the Central Bank in 1953, 1963 and 1973.

It will also be noted that the average size of the urban household has consistently been higher than that either of the rural or estate (plantation) households. This is also confirmed by the results of the 1969/70 Socio-Economic Survey conducted by the Department of Census and Statistics.^{7/} The higher average for the urban sector could be attributed to the fact that non-family members such as domestic servants and boarders were included in many urban households while some of them consisted of more than one family. For instance, according to the 1971 census, nearly 60 per cent of all domestic servants in the country were employed in the urban sector which comprised only 22 per cent of the total population. The sharp decline in average size of the estate household between 1963 and 1971 could be explained in terms of the decline in fertility as well as emigration of the estate population.

The pattern of distribution of households by size in 1953, 1963 and 1973 is given in table 217. It will be noted that whereas in 1953 as much as 60 per cent of all households had five members or less, in 1963 this proportion has declined sharply to about 49 per cent. However, in 1973, the proportion of households with five members or less had increased to about 52 per cent, reflecting largely the decline in fertility during the period 1963-1973.

^{7/} Preliminary Report on the Socio-Economic Survey of Ceylon 1969-70, *op.cit.* According to this survey, the average size of a household in the urban sector is 6.3, in the rural sector 5.8 and in the estate sector 5.2.

Table 217. Percentage distribution of households by size, Sri Lanka, 1953-1973

Number of persons	1953	1963	1973
1	5.05	3.93	4.48
2	7.42	6.92	7.15
3	14.02	9.83	10.67
4	17.53	13.97	15.06
5	15.98	14.05	14.41
6	13.61	14.08	12.91
7	11.24	12.92	11.91
8	12.78	9.11	8.75
9		6.10	6.37
10		4.56	4.09
11-14	2.16	4.31	4.07
15 and over	0.21	0.22	0.14
Total	100.00	100.00	100.00

Source: Same as table 216.

An analysis by sectors of household distribution by size given in table 218 shows that there are no significant differences in the pattern as between the urban and rural sectors, but the estate sector has

Table 218. Percentage distribution of households by size in urban, rural and estate sectors, Sri Lanka, 1973

Number of persons	Urban	Rural	Estate
1 to 2	11.07	11.77	11.70
3 to 4	25.45	24.70	33.21
5 to 6	25.35	27.93	26.60
7 to 8	21.70	20.90	17.17
9 to 10	11.17	10.73	7.36
Over 10	5.26	3.97	3.97
Total	100.00	100.00	100.00

Source: *Survey of Sri Lanka's Consumer Finances 1973* (Colombo, Central Bank of Ceylon, 1974), table 5.

Table 219. Average size of households, number of income receivers and dependants, Sri Lanka, 1953, 1963 and 1973

	1953	1963	1973			
			Total	Urban	Rural	Estate
Average size of households	5.34	5.75	5.62	5.78	5.63	5.24
Average size of income receivers per household	1.79	1.56	1.44	1.37	1.31	2.45
Average number of dependants per household	3.58	4.19	4.18	4.41	4.32	2.79
Dependency ratio ^{a/}	2.00	2.69	2.90	3.22	3.30	1.14

Source: Same as table 216.

Note: ^{a/} Dependency ratio is the number of dependants per income receiver.

shown marked deviations. One third of the households in the estate sector were households with three to four members while the corresponding proportion for the urban and rural sector was only one fourth.

5. Household income

The living standards of households are, to a large extent, determined by their level of income, although there are many other factors which have also to be taken into account in order to make a proper assessment of the actual levels in real terms. Income as defined in most household surveys in Sri Lanka includes all receipts from work, property, transfers and other sources, which contribute to the household's or individual earner's spending power. Both money income as well as income in kind are usually taken into account. The definitions of incomes adopted for the decennial Consumer Finance Surveys of the Central Bank were basically the same apart from some minor differences in the reference periods used for collecting income data.

In households income studies, members of households who are income receivers are normally identified separately from those who are dependants. Although a little over half of all households in Sri Lanka are reported to have only one income receiver, those with two or more income receivers still constitute an important category. Table 219 gives a broad indication of the changes that have occurred during the past two decades with regard to the relative importance of income receivers and dependants in households.

It will be noted from table 219 that the number of income receivers per household declined steadily between 1953 and 1973. The number of dependants has increased from 3.58 in 1953 to 4.19 in 1963 and

Table 220. Estimates of average income of income receivers and spending units, Sri Lanka, 1953, 1963 and 1973

Category	Estimated income: current prices (Rs)			Estimated income: constant 1953 prices ^{a/} (Rs)	
	1953	1963	1973	1963	1973
Income receivers					
Mean income	215	267	455	249	280
Median income	135	166	360	155	221
Spending units					
Mean income	338	385	622	360	382
Median income	228	260	500	243	307

Source: Based on the data of the Survey of Consumer Finances conducted in the respective years by the Central Bank of Ceylon.

Note: ^{a/} The estimates at constant (1953) prices have been worked out using the Colombo Consumers Price Index as a deflator.

remained almost unchanged at this level. It will also be seen that the dependency ratio or the number of dependants per income receiver had risen fairly sharply from 2.0 in 1953 to 2.7 in 1963 and thereafter moderately to 2.9 in 1973. In the urban and rural areas, the dependency ratios were as high as 3.2 and 3.3 respectively, whereas in the estate sector, where both male and female labour were extensively employed, the ratio was only 1.1. High birth rates combined with declining mortality rates have had the effect of increasing the population in the dependent age groups. Further, relatively smaller proportions from among those in the younger adult age groups were found to be employed partly because of the non-availability of adequate employment opportunities for those seeking work and partly because teen-agers spent more years in school than previously.

The estimated mean and median incomes of income receivers and spending units^{8/} for the years 1953, 1963 and 1973 at current and constant (1953) prices are shown in table 220. As an indicator of the average level of income, the median income is more meaningful than mean income, since the distribution of personal income is generally positively skewed. It will be noted that between 1953 and 1963, both mean and median incomes of income receivers at constant prices increased by approximately 15 per cent; but in the following decade the mean income increased by 12 per cent as compared with an increase of 43 per cent in median income. The

^{8/} The concept of spending unit provides for the separate identification sometimes of smaller groups within households which act more or less as independent units for spending purposes; but in the large majority of the cases, the spending unit would correspond to the household.

pattern of changes in the incomes of spending units was very much similar; between 1953 and 1963, both mean and median incomes increased by 14 per cent but during the decade 1963-1973, the mean income registered an increase of 6 per cent while median income increased by as much as 26 per cent. The large difference in the two rates was due to a substantial reduction in the inequality of income during the period.

In order to obtain a correct picture of the general living standards of the community as a whole, the average income of households or spending units would have to be considered along with the distribution of income. For this purpose, it would be necessary to rank the households according to income, divide them into equal groups and then compare the corresponding income accruing to each group. The results of this exercise based on the data of the Consumer Finance Surveys are shown in table 221.

It is evident from the table that there was a slight redistribution of income during the period

Table 221. Percentage share of the income received by each tenth of ranked spending units, Sri Lanka, 1953, 1963 and 1973

Decile	1953	1963	1973
First	1.90	1.50	2.79
Second	3.30	3.95	4.38
Third	4.10	4.00	5.60
Fourth	5.20	5.21	6.52
Fifth	6.40	6.27	7.45
Sixth	6.90	7.54	8.75
Seventh	8.30	9.00	9.91
Eighth	10.10	11.22	11.65
Ninth	13.20	15.44	14.92
Highest	40.60	36.77	28.05

Source: Same as table 216.

1953-1963 in favour of the middle-income households mainly at the expense of the upper-income groups. But the income redistribution that took place between 1963 and 1973 was very significant. The relative share of the income enjoyed by the richest tenth was reduced from 37 per cent to 28 per cent. The relative share of the next richest group was also reduced, but in respect of all the other spending units there was an improvement in their relative share of the total income. The lower the income of the spending units, the greater was the improvement of their relative share. The Gini coefficient which is frequently used to measure income inequality declined from 0.45 in 1963 to 0.41 in 1973. It is thus clear that the increased average income of households in more recent years has been accompanied by a redistribution of income in favour of the lower and middle income groups.

C. HOUSING CONDITIONS

As stated earlier, national housing censuses were

the three censuses. While the concepts and definitions used in the 1963 and 1971 censuses are more or less identical, there are some important variations in the definitions used in the 1953 census. Thus, certain assumptions and adjustments have to be made to enable a comparison of the time series data. For instance, an important assumption made is that the term "household" used in the 1953 housing census is equivalent to what has been defined as "occupied housing units" in 1963 and 1971, since most of the data relating to housing in 1953 were classified on the basis of household units. Similarly, the basis of other adjustments that have been made to the data are specifically mentioned at the appropriate places.

1. Housing development 1953-1971

The changes in housing stock in relation to population growth between 1953 and 1971 are indicated in table 222. It will be seen that during period

Table 222. Population growth and housing development by sector, Sri Lanka, 1953-1971

Sector	Number of people and housing units			Percentage increase		
	1953	1963	1971	1953-1963	1963-1971	1953-1971
Both sectors						
Population	8,097,895	10,582,064	12,689,897	30.7	19.9	56.7
Housing Units	1,523,695	1,971,740	2,217,478	29.4	12.5	45.5
Occupancy rate ^{a/}	5.31	5.37	5.72	1.1	6.5	7.7
Urban sector						
Population	1,239,133	2,016,285	2,848,116	62.7	41.3	129.8
Housing units	183,336	318,140	421,155	73.5	32.4	129.7
Occupancy rate ^{a/}	6.76	6.34	6.76	-6.2	6.6	0.0
Rural and Estate sector						
Population	6,858,762	8,565,779	9,841,781	24.9	14.9	43.5
Housing units	1,340,359	1,653,600	1,796,323	23.4	8.6	34.0
Occupancy rate ^{a/}	5.12	5.18	5.48	1.2	5.8	7.0

Source: Based on the censuses of population and housing carried out in the respective years.

Note: ^{a/} Occupancy rate refers to the average number of occupants per housing unit and is obtained by dividing the total population by total number of housing units.

carried out in Sri Lanka simultaneously with the population censuses in 1953, 1963 and 1971. Information with regard to the number of housing units, their structural characteristics, conditions of tenure and occupancy, facilities available and rural/urban location of housing units are available from the housing censuses. However, a strict comparison of the data over time is rendered difficult by a lack of uniformity in the concepts and definition adopted in

1953-1971, while the population of the country as a whole increased by about 57 per cent, the number of occupied housing units increased by only about 46 per cent. In the urban areas the housing stock increased more or less in proportion to the increase in urban population but in the rural areas increase in housing units lagged considerably behind the increase in population. It will also be noted from the table that while between 1953 and 1963 the percentage

increase in housing stock (29.4 per cent) was more or less consistent with the increase in population (30.7 per cent), between 1963 and 1971 the percentage increase in housing units (12.5 per cent) was significantly lower than the increase in population (19.9 per cent). It will further be observed that while between 1953 and 1963, the imbalance between population increase and increase in housing units was significant only in the urban sector, during the subsequent intercensal period, this imbalance was marked both in the urban and rural sectors. The net result was that the share of the rural housing units in total housing stock declined from about 88 per cent in 1953 to 81 per cent in 1971.^{9/}

Since the rate of increase of the housing stock in the country as a whole had not kept pace with the growth of the population, the occupancy rate, or the average number of occupants per housing unit, increased steadily from 5.31 in 1953 to 5.72 in 1971. A similar trend is noticeable with regard to the rural sector where the occupancy rate increased from 5.12 in 1953 to 5.48 in 1971. However, in the urban sector the occupancy rate declined from 6.76 in 1953 to 6.34 in 1963 and increased again to 6.76 in 1971.

The percentage distribution of housing units by number of occupants given in table 223 shows that the number of units with seven or more occupants increased from 23.8 per cent in 1953 to 36.4 per cent in 1971. This increase in the rate of occupancy would undoubtedly have resulted in overcrowding and other attendant inadequacies. "The national housing stock is inadequate to house the country's population satisfactorily. The high rate of growth of population and the low output of construction, particularly during the decade immediately preceding 1971, has resulted in overcrowding of houses both in urban and rural areas. High occupancy rates and the appearance of sub-standard structures are direct consequences of this shortage."^{10/}

At the three national housing censuses, the housing units were classified into three types, viz., per-

^{9/} The increase in housing stock, estimated as the difference in aggregate stock between two censuses, provides only a crude estimate of the real increment since it does not take into account the replacement of obsolescent houses by housing of different types as well as additions and alternations made to the existing stock during the intercensal period. In other words it is assumed that housing units which have been demolished due to obsolescence during a particular intercensal period have been replaced by units of the same type during that period.

^{10/} *Housing in Sri Lanka*, Marga Research Studies No. 6 (Colombo; Marga Institute, 1976), p. 67.

Table 223. Percentage distribution of occupied housing units by number of occupants, Sri Lanka, 1953, 1963 and 1971

Number of occupants	1953	1963	1971
1	7.9	6.1	6.0
2	11.1	10.0	8.0
3	14.1	11.4	10.9
4	15.5	13.1	12.7
5	15.1	13.8	13.5
6	12.5	12.6	12.5
7	9.5	10.7	10.9
8	6.4	8.2	8.6
9	3.8	5.8	6.1
10	2.0	3.5	4.0
Over 10	2.1	4.8	5.6
Unspecified	-	-	1.3
Total	100.0	100.0	100.0

Source: Same as table 222.

manent, semi-permanent and temporary, according to the principal materials used in the construction of walls, roof and floor. These classifications are somewhat broad-based and make it difficult to identify changes in the quality of housing within any single type especially in the semi-permanent category. Nevertheless, they are indicative of changes in the typology of housing and the trends in housing development during the period 1953-1971.

A classification of the housing units by structural types in 1953, 1963 and 1971 is shown in table 224. Although the over-all composition of housing units did not show any marked changes between 1953 and 1963, there have been significant changes in the increment to the housing stock. For instance during this period the number of permanent housing units increased by 82,517. Of this increase, as many as 79,182 units or about 96 per cent were in the urban sector. The total increase in the number of semi-permanent units was 343,449, of which 310,112 or about 90 per cent were in the rural sector. Thus, the over-all trends in housing development during 1953-1963 indicate "that housing investment in urban areas was largely on permanent housing, whereas in the rural sector semi-permanent housing had been preferred. Temporary housing had been a feature exclusive to urban housing growth during this decade and accounts for a share

Table 224. Occupied housing units classified by structural type, Sri Lanka, 1953-1971

Type of housing units	1953			1963			1971		
	Whole country	Urban	Rural	Whole country	Urban	Rural	Whole country	Urban	Rural
All housing units									
Number	1,523,695	183,336	1,340,359	1,971,740	318,140	1,653,600	2,217,478	421,155	1,796,323
Percentage	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Permanent Units									
Number	531,683	116,728	414,955	614,200	195,910	418,290	785,949	264,787	521,162
Percentage	34.9	63.7	31.0	31.2	61.6	25.3	35.4	62.9	29.0
Semi-permanent units									
Number	890,131	55,973	834,158	1,233,580	89,310	1,144,270	1,271,232	118,368	1,152,864
Percentage	58.4	30.5	62.2	62.6	28.1	69.2	57.3	28.1	64.2
Temporary units									
Number	101,881	10,635	91,246	123,960	32,920	91,040	160,297	38,000	122,297
Percentage	6.7	5.8	6.8	6.3	10.3	5.5	7.2	9.0	6.8

Source: *Censuses of Housing: 1953, 1963 and 1971*, (Colombo, Department of Census and Statistics).

of the post-war proliferation of shanties in the city area".^{11/}

The period 1963 to 1971 showed a more rapid growth of urban than rural housing. Of a total of 245,738 units added to the housing stock during this period, 103,015 units or 42 per cent were in the urban sector and 142,723 or 58 per cent were in the rural sector. However, the percentage increase of the housing stock in the urban sector was 32.4 per cent compared to a corresponding increase of 8.6 per cent in the rural sector. There was however, a distinct trend in both urban and rural sectors towards improvement in the quality of housing as shown by the over-all preference for permanent housing. Nearly 70 per cent of the increment to the housing stock during this period consisted of permanent units, and of the total increment of the permanent units, nearly 60 per cent was in the rural areas. The number of permanent housing units increased by about 25 per cent in the rural sector and by about 35 per cent in the urban sector between 1963 and 1971 compared with an increase by less than 1 per cent in the rural and about 68 per cent in the urban areas during the previous intercensal period.

The trend towards better housing is also observed if the changes in the size of the housing units, as measured by the floor area and the number of rooms

^{11/} Hugh Karunanayake, "Housing development in Sri Lanka 1953-71", *Marga*, vol. 2, No. 3, 1974, p. 49.

are taken into account. The average floor area of a housing unit increased from 405 square feet in 1963 to 432 square feet in 1971, but the average floor area per occupant showed a slight decline due to the increase in the occupancy rate in both rural and urban sectors. The average number of rooms per housing unit also showed an increase between 1953 and 1971. Whereas in 1953, about 70 per cent of all housing units consisted of one and two-roomed houses, by 1971, this proportion had declined to about 43 per cent.

The over-all trends in housing development that emerged during the period 1953-1971 indicate a noticeable improvement in the quality of housing added to the stock during this period. Although a growing proportion of temporary housing units was added to the stock during this period, signifying the output of sub-standard housing, this was found to be small in comparison with the large output of good quality housing. However, the over-all output of housing has in more recent years lagged behind population growth, particularly in the rural sector.

2. The current housing situation

As noted earlier, the only source of information on the most recent situation in regard to housing in Sri Lanka is the 1971 housing census. For purposes of this census, two types of housing accommodation

Table 225. Housing units classified by structural type and sector, Sri Lanka, 1971

Sector	Type of housing units ^{a/}							
	Permanent		Semi-permanent		Temporary		All units	
	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
Urban	276,730	62.8	124,049	28.2	39,704	9.0	440,483	100.0
Rural	520,593	30.8	1,040,001	61.5	130,477	7.7	1,691,071	100.0
Estate	30,258	12.1	213,286	85.2	6,903	2.8	250,447	100.0
All sectors	827,581	34.7	1,377,336	57.8	177,084	7.4	2,382,001	100.0

Source: Government of Ceylon, *Housing Census 1971, vol. I: All Islands Tables* (Colombo, Department of Census and Statistics, 1973), (mimeo.), p. 4, table 3.

Note: ^{a/} Includes 164,523 housing units which were vacant or unoccupied. Hence the total number of housing units in 1971 shown in this table differs from the total shown in table 224.

Table 226. Percentage distribution of housing units in the various sectors by type and period of construction, Sri Lanka, 1920 and earlier, to 1971

Sector and type of constructions	Period of construction						
	1920 and earlier	1921-1945	1946-1960	1961-1965	1966-1971	Unspecified	All periods
All Sectors	8.5	18.3	28.9	19.3	23.6	1.4	100.0
Permanent	11.3	19.1	34.5	18.6	15.1	1.5	100.0
Semi-permanent	7.7	19.3	27.2	19.4	24.9	1.4	100.0
Temporary	2.1	6.8	15.3	21.7	53.0	1.2	100.0
Urban Sector	12.7	17.5	28.9	19.6	19.3	2.1	100.0
Permanent	16.6	21.4	29.9	16.5	13.3	2.3	100.0
Semi-permanent	7.3	12.6	29.8	24.3	24.5	1.6	100.0
Temporary	2.5	5.4	19.2	26.8	44.5	1.6	100.0
Rural Sector	6.6	13.4	30.0	21.2	27.7	1.0	100.0
Permanent	8.5	17.0	36.9	20.1	16.5	0.9	100.0
Semi-permanent	6.3	12.7	28.6	21.8	29.4	1.1	100.0
Temporary	1.8	4.7	13.7	20.9	57.9	1.1	100.0
Estate Sector	13.9	52.5	21.1	5.5	3.9	3.1	100.0
Permanent	10.5	32.3	35.4	10.5	7.1	4.2	100.0
Semi-permanent	14.7	55.3	19.0	4.7	3.3	3.0	100.0
Temporary	4.3	54.7	24.1	6.8	10.0	0.2	100.0

Source: *Housing Census 1971, vol. I: All Island Tables*, table 9A..

were distinguished: (a) housing units defined as separate and independent places of residence occupied by families or single persons; and (b) living quarters other than housing units which included institutions, boarding houses and other places of residence in which are housed persons not generally related to one another^{12/}. At the time of the census, there were 2,382,001 housing units and 298,467 living quarters other than housing units. Thus housing units formed nearly 96 per cent of all units of accommodation. The census also revealed that 164,523 housing units were vacant and thus the occupied housing units numbered 2,217,478 in the country as a whole.

A classification of the 2,382,001 housing units enumerated at the 1971 housing census by structural type^{13/} and sectors is shown in table 225. It will be observed that nearly 58 per cent of the 1971 housing stock consisted of semi-permanent units, while 35 per cent were permanent units and 7 per cent temporary units. The relative importance of the different types of housing units varies markedly among the urban, rural and estate sectors. In the urban sector, 63 per cent of the housing units were of the permanent type, 28 per cent semi-permanent and 9 per cent temporary type. In the rural sector, nearly 62 per cent of the housing units were of the semi-permanent type while only 31 per cent were of the permanent type. In the estate sector 85 per cent of all units were of the semi-permanent type while 12 per cent were of the permanent type. On the basis of the proportion of permanent type of units, the urban sector ranks first in terms of the quality of housing.

The percentage distribution of the 1971 housing stock in the urban, rural and estate sectors by type of structure and period of construction is shown in table 226. It will be noted that about 72 per cent of the housing stock in the country as a whole has been constructed since 1946, the corresponding propor-

12/ For detailed definitions of these two categories, see *Housing Census 1971, vol. I: All Island Tables* (Colombo, Department of Census and Statistics, 1973), p. 83.

13/ The housing units were classified into three broad types, viz., permanent, semi-permanent and temporary on the basis of the principal materials used in the construction of walls, roof and floor. In general, where the materials were durable products like cement, brick, tile, asbestos sheets, etc., the units were regarded as of permanent type. Where the walls were made of *cadjan*, *palmyrah* or other inferior and non-durable material, the units have been classified as of the temporary type. Where a mixture of both durable and non-durable materials were used, they have been considered to be of the semi-permanent type.

tions for urban, rural and estate sectors being 67.8 per cent, 78.9 per cent and 30.5 per cent respectively. Houses which were over 50 years old in 1971 (constructed in or before 1920) constituted 8.5 per cent and those aged between 25 and 50 years (constructed between 1921 and 1945) formed about 18 per cent of the national stock. It is interesting to note that while about 13 per cent of the housing stock in urban and estate sectors were over 50 years old, in the rural sector this proportion was only about 7 per cent.

The numerical and percentage distribution of occupied housing units by number of rooms^{14/} is shown in table 227. While for the country as a whole, one-roomed houses constituted about 34 per cent of the entire housing stock, this proportion was lowest (28.5 per cent) in the rural sector and highest (70.9 per cent) in the estate sector. Over 80 per cent of the country's housing units had one to three rooms. In the urban sector, there was a relatively larger proportion of small-sized housing units with one room as well as of large-sized housing units with over five rooms, as compared with the rural sector. The average number of rooms per housing unit was 2.24 for the country as a whole. Although there was no significant difference in this average as between the urban and rural sectors, housing units in the estate sector were found to be comparatively smaller in size with an average of only 1.44 rooms to a housing unit.

Density of occupation in terms of number of occupants per room is a widely accepted measure of the adequacy of housing accommodation. This indicator, however, is more appropriate in situations where rooms are of relatively uniform size. One of the aims of housing policy is to reduce the density of occupation to a level consistent with the maintenance of health and privacy of occupants. A fair assessment of the degree of overcrowding in dwellings could be made on the basis of information regarding the number of housing units with more than a minimum number of persons to a room. The standard rate adopted for tropical countries like Sri Lanka is a maximum of three persons to a room. The distribution of occupied housing units on the basis of this occupancy criterion as at the 1971 housing census is shown in table 228.

It will be observed that on the basis of a maximum of three persons per room, nearly 38 per cent

14/ At the 1971 housing census, living rooms, sitting rooms, dining rooms, bed rooms etc, were counted as rooms while kitchens, pantries, bath rooms etc. were excluded.

Table 227. Numerical and percentage distribution of occupied housing units by sector and number of rooms, Sri Lanka, 1971

Number of Rooms	All sectors		Urban		Rural		Estate	
	Number	Percentage	Number	Percentage	Number	Percentage	number	Percentage
1	745,707	33.6	132,997	31.6	444,354	28.5	168,356	70.9
2	685,892	30.9	113,028	26.8	533,490	34.2	39,374	16.6
3	363,767	16.4	64,328	15.3	290,169	18.6	9,270	3.9
4	176,811	8.0	37,117	8.8	135,153	8.7	4,541	1.9
5	77,671	3.5	18,791	4.5	56,604	3.6	2,276	1.0
6 and above	62,982	2.8	18,432	4.4	41,382	2.7	3,168	1.3
Unspecified	104,648	4.7	36,462	8.7	57,613	3.7	10,573	4.5

Source: Same as table 226.

Table 228. Distribution of occupied housing units with average number of occupants less than, equal to, and greater than three persons per room in urban, rural and estate sectors, Sri Lanka, 1971

Sector	Less than or equal to average 3		Greater than average 3		Total
	Number	Percentage	Number	Percentage	
Whole country	1,377,068	62.1	840,410	37.9	2,217,478
Urban sector	245,153	58.2	176,002	41.8	421,155
Rural sector	1,022,060	65.6	536,705	34.4	1,558,765
Estate sector	109,867	46.2	127,691	53.8	237,558

Source: Same as table 226.

of all housing units in the country as a whole are overcrowded. The situation appears to be more acute in the estate sector where nearly 54 per cent of the housing units are overcrowded compared with about 42 per cent in the urban and 34 per cent in the rural sectors. But the available information also shows that the average occupancy rates per room in small-sized housing units (with one or two

rooms) is much higher in the urban than in the rural and estate sectors.

The percentage distribution of the housing units according to specified floor area is shown in table 229. It will be seen that for the country as a whole, nearly 61 per cent of all housing units had a floor area of between 100 and 500 square feet, while about

Table 229. Percentage distribution of housing units according to specified floor area in urban, rural and estate sectors, Sri Lanka, 1971

Floor area in sq ft	Whole country	Urban	Rural	Estate
All housing units	100.0	100.0	100.0	100.0
Under 100 sq ft	10.1	14.8	8.7	11.3
100 - under 250 sq ft	31.8	26.7	28.1	64.3
250 - under 500 sq ft	28.8	24.3	31.7	17.2
500 - under 1,000 sq ft	20.3	18.6	23.3	3.7
1,000 - under 2,000 sq ft	6.2	10.2	5.9	1.1
2,000 and over	1.4	3.4	0.9	0.6
Unspecified	1.5	2.0	1.3	1.8

Source: Same as table 226.

Table 230. Percentage distribution of housing units according to number of resident families in urban, rural and estate sectors, Sri Lanka, 1971

Sector	Number of families					Total
	0	1	2	3 or more	Unspecified	
Urban	1.9	80.4	12.6	3.1	1.9	100.0
Rural	2.0	85.8	9.3	1.4	1.5	100.0
Estate	2.4	88.6	6.1	1.3	1.6	100.0
Total	2.0	85.1	9.6	1.7	1.6	100.0

Source: Same as table 226.

20 per cent of the housing units had a floor area ranging from 500 to 1,000 square feet. It is significant to note that the highest proportion of small scale (less than 100 square feet) as well as of large size (over 1,000 square feet) housing units are found in the urban sector. An estimate of overcrowded housing units, on the basis of a minimum floor area per person,^{15/} shows that as many as 913,376 units or 41.2 per cent of all housing units in the country are overcrowded. This proportion is about 3 percentage points higher than the estimates based on maximum number of persons per room given in table 228. However, both estimates clearly indicate that a substantial proportion of the housing units in the country is overcrowded.

Housing policy in most countries is directed towards the provision of separate housing units to each household or family as the case may be. Hence, information regarding sharing of housing accommodation by households or families is important for purposes of estimating housing needs. In the strict sense, only households or families which are involuntarily doubled-up should be taken into account for this purpose.

According to the data of the 1971 housing census, nearly 90 per cent of the housing units in the country were occupied by single households while the balance of 10 per cent constituted housing units with two or more households. However, a classifi-

cation of the housing units according to number of resident families (table 230) indicates that for the country as a whole, 85 per cent of the housing units were one-family units, this proportion being highest (88.6 per cent) in the estate sector and lowest (80.4 per cent) in the urban sector. Nearly 16 per cent of the urban housing units accommodated two or more families each, compared to about 11 per cent in the rural and only about 7 per cent in the estate sectors.

3. Housing amenities and facilities

An adequate supply of pure water, clean and sanitary bathrooms and toilet facilities, satisfactory cooking arrangements, a suitable source of power for lighting etc. are some of the amenities essential for satisfactory housing. The extent to which these amenities are available is discussed in this section.

At the 1971 housing census, detailed information was collected with regard to sources of water supply to housing units including ancillary data as to whether such sources of supply were for the exclusive use of a household or shared and whether they were located within or outside the units or premises. This information is summarized in table 231. It will be seen that piped water is available to only about 20 per cent of the country's housing units. The large majority (about 69 per cent) use well water while about 10 per cent depend on other sources such as rivers, streams, tanks etc. for their water supply. The principal source of water supply in rural areas is the well with about 82 per cent of rural housing units being dependent on this source. In the urban areas too, the well is the chief source of water supply, nearly 51 per cent of the urban housing units obtaining their supply from this source. Although nearly 45 per cent of the urban housing units

^{15/} The following indicators are used to measure overcrowding:

Floor area	If number of occupants exceed
- 100	2
100 - 250	4
250 - 500	6
500 - 1,000	8

Table 231. Percentage distribution of housing units by source of water supply in urban, rural and estate sectors, Sri Lanka, 1971

Source	All sectors	Urban	Rural	Estate
Piped water on tap				
Inside unit	4.4	16.3	1.1	5.2
Outside unit but within premises	7.9	10.2	1.0	48.0
Outside premises	7.8	18.8	2.7	21.6
Total	20.1	45.3	4.8	74.8
Water from				
Well exclusive	25.6	18.7	31.0	1.9
Shared	43.2	31.8	50.9	13.5
Total	68.8	50.5	81.9	15.4
Other sources				
(streams, rivers)	8.9	2.0	11.0	7.3
Unspecified	2.3	2.1	2.3	2.5
Total	100.0	100.0	100.0	100.0

Source: Same as table 226.

Table 232. Percentage distribution of housing units by types of toilet facilities in urban, rural and estate sectors, Sri Lanka, 1971-

Type of toilet facilities	All sectors	Urban	Rural	Estate
Flush toilet				
Inside unit	3.7	12.9	1.2	3.7
Outside unit	3.1	9.8	1.0	4.5
Water-seal	14.3	19.2	9.9	33.9
Bucket	4.8	19.4	1.0	4.1
Pit	38.8	18.3	44.4	38.2
None	34.3	19.1	41.5	13.4
Unspecified	1.1	1.3	1.0	2.2
Total	100.0	100.0	100.0	100.0

Source: Same as table 226.

have access to piped water on tap, the proportion with the water supply installation inside the unit for exclusive use of household or family members is only 16 per cent. In the estate sector, nearly 75 per cent of the housing units have access to piped water but the vast majority of them have to obtain their water from common taps outside the housing unit.

The percentage distribution of housing units by

type of toilet facilities available given in table 232 shows that for the country as a whole, more than a third of all housing units do not have toilet facilities of any type, this proportion being highest (41.5 per cent) in the rural sector and lowest (13.4 per cent) in the estate sector. In the urban sector, only about 23 per cent of the housing units have flush toilets, the other common type of toilet facilities available being water-seal (19 per cent). In the rural and es-

tate sectors, pit latrines and water-seal latrines account for a major proportion of the toilets available.

According to the 1971 housing census, nearly 89 per cent of the housing units depend on kerosene for lighting while only 9 per cent have electricity. In the urban sector only 35 per cent of the housing units have electricity while in the rural sector about 95 per cent use kerosene. The census also revealed that about 25 per cent of the housing units in the country do not have kitchen facilities while 69 per cent have separate kitchens and 4.5 per cent have common kitchens. In the rural sector the number of housing units without kitchen constitutes about 22 per cent of all rural houses and in the estate sector where cooking generally takes place in a single multi-purpose line room, nearly 50 per cent of housing units do not have kitchens.

4. Conditions of tenure

Of special significance for housing and rent policy and the formulation of programmes for housing development is the extent to which households own or rent the housing units they currently occupy. At the 1971 housing census information on tenurial status was obtained under four main categories, viz. owner-occupied, rented, rent free and all other forms of tenure. This information is presented in table 233 for the urban, rural and estate sectors.

It will be seen from table 233 that 63.3 per cent of all housing units in Sri Lanka are owner-occupied, 12.4 per cent rented and 15.1 per cent occupied free of rent. There were, however, significant differences in the relative importance of each type of tenurial status in the different sectors. In the urban sector, about 41 per cent of the housing units were rented as compared with 6.2 per cent and 1.7 per cent in the rural and estate sectors respectively. The large majority of the housing units (77 per cent) in the rural sector were owner-occupied while in the estate areas rent-free houses constituted as high as 89 per cent of the total.

A classification of the housing units of a given tenurial status by sectors given in table 234 shows that 85.4 per cent of all owner-occupied housing units are in the rural sector, 63.1 per cent of all rented houses are in the urban sector and 63.0 per cent of all rent-free houses are in the estate sector.

The trend in ownership of houses is clearly discernible from table 235. The proportion of owner-occupied housing units for the country as a whole had increased steadily from 61.1 per cent in 1953 to 63.3 per cent in 1971. This increase was sharper in the urban sector where the proportion in 1971 was 47.7 compared to 31.1 in 1953. The increasing trend in housing ownership is the result of govern-

Table 233. Percentage distribution of occupied housing units by tenurial status and sector, Sri Lanka, 1971

Sector	Owner occupied	Rented	Rent free	Other / unspecified
All sectors	63.3	12.4	15.1	9.3
Urban	47.7	41.1	6.2	5.0
Rural	76.9	6.2	6.3	10.6
Estate	2.0	1.7	88.7	7.6

Source: Same as table 226.

Table 234. Percentage distribution of housing units of given tenurial status by sector, Sri Lanka, 1971

Sector	Owner-occupied	Rented	Free of rent
Urban	14.2	63.1	7.9
Rural	85.4	35.4	29.1
Estate	0.4	1.5	63.0
Total	100.0	100.0	100.0

Source: Same as table 226.

Table 235. Trend in tenure of housing, 1953-1971
(percentage)

Tenure	Total			Urban			Rural		
	1953	1963	1971	1953	1963	1971	1953	1963	1971
Owner-occupied	61.1	62.2	63.3	31.1	40.3	47.7	65.0	66.5	76.9
Rented	14.6	15.3	12.4	58.5	49.1	41.1	8.7	8.7	6.2
Rent free and others	24.3	22.5	24.3	10.4	10.6	11.2	26.2	24.8	16.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Same as table 224.

ment policy of encouraging the construction of houses for owner occupation.

D. HOUSING NEEDS

It is necessary, at the outset, to make a distinction between housing "needs" and housing "demand". Generally, housing needs are determined "by comparing existing housing conditions with the housing conditions which are regarded as socially desirable in terms of structural quality, rates of occupancy, sanitary and other amenities, and which fulfill certain desired standards of health, privacy and so on. The future housing needs will also be estimated on projections based on data derived from such a comparison related to demographic and other socio-economic changes".^{16/} Housing demand, on the other hand, reflects only part of this socially felt need for housing. It will express the desire for housing supported by the economic ability to satisfy the desire. This market demand for housing will cover the entire range of housing units from the low cost and improvised structure to the luxury type and will generally reflect the actual output of housing at current income levels.

In estimating the accumulated housing needs, there are four major component items that need to be considered: (a) the number of temporary or improvised housing units "plus" the permanent and semi-permanent units which have exceeded their normal life span and are found unsuitable for habitation; (b) the number of housing units accommodating more than one family; (c) the number of overcrowded housing units; and (d) the number of units lacking basic amenities.

The age composition of the housing stock alone would not be sufficient to determine the actual number of permanent and semi-permanent housing units needing replacements. Information is also needed in regard to improvements effected to these units which

could have permitted an extended life span. However, in the absence of such information, it has been assumed that all temporary and improvised structures need to be replaced by dwellings made of more durable materials and that all semi-permanent structures constructed prior to 1920 would also have outlived their usefulness and would need replacement. Further, it has also been assumed that 75 per cent of the semi-permanent houses built during the period 1921 to 1946 and 50 per cent of the permanent housing stock built prior to 1920 would need replacement due to obsolescence. On the basis of these assumptions, the total number of housing units needing replacement in 1971 because of unsatisfactory structural materials used in construction or due to obsolescence have been estimated as follows:

All existing temporary and improvised housing units	177,083
All semi-permanent housing units built prior to 1920	105,792
75 per cent of all semi-permanent units built during 1921-1946	199,242
50 per cent of all permanent units built before 1920	46,802
Total	528,919

The next component of housing needs consists of households and families currently sharing accommodation and desirous of having separate units. The occupancy of housing units by more than one family or household may not always reflect an urgent housing need. This category may well include a small proportion of large housing units which are conveniently shared by more than one family. But by far the vast majority of such families or households will be involuntarily doubled-up and would be in need of separate accommodation. According to the estimates provided earlier, there were approximately 250,000 families who voluntarily or involuntarily shared accommodation with other families and

^{16/} *Housing in Sri Lanka, op.cit.*, p. 103.

this feature was seen to be more common in the rural sector. Some of the housing units occupied by more than one family could also fall into the sub-standard category of housing units needing replacement estimated earlier. Thus the two estimates cannot be aggregated without making suitable adjustment for possible duplication.

In the case of housing units with a high density of occupation, it has been shown in an earlier section that there were nearly 800,000 such units which could be considered as being overcrowded if the standard norms pertaining to the maximum number of persons to a room or the minimum average floor area per person are applied.^{17/} These estimates are comparable with the figure for single-roomed housing units numbering 745,000 which are in all probability overcrowded units, although this may not always be the case where such units have open verandahs and separate kitchens. It would not always be correct to draw the conclusion that for all dwellings with a high density of occupation the corrective action would be to construct additional housing units to relieve congestion. Additions and alterations to existing houses may be the more obvious answer in many cases.

Finally, there is the need for providing basic amenities to existing houses to up-grade them to the minimum standards which provide adequate sanitation, privacy and comfort. These needs will not, of course, be reflected in any estimates of additional housing units needed by the population. The problem here is the difficulty of prescribing clearly defined norms. It will, however, be possible to identify at least those sectors or social groups needing urgent attention in this regard.

The more obvious cases are those without toilet facilities and adequate supplies of water that are consequently exposed to grave hazards. It has already been noted that nearly 196,000 houses or 9 per cent of total housing stock are without a supply of pipe-borne water or water from wells, and nearly 760,000 units or a third of the housing stock have no toilet facilities of any sort.

The discussion so far has been confined to a broad assessment of current housing needs in terms of acceptable housing norms related to structural quality, occupancy, age and basic amenities. The

^{17/} It may be noted that a substantial proportion of the housing units classified as over crowded will fall into the category of substandard housing needing replacement and will also, in all probability, include most of the housing units accommodating two or more families. Available data, however, do not permit any finer estimates to be made.

several indicators used to quantify housing needs seem to illustrate the fact that in addition to about 500,000 existing housing units which needs replacement, there was an unmet demand in 1971 of about 600,000 housing units. Thus the backlog in housing needs in 1971 was about 1.1 million units.

In addition to the existing backlog, the expected future increase in population and consequently in the number of households will create an additional need for housing. According to the household projections given in the earlier sections, the rate of increase in household formation is likely to exceed that of population growth over the next 20 years, because any decline in fertility during this period will not affect the rate of household formation. It has thus been estimated that the number of housing units required to accommodate the additional households during the 10-year period 1971-1981 will exceed 900,000.

The current and future housing needs during the 1971-1981 period may therefore be estimated as follows:

Number of units need to clear existing backlog	600,000
Replacement of units due to obsolescence etc.	500,000
Number of units required to house new households	900,000
Total	2,000,000

The foregoing estimates indicate that in order to clear the existing backlog in 1971 in its entirety and to meet the additional requirements over the next 10 years, the annual output of housing units would have to be stepped up to nearly 200,000 units, which is more than double the current annual output.

It has, however, to be noted that the housing needs enumerated above are only intended to focus attention on the broad magnitudes of the housing problem and should not therefore be regarded as rigid estimates of future housing requirements.^{18/} They could, nevertheless, serve as useful analytical aids in planning housing programmes for the future.

^{18/} An estimate of the housing needs will have to be based on several assumptions relating to population growth, the rate of urbanization, the pattern of income distribution and other related features, each of which could be challenged and modified on alternate assumptions. For instance, according to estimates prepared by the Marga Institute, the housing needs for the period 1972-1980 amount to 1,267,000 units. This is composed of new demands of 437,600 units arising from population growth during the period and based on an occupancy rate of five persons per unit; replacement of obsolescent units at a rate of 2 per cent of the stock per year (510,400 units); and the elimination of 45 per cent of the backlog (319,000). See *Housing in Sri Lanka op.cit.*, pp. 109-110.

CHAPTER XVI

POPULATION GROWTH, NUTRITION AND FOOD SUPPLIES

A. INTRODUCTION

The problem of adequately and efficiently feeding their growing populations has been a matter of increasing concern for many of the developing countries. While the spectre of hunger and malnutrition has been raised from time to time, the developments culminating in the new seed varieties of cereals appeared to give grounds for optimism. But events of the last few years have again created doubts about the ability of many of these countries to solve their food problems. A combination of several factors, such as shortfalls in production in many countries, shrinking grain stockpiles, increased fuel prices and inflation, has contributed to food crisis. It is still not clear whether this is a temporary phenomenon or a reflection of long-term trends.

The food problem, however, cannot be viewed simply as a race between population and food supply. It is one that largely confronts the developing countries^{1/} and is essentially a manifestation of lagging economic development. The inability to increase domestic production fast enough to keep pace with population growth or to improve a country's capacity to import the requirements of food are problems that are intimately connected with the larger issues of economic development. For many countries, the food problem is just as much a demand problem as a production or supply problem. It is only through overall economic and agricultural development that the bulk of the population can secure increases in income and purchasing power and thus translate the need for more and better food into effective demand. The real problem appears to be how best to increase the intake of food amongst those segments of the population who at present cannot afford to buy from the market. Thus policies to increase supplies must be matched by policies to increase effective demand. Otherwise hunger and malnutrition will persist even when supplies become available.

As observed in chapter I, Sri Lanka, in common with many other developing countries, has in recent decades been experiencing rapid rates of population growth. It is estimated that by the year 2000 the po-

pulation could increase by as much as 50 to 100 per cent, depending on whether there will be a precipitate or gradual decline in fertility.^{2/} However, such a rapid growth of population will have a serious impact on the food and nutrition situation in the country. The basic objective of this study is, therefore, to explore the implications of population growth for food and nutrition. A number of important questions arise in this connexion. What do increases in population of the magnitude indicated above mean when translated into food needs? How can food needs in turn be translated into effective demand, and can production be made to match demand? The approach adopted here is, first, to consider current levels of food consumption and relate them to requirements and, secondly, to project requirements on the basis of population and income growth and consider the adjustments in supply necessary to meet demand.

B. PRESENT FOOD SUPPLY SITUATION

The current levels of per capita food consumption must be established and their adequacy in terms of physiological requirements evaluated before one can proceed to a discussion of the future demand for food. The lack of reliable data, however, presents a major problem in arriving at estimates of current levels of food consumption. One approach used to build up reliable information is to compare data from food balance sheets, consumption surveys and nutritional studies. Used together, they provide the necessary cross-checks and corroborative evidence.

In Sri Lanka, comprehensive information on net food supply for human consumption is available through Food Balance Sheets prepared by the Department of Census and Statistics (see table 3 and 4 in annex III). This information, in the form of annual averages for the period 1968-1970 and 1971-1973 is summarized in table 236. A considerable degree of caution must, however, be exercised in using balance sheet information.^{3/} The balance sheet is, essentially, a method of bringing together data on the supply and utilization of various individual foods available to a country in a given period of time. The supply side of a balance sheet is made up of domestic

^{1/} The problem is relatively more acute in most of the developing countries of the ESCAP region. See "Population change and development problems of the ESCAP region", in United Nations, *Quarterly Bulletin of Statistics for Asia and the Pacific*, vol. IV, No. 3, September 1974.

^{2/} See also chapter XI.

^{3/} See H.C. Farnsworth, "Defects, uses and abuses of national food supply and consumption data", *Food Research Institute Studies*. (Stanford, California), vol. 2, no. 2, 1961.

Table 236. Production, net trade and net supply of specified food commodities, annual averages, 1968-1970 and 1971-1973

(thousand metric tons)

Commodity	1968-1970			1971-1973		
	Production	Net trade	Net food supply	Production	Net trade	Net food supply
Rice	1,466.41	562.59	1,242.02	1,340.22	473.09	1,231.18
Wheat flour	-	378.12	384.49	-	392.55	394.55
Other grains	32.60	4.58	31.80	32.39	0.72	27.37
Potatoes	25.64	0.16	20.63	28.57	-	21.04
Manioc	395.03	-	276.52	436.20	-	305.34
Sweet potatoes and yams	71.46	-	50.02	68.50	-	49.95
Sugar	8.26	260.92	272.81	11.73	219.06	240.63
Pulses	5.40	70.50	73.46	6.18	23.90	28.96
Coconut (shelled)	789.99	-2.77	309.82	862.59	-2.50	400.75
Vegetables	682.25	59.66	506.94	673.32	9.38	467.16
Fruits	129.40	11.41	120.29	152.99	10.45	138.93
Beef	15.75	-	15.75	16.78	-	16.78
Poultry	2.82	-	2.82	3.41	-	3.41
Eggs	23.77	-	23.34	28.87	-	28.36
Fresh fish	127.85	-	78.09	95.89	-	59.48
Dried and salted fish	4.25	36.10	40.35	4.94	35.42	40.36
Cow's milk	105.33	-	102.79	153.89	-	145.70
Buffalo's milk	31.14	-	30.59	32.30	-	31.00
Coconut oil	115.60	-59.39	45.24	112.97	-53.81	47.70

Source: Department of Census and Statistics, *Statistical Abstracts of Ceylon* and unpublished data.

production, net trade and net changes in year and stocks. On the utilization side are: seed use, animal food, waste, industrial non-food use, processing or extraction losses and net food supply available for human consumption. Ideally, each of the component items should be computed independently, or one of them as a residual, so that the supply and utilization side balance.

However, in actual practice, reliable information is not always available in regard to several component items of the food balance sheet. The estimation of gross food production is beset with many difficulties. Complete statistical information is not collected on every single item of food production within a country. Even in the more developed countries, comprehensive information is available only in regard to the major items of food production. In these countries, although production estimates, as in the case of food grains, are based on subjective impressions of crop reporters regarding yields, it is possible to cross-check on the accuracy of the estimates since a substantial proportion of the produce passes through marketing channels and processing plants. Such checks are not possible in the case of the developing countries where food production is by and large of a subsistence nature. It is also not possible to estimate precisely the allowances that

should be made for seed use, animal feed, wastage, and stocks, especially those held by farmers, as such information is not available for developing countries.

For Sri Lanka, estimates of rice production are based on information on acreage cultivated as reported by village level officials and on estimates of per acre yields based on the results of crop cutting surveys. The likelihood of overestimation involved in such a procedure has been commented upon in the earlier study^{4/}. Production of all other foods, excepting coconuts, are based on the reports of village officials and can be subject to wide margins of error. This would be especially true of items such as roots and tubers, other grains, vegetables, fruits, eggs and poultry, where production is largely of a subsistence nature. The estimates of meat production are based on licensed slaughterings reported by local bodies. Coverage is not complete and illegal slaughterings cannot be ruled out. Data on fish production are based on records maintained by the Department of Fisheries and here again coverage does not appear to be complete. Milk production in the island is arrived

4/ Thambapillai, Jogaratnam and Thomas J.T. Poleman, "Food in the economy of Ceylon", *Cornell Institute of Agricultural Development Bulletin*, No. 11, 1969.

at by applying average production figures to numbers of cattle and is therefore subject to error. In the case of coconuts, production data is not independently arrived at. It is partly based on export data and partly on estimates of *per capita* consumption derived from consumer surveys. Information on several of the other component items of the food balance sheet, such as seed use, animal feed, wastage and stocks held by farmers are practically non-existent.

Despite these drawbacks, a cautious use of the food balance sheet data can still provide valuable information. This is especially true for Sri Lanka where a few basic commodities constitute the bulk of the food supply and where information on imports of food, which account for a sizeable proportion of the total food supply, is generally considered to be reliable.

As will be shown later, the cereals, (principally rice and wheat flour) sugar, pulses and fish constitute the major items in the food supply. The relative contribution of domestic production and imports to total availabilities are indicated in table 237. Though

as well as imports of wheat flour, sugar and pulses, all of which account for well over 75 per cent of the total food supply, could therefore provide reasonably accurate information on total food availabilities. While less reliable information is available on the other component items of the food balance sheet, reasonable approximations can be arrived at for these items. Furthermore, all of these items together constitute only a small proportion of production and it is unlikely that errors in estimating them would seriously distort the final conclusion.

C. CONSUMPTION ESTIMATES

The reliability of production data from the food balance sheet can also be assessed by cross-checking with information from consumer budgetary surveys. In doing so, one must also bear in mind the limitations of such surveys. Consumption data are primarily derived from sample surveys and errors both of a sampling and non-sampling nature can easily be introduced. Tests of representativeness as well as of internal consistency can, however, be used to obtain some idea of the over-all reliability of such data.

Table 237. Relative contribution of domestic production and imports to total availabilities of selected food items, per head per year, Sri Lanka, 1948-1952, 1964-1968 and 1968-1969

Food items	(kilogram)					
	1948-1952		1964-1968		1968-1969	
	Domestic production	Imports	Domestic production	Imports	Domestic production	Imports
Rice	34.0	53.8	51.6	39.7	63.5	23.2
Wheat flour	-	24.5	-	29.8	-	33.1
Sugar	-	16.2	-	21.1	-	22.1
Pulses	-	3.1	-	6.5	-	5.7
Fish	1.4	4.5	3.9	3.7	11.5	8.8

Source: Dept. of Census & Statistics, *Statistical Abstracts of Ceylon*.

statistical information is available in regard to all food items produced locally, data on domestic production of rice appear to be the most reliable. The share of domestic production in total rice availabilities has varied from about 40 per cent in the immediate post-war years to about 70 per cent currently. In the case of the other food items such as wheat flour, sugar, pulses and fish, imports are of major importance. Thus estimates of food supply arrived at on the basis of data on domestic production and imports of rice,

Consumption data for Sri Lanka are available from consumer surveys carried out by the Department of Census and Statistics^{5/} and by the Central Bank of Sri Lanka^{6/}. Other studies attest to their over-all

^{5/} *Government of Ceylon, Preliminary Report of the Socio-Economic Survey of Ceylon 1969/70* (Colombo, Department of Census and Statistics, 1971).

^{6/} *Survey of Sri Lanka's Consumer Finances 1953, 1963, 1973* (Colombo, Central Bank of Ceylon)

representativeness and the internal consistency of the data^{7/}. In general, however, household budgetary surveys tend to understate consumption. For Sri Lanka, this is mainly because they either ignore consumption outside the household or because such information may not be reliable. The consumer survey data also ignore seasonal variation, since data on food consumption are normally collected over a limited period of time, usually extending from about one week to one month, and then blown up to yearly totals. Since the surveys referred to above were carried out before the major harvesting season, this may again understate consumption.

Table 238 compares information on *per capita*

search Institute (MRI) of Sri Lanka. Given the limitations of both production and consumption data, as discussed earlier, the close correspondence between the two sets of data appears to be quite striking.

Food balance sheet data indicate a higher net availability of rice, in comparison with budgetary survey data. This is to be expected given the likelihood of overestimation of production data and underestimation of consumer survey data. A more realistic figure would lie between the food balance sheet and consumer survey estimates. Where the entirety, or the bulk of the commodity is imported, as in the case of wheat flour, sugar and pulses, the

Table 238. Apparent availabilities of selected food items, by different source, and recommended allowances for Sri Lanka, 1968-1973

(Kilograms per head per year)

Item	Food balance sheet data		Consumer survey data		Recommended allowances ^{e/}
	1968-1970 ^{a/}	1971-1973 ^{b/}	1968-1970 ^{c/}	1973 ^{d/}	
Rice	101.35	94.85	93.95	86.55	} 127.02
Wheat flour	31.42	30.29	34.01	31.00	
Other grains	2.59	2.11	3.10	...	
Potatoes	1.68	1.62	1.85	...	} 40.15
Manioc	22.62	23.42	5.12	...	
Sweet potatoes and other yams	4.08	3.83	1.80	...	
Sugar	22.57	18.66	17.85	11.00	10.95
Pulses	5.99	2.24	5.66	...	10.95
Beef	1.29	1.29	2.12	...	3.65
Milk	10.90	15.07	8.60	...	21.90
Fish	9.70	7.80	12.14	...	24.82
Coconuts	25.24	31.74	31.87	...	23.73
Coconut oil	3.69	3.68	4.50	...	4.75

Notes: a/ Government of Ceylon, *Statistical Abstracts of Sri Lanka* (Colombo, Department of Census and Statistics).

b/ Department of Census and Statistics.

c/ Government of Ceylon, *Preliminary Report on the Socio-Economic Survey of Ceylon 1969-70* (Colombo, Department of Census and Statistics, 1971).

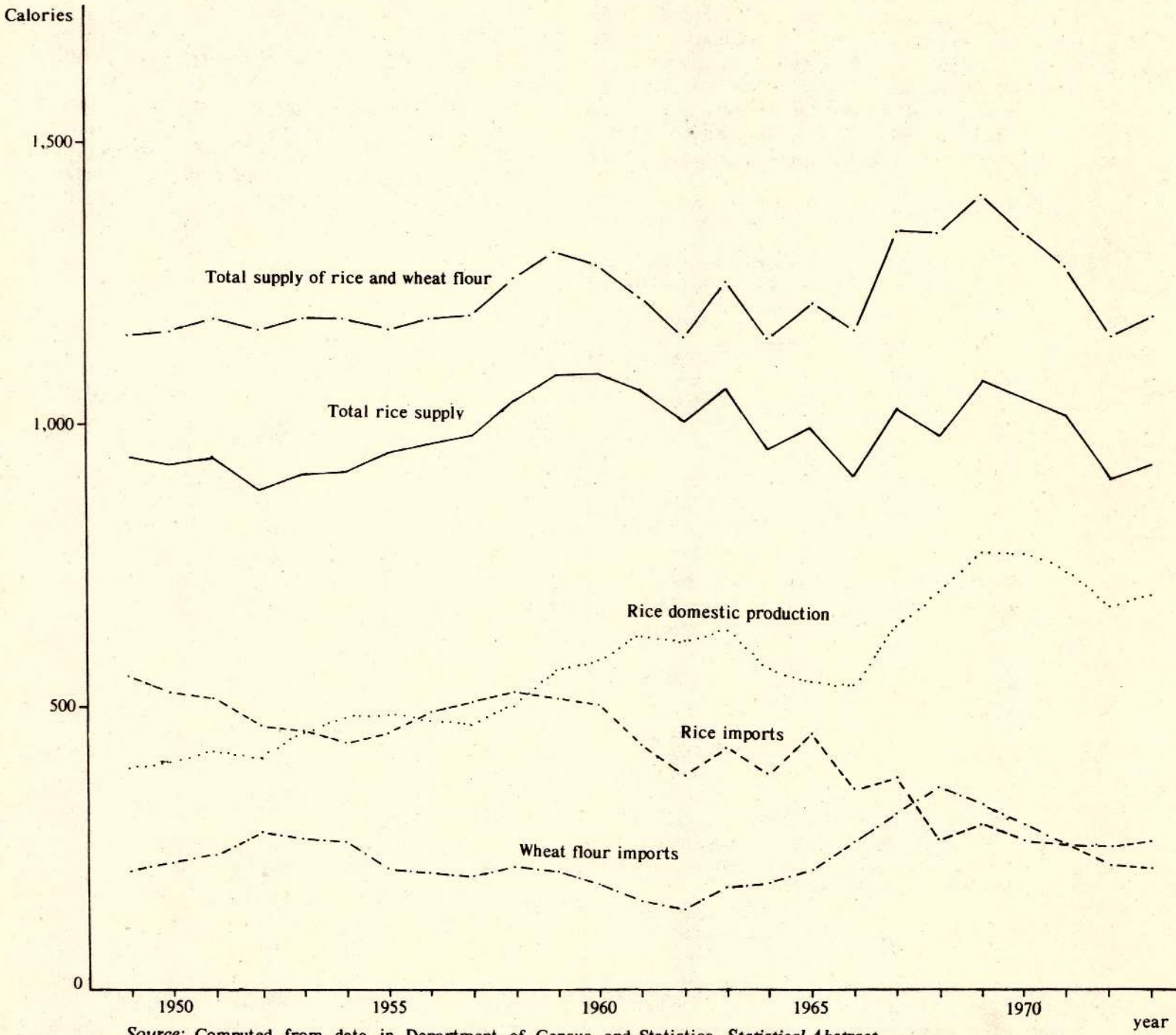
d/ *Survey of Sri Lanka's Consumer Finance 1973* (Colombo, Central Bank of Ceylon, 1974).

e/ Medical Research Institute of Sri Lanka

consumption of selected food items derived from the consumer surveys with data from food balance sheets. Also shown are the average requirements of these food items as computed by the Medical Re-

food balance sheet estimates are likely to be more accurate. In the case of pulses, the two estimates are very close. The margin is larger in the case of sugar, with the consumer survey estimate being the lower. This may possibly be due to consumption outside the household which is likely to be relatively high in the case of sugar not being included in the survey estimate. In the case of wheat flour, however, the higher estimate is given by the Consumer Sur-

^{7/} Thambapillai Jogaratnam and Thomas T. Poleman, *loc. cit.*; Thomas T. Poleman and others, "The effect of income on food habits in Sri Lanka", *FAO Nutrition Newsletter*, vol. 11, No. 3, July-Sept 1973.



Source: Computed from data in Department of Census and Statistics, *Statistical Abstract* (various issues); and Central Bank of Ceylon, *Annual Report*, (various issues).

Figure 22. Caloric availability per head per day for specified items, three year moving average, 1948-1974

vey. This can only be explained in terms of a higher level of consumption during the period of the survey. This again is possible because rice consumption may have been low at the time of the surveys, which coincided with the pre-harvesting period, and this may have been offset by higher levels of wheat flour consumption.

Relatively wide discrepancies occur between the two sets of data in the case of manioc, sweet potato, beef, milk and fish. Several other categories of foods such as vegetables, fruits and condiments are not shown in the table. They are relatively unimportant as suppliers of energy, but must be considered important as suppliers of vitamins and minerals. Production figures in all these cases can at best be only reasoned guesses because of the wide variety involved and the essentially subsistent nature of production, except perhaps in the case of condiments such as chillies and onions. In the case of almost all these items, the consumer surveys are likely to be the more reliable sources of information.

A comparison of the data between 1968-1970 and 1971-1973 indicates a relative deterioration in the food supply situation. This is most pronounced in the case of rice, sugar, pulses and to a smaller extent in regard to wheat flour and fish. Food balance sheet estimates of milk and coconuts, however, show an increase. Unfortunately this cannot be cross-checked in the absence of consumer survey data. In terms of the over-all supply of calories and protein, there appears to be a decrease of about 50 calories and 3 grams of protein per head per day over this period. This deterioration in the food supply is primarily due to adverse weather conditions, which led to a fall in rice production, and to foreign exchange constraints which led to the curtailment of imports of rice, wheat flour, sugar and pulses. However, in terms of food availabilities in the period since the Second World War especially in terms of cereal consumption, there has been no marked change. Thus over the period 1950-1973, despite yearly fluctuations, *per capita* cereal consumption appears to have been fairly stable. Changes in the price and availability of rice and wheat flour have influenced the relative levels of consumption of these two major cereals. But the contribution of imports to total grain supply has declined by about 250 calories per head per day on the average and this has been more than offset by domestic rice production (see figure 22).

D. NUTRITIONAL STATUS

The discussion so far has aimed at establishing the

levels of consumption of food in Sri Lanka. The production of food, however, is governed by effective market demand, irrespective of what the physiological need may be. The critical issue is whether the level and composition of the food items indicated by effective demand will equal those required to meet the physiological needs. It is therefore necessary to evaluate the available food supply in terms of nutritional requirements.

The available evidence indicates that food supplies have been sufficient on average to meet nutritional requirements. Both food balance sheet and consumption data indicate an average supply of about 2,200 calories and 45 grams of protein per head per day.^{8/} This approximates the food requirements as computed by MRI. The food supply, however, is characterized by an overwhelming dependence on starchy staples and vegetable fats. The main features of the food supply are summarized below in percentage terms:

Food group	Calories	Protein
Cereals	59.7	61.2
Rice	44.6	40.8
Wheat flour	14.0	19.1
Roots and tubers	3.7	1.5
Sugar	10.6	0.3
Pulses	2.6	10.2
Coconut (shelled)	12.5	4.6
Fruits and vegetables	2.3	3.2
Meat	0.3	1.4
Fish	2.3	14.2
Eggs	0.3	1.2
Milk	1.7	3.4
Fats and oils	4.1	-
Coconut oil	4.0	-

The starchy staples, including sugar, supply about three-fourths of the calories in the average diet, with rice alone accounting for 45 per cent. Coconuts and coconut oil supply another 16.5 per cent, while the contribution of animal foods is very minor. Over 60 per cent of the protein supply comes from the cereals, with fish and pulses supplying another 14.5 per cent and 10.2 per cent respectively. Milk and meat together constitutes only about 5.0 per cent of the total protein supply.

The over-all adequacy of the diet, suggested by availabilities approximating requirements, is how-

^{8/} Thomas T. Poleman and others, *loc.cit.*

Table 239. Percentage of adequacy^{a/} of some nutrients by income class, Sri Lanka

Nutrients	<i>per capita</i> daily recommended allowance for Sri Lanka.	Income class (Rs per head per month)							All income classes
		Below Rs 100	Below Rs 200	Rs 200-399	Rs 400-599	Rs 600-799	Rs 800-999	Rs 1,000- and over	
Calories	2,000	88	94	103	111	114	116	120	103
Protein (g)	45	89	105	120	130	135	138	147	120
Calcium (mg)	519	-	-	-	-	-	-	-	72
Iron	23	-	83	86	93	94	97	97	86
Vitamin 'A'	642	-	109	109	112	121	121	131	111
Riboflavin	1,220	-	51	56	62	69	75	82	57

Source: Thomas T. Poleman and others, "The effect of income on food habits in Sri Lanka," *FAO Nutrition Newsletter*, vol. 11, No. 3, July/Sept 1973.

Note: ^{a/} The adequacy of the diet in respect of any nutrient is determined by expressing consumption of the nutrient as a percentage of the recommended allowances on a *per capita* per day basis. The recommended allowances for Sri Lanka as estimated by the Medical Research Institute of Sri Lanka are shown in the first column and the adequacy for each nutrient is given under each income class.

(-) Detailed breakdown not available for computing adequacy.

Table 240. Apparent *per capita* daily nutrient availabilities, lowest income group by urban, rural and estate sectors^{a/}, Sri Lanka, 1969/70

Food group	Urban		Rural		Estate		Whole country	
	Calories	Protein	Calories	Protein	Calories	Protein	Calories	Protein
Cereals	1,030.5	23.2	1,155.4	25.5	1,212.4	28.3	1,117.5	24.5
Rice	747.7	14.4	863.7	16.6	811.2	15.6	847.1	16.3
Wheat flour	266.1	8.4	251.0	8.0	394.3	12.5	237.6	7.5
Other cereals	16.7	0.4	40.7	0.9	6.9	0.2	32.8	0.7
Roots and tubers	14.2	0.1	44.5	0.3	15.9	0.0	37.3	0.1
Sugar	181.4	0.0	167.3	0.1	148.7	0.1	165.7	0.1
Oils and oil-bearing nuts	442.1	3.4	462.0	3.9	480.0	3.4	462.5	3.7
Pulses	38.4	2.9	44.2	3.6	83.6	6.0	49.7	3.7
Fruits and vegetables	23.8	0.9	25.8	0.8	24.8	1.0	23.6	0.8
Meat	7.2	1.4	3.5	0.5	5.1	0.7	3.6	0.6
Fish	37.5	6.7	29.8	5.7	32.1	5.9	30.7	5.8
Milk and milk products and eggs (Except butter)	22.6	1.2	13.5	0.7	36.2	1.9	17.6	0.9
Others	103.8	4.4	153.0	5.4	216.6	6.9	155.4	7.2
Total	1,901.5	44.2	2,099.0	46.5	2,255.4	54.2	2,063.6	47.4

Source: Same as table 239.

Note: ^{a/} The lowest income group draws incomes of less than Rs 200 per head per month.

Table 241. Some nutrition intakes *per capita* per day, rural low income, Sri Lanka, 1969-1971

	1969	1970	1970	1970	1971	1971	1971
	Kudirippuwa ^{a/}	Hirigol-lagama ^a	Hiripitiya ^{a/}	Kukulpone ^{a/}	Kataragama ^{a/}	Kandalama ^{a/}	Ganthiriya-gama ^{a/}
Calories	2,080	2,018	1,979	1,863	1,721	2,310	1,955
Total proteins (g)	53	45	50	43	39	58	51
Animal protein (g)	15.7	7.8	12	7	4	6	11
Range (g)	(6-25)	(1-24)	(2-23)	(2-22)	(0-14)	(0-34)	(2-15)
Calcium (mg)	405	219	391	280	354	347	357
Iron (mg)	19	18	16	13-5	19	20	18
Vitamin A as retinol (mcg)	455	286	745	494	626	510	683
Riboflavin (mcg)	650	544	648	527	618	882	800

Source: *Dietary Surveys, Sri Lanka 1969-1971* (Colombo, Department of Nutrition, Medical Research Institute) cited in Thomas T. Poleman, and others, "The effect of income on food habits in Sri Lanka", *FAO Nutrition Newsletter*, vol. 11, No. 3, July-Sept 1973.

Note: ^{a/} Forty households random sampled out of about 200 households in each village.

Table 242. Prevalence of protein-calorie malnutrition (PCM) in pre-school children, by district, 1974
(percentage)

Protein-calorie malnutrition	Colombo	Kalutara	Galle	Matara & Hambantota	Kurunegala	Puttalam & Chilaw	Anuradhapura & Trincomalee	Jaffna	Mannar & Vavuniya	Batticaloa & Amparai	Kegalla	Matale	Kandy & Nuwara Eliya	Badulla	Ratnapura	Total
Moderate 2nd degree	37	28	35	31	37	..	19	42	10	30	..	34	42	30	31	36
Severe 3rd degree	16	10	12	26	52	..	2	12	3	10	..	13	18	5	12	14
Total	53	38	47	57	15	..	21	54	13	40	..	47	60	35	43	50
Marasmus	3.0	0	0.4	2.1	3.3	..	-	0.4	-	2.4	..	-	3.0	..	3.0	2.3
Kerashioriker	0.5	0	0.4	0	0.3	..	-	0.4	-	0.6	..	-	1.0	..	0.0	0.46

Source: CARE/MRI Sample Survey of 2,059 pre-school children, October 1974; WHO Consultant Dr. Tantengco, Sample Survey of 1947 pre-school children, July 1972, MRI Community Health Programme, Survey of 4,000 pre-school children, 1972.

Notes: (...) Figure not available.
(-) None.

ever misleading. In equating availabilities to requirements, an even distribution is assumed. What in fact is likely to occur is a normal distribution with underconsumption by a part of the population, presumably the poor. What one really needs to know is how serious such underconsumption is and to identify the groups that are affected.

A major limitation of food balance sheet data lies in their inability to shed light on this problem. Data from the 1969-1970 Socio-Economic Survey,^{9/} however, enable an evaluation to be made by income groups. The relevant information is presented in table 239. Based on the allowances recommended by MRI, there appears to be a considerable degree of under-nourishment amongst those households receiving incomes of less than Rs 200 per month. Even in the Rs 200 to Rs 400 group, the diet appears to be only marginally adequate. These two income groups account for about 36 per cent and 40 per cent of the population, respectively.

A breakdown of the data by urban, rural and estates sectors throws more light on the nutritional status of the lowest income group (see table 240). The urban poor are shown to be worst off, with the rural and estate low income groups faring better. Consumption of wheat flour and pulses appears to be relatively high in the estate sector. The relative importance of items in the "Other" group, consisting of alcoholic and non alcoholic beverages, betel and arecanuts, and condiments, may also be noted.

The findings of the Socio-Economic Survey are confirmed by the results of some rural dietary surveys carried out by MRI, the results of which are set out in table 241. These reveal an inadequacy of calories, calcium, iron and riboflavin and confirm the existence of a protein-calorie deficiency amongst the low income groups.

More recent nutritional studies enable an assessment of the nutritional situation on a geographical basis (see table 242). The districts of Kandy, Nuwara Eliya, Colombo, Jaffna, Kurunegala, Matara and Hambantota are shown to be the most disadvantaged. Kandy and Nuwara Eliya are in the estate sector, but the rural population in these two districts is also characterized by a predominance of extremely small holdings and an outmoded land tenure system. Colombo and Jaffna could be considered to be more urban than rural, while the other three districts would appear to suffer from the small size of individual

^{9/} This survey was conducted by the Department of Census and Statistics. See annex I for details.

holdings and a very low level of water resource management. In addition to these factors, it is also possible that the relative deterioration in the food supply position has affected the urban and estate sectors more than the rural sectors. Problems in the supply and distribution of flour and pulses affect the estate sector most and another recent study points out to the existence of high levels of protein-calorie deficiency in the estate areas.^{10/} More evidence is required on the effect of the deterioration in food supply over the period 1968-1970 to 1971-1973, but provisional data appears to indicate that for the country as a whole and particularly on the estates, the infant mortality rate in 1974 was one of the highest on record for the last 10 years.^{11/}

The data from the Socio-Economic Survey also bring out clearly the effect of income on the diet. The apparent *per capita* daily intake of calories progressively increases with increasing incomes, from about 2,060 calories in the lowest income group to about 2,600 calories in the highest income group. The protein intake increases from about 47 grams to over 65 grams with the animal protein component varying from 7.7 grams to about 20 grams.^{12/} The apparent adequacy of protein intakes for low income groups may be misleading, given the possibility of a calorie deficiency.

The general experience in the more developed countries has been for the preferred foods such as dairy products, meat, vegetables and fruits to replace the starchy staples as suppliers of both calories and protein as incomes increase. But this does not appear to happen in Sri Lanka. The contribution of the cereal group continues undiminished over the entire income range, except the very highest which accounts for only about 2 per cent of all households. The dominance of rice in the diet is thus clearly brought out.

It must also be pointed out that consumption patterns have been considerably modified by government action. Nutrition intervention programmes of various types have been in operation, with the government consumer food subsidy programme being by far the largest, covering the entire population. It is estimated that during the period 1968-1970, when two pounds

^{10/} Brian Senewiratne, "The health of plantation workers", unpublished draft, 1974, quoted in Paul Casperz, "The internal structure and organization of the tea industry", *Marga*, vol. 2, No. 4, 1975.

^{11/} See annex III, table 1.

^{12/} Thomas T. Poleman and others, *loc.cit.*, chart 5

of rice was issued per person per week free of cost, each individual benefited by as much as 450 calories and 8.0 grams of protein per head per day. Since then, there has been a cut in the subsidy programme and currently it is estimated that over 12 million beneficiaries receive about 240 calories and 4.5 grams of protein per head per day. Other programmes such as the Family Health Programme of the Ministry of Health, the School Lunch Programme of the Ministry of Education and the programmes of the United Nations Fund for Population Activities (UNFPA) and the World Food Programme of Food and Agricultural Organization of the United Nations (FAO) are aimed at reaching the nutritionally malnourished, especially the vulnerable groups such as pregnant mothers and young children.^{13/} The "Thripasha" programme of the Ministry of Health delivers a precooked, fortified weaning food called Thripasha to a currently estimated 175,000 seriously malnourished. The school feeding programme is also estimated to cover around 1 million primary school children. The impact of all these programmes must be kept in mind in assessing the nutritional status of the current food supply position.

A comparison of average food availabilities and the recommended allowances, as indicated in table 237 is also illustrative. On the whole, the availabilities of cereals would appear to be sufficient to meet the recommended allowances, but the availabilities of yams and tubers fall far short. Consumer preference would indicate a shift from yams, tubers and the so-called inferior grains to rice and wheat flour, and to this extent an increased availability of rice and/or wheat would be called for. Sugar consumption in Sri Lanka has always been relatively high, especially in comparison with countries of South and South east Asia and it is only the drastic price increases effected in recent years that has brought consumption in line with the recommended allowances. The availabilities of protein rich foods such as pulses, fish, meat and milk are also far short of recommended allowances. To the extent that such commodities substitute for each other in the diet, it should be possible to vary the allowances for individual items, provided that the over-all requirement of dietary protein is met. In the case of coconut products, availabilities on average are above the recommended allowances.

E. FUTURE FOOD REQUIREMENTS

Projections of future food requirements depend

^{13/} See Beatrice V. de Mel, "Nutrition planning and national development" paper presented to the CARE/USAID sponsored Nutrition Workshop, New Delhi, Jan. 1975.

not only on an assessment of present levels of consumption and their adequacy but also on an analysis of the probable effects of population growth, income increases, price changes and numerous other variables such as distribution, technology, consumer tastes and governmental policies all of which influence the level and structure of future requirements. Many of these factors are difficult to measure and long range projections of food consumption generally take into account only the effect of changes in population and incomes. For developing countries in general, the population effect is held to be more important than the income effect because rates of growth of population have been much more rapid than increases in *per capita* incomes.

1. Population and food

Changes in the absolute size of the population as well as in age composition and geographical distribution will influence the future requirements of food. The rate of growth of population is determined by mortality, fertility and net migration. Population projections are based on assumptions regarding the future behaviour of these rates. It is not intended here to attempt any detailed analysis of future rates of population growth. Rather, reliance is placed on population projections for Sri Lanka made by two recent studies.^{14/} The results of these projections which were independently arrived at, are briefly summarized in table 243.

Assuming all other factors influencing *per capita* consumption constant, it may be concluded that the aggregate demand for food would increase by as much as the increase in population. This, however, would be to ignore the effect of changes in the age composition and geographical distribution of the population. The effect of changes in the age structure of the population on consumption patterns are generally held to be negligible over a period of about 25 years, though commodities such as milk foods, where consumption is strongly correlated with age, may be an exception. Further, people who shift from rural to urban areas become, in general, more dependent on purchased foods. A whole range of foodstuffs not previously available to them become accessible. The ready-to-eat foods like bread become popular, while bulky items such as roots and tubers may not be readily available. Urbanization

^{14/} CICRED, *The Population of Sri Lanka* (Colombo, Department of Census and Statistics, 1974); *Sri Lanka: Country Prospects* (New York, The Population Council, 1974). For detailed discussions of these projections, see chapter XI.

Table 243. Population projections for Sri Lanka, 1971-2001
(thousands)

Department of Census and Statistics ^{a/}				Population Council ^{b/}			
Year	High	Medium	Low	Year	P2	P3	P4
1971	12,800	12,800	12,800	1970	12,100	12,100	12,100
1981	16,000	15,800	15,300	1980	14,600	15,300	15,500
1991	20,000	18,900	17,200	1990	16,600	18,800	19,500
2001	24,700	21,800	19,300	2000	18,700	21,800	23,600

Notes: ^{a/} CICRED, *The Population of Sri Lanka* (Colombo Department of Census and Statistics, 1974), table 6.1.

^{b/} *Sri Lanka: Country Prospects* (New York, The Population Council, 1974).

Table 244. Nutritional intakes and quantities of specified food crops consumed, by urban, rural and estate areas, Sri Lanka, 1969/70

		Urban	Rural	Estate
Calories- <i>per capita</i> per day	2,161	2,268		2,425
Protein-Grams <i>per capita</i> per day				
Total	52.2	51.2		61.6
Animal	13.2	10.1		9.4
Vegetable	39.0	41.1		52.2
Cereals		Pounds per month		
Rice	15.45	17.85		16.42
Wheat flour	1.61	2.58		11.69
Bread	5.58	3.71		1.34
Starchy roots	0.94	1.88		1.01
Sugar	3.69	3.29		2.58
Pulses	0.90	0.97		1.80
Coconuts (number)	7.01	7.80		6.07
Meat	1.15	0.40		0.46
Eggs	2.81	1.27		1.01
Fish	2.94	2.24		1.03
Milk, fresh (bottles)	1.25	0.75		1.94
Milk products	0.45	0.22		0.17
Coconut oil (bottles)	0.54	0.47		0.70

thus leads to the emergence of new patterns of food consumption. If urbanization is associated with increased incomes, it could be expected to lead to an improvement in the diet. But it has been observed very often that the migration of low income rural people to urban areas leads to a deterioration in their diet.^{15/} Thus increasing urbanization may be associated with increasing malnutrition.

Many of the developing countries have been faced with the problem of rapid urbanization, but fortunately for Sri Lanka the pull to the cities has not been as great. Data nevertheless show a steady, though slow, increase in the country's urban population.

Problems arise in the definition of urban and rural areas, but subject to such limitations, it can be seen that, according to the 1971 census, more than a fifth of the population can be classed as urban.^{16/}

The Socio-Economic Survey provides some information on the patterns of food consumption in urban, rural and estate areas. The results are summarized in table 244. While calorie levels are higher in the rural and estate sectors, the consumption of total protein is marginally higher in the urban sector compared with the rural sector, but is much lower than the estate sector. The consumption of animal protein is however larger in urban than in rural and estate

^{15/} FAO, "The impact of urbanization on food demand", *Monthly Bulletin of Agricultural Economics and Statistics*, (Rome), vol. 22, No. 9, September 1973.

^{16/} See chapter IV.

areas. The consumption data in regard to different food groups indicate that the lower level of rice and wheat flour consumption is offset to some extent by the much higher levels of bread consumption. The consumption of meat, eggs, fish and milk products are all higher in the urban sector while the consumption of starchy roots is much less important.

One may therefore conclude that the impact of urbanization would be to lead to higher levels of food consumption, especially of the more expensive animal products and perhaps fruits and vegetables, relative to the consumption of rice and yams and other tubers.

2. Income and food consumption

Income is the other major variable influencing future food requirements. The relationship between income and food consumption is summarized in Engel's well-known law which states that the proportion of income spent on food declines with increases in income. This may however not hold true at very low levels of income, below the so-called poverty line. Since the primary consideration in the consumption of food is the satisfaction of hunger, low levels of income are characterized by proportionately higher levels of expenditure on food. It also follows that at low levels of income the diet is likely to consist of a high proportion of cereals and starchy staples because of the relative cheapness of these items as suppliers of calories. Once hunger is appeased, increased incomes tend to result in the consumption of a more expensive and varied diet consisting principally of dairy foods, meats, fruits and vegetables. Thus dietary patterns exhibit a shift in demand from starchy staples to preferred foods as incomes increase. However, the changes in demand vary widely for different foods and for different ranges in the income scale. This relationship however, does not seem to hold good for all societies or at all stages of development. It is influenced greatly by the food habits and preferences of a particular people.^{17/}

The income-consumption relationship for different foods can be expressed as elasticity coefficients which are valuable tools in estimating future rates of growth in food consumption. Thus, the rate of growth in demand for food is commonly computed as the sum of the population growth rate and the product of the income elasticity of demand for food

^{17/} Thomas T. Poleman, "The food economics of urban middle Africa: the case of Ghana", *Food Research Institute Studies*, (Stanford, California); vol. 2, No. 2, 1961.

and the relative change in *per capita* income. Such projections can, however, be misleading. Some elasticity coefficients computed for Sri Lanka are presented in table 245. These are computed on the basis

Table 245. Elasticity coefficients for selected food items by different sources

Commodity	FAO ^{a/}	Jogarathnam & Poleman ^{b/}	Consumer Survey 1973 ^{c/}
Rice	0.40	0.13	0.19
Wheat	0.40	0.77	0.51
Meat	1.26	2.18	1.89
Fish	0.70	0.64	0.86
Eggs	...	3.74	1.70
Milk	1.00	2.47	1.41
Sugar	0.70	0.51	0.46
Pulses	0.15	0.55	...

Notes: a/ FAO, *Agricultural Commodity Projections 1970-1980*, vol. 1 (Rome, 1971).

b/ Thambapillai Jogarathnam and Thomas T. Poleman, "Food in the economy of Ceylon", *Cornell Institute of Agricultural Development Bulletin*, No. 11, 1969.

c/ *Survey of Sri Lanka's Consumer Finances 1973* (Colombo, Central Bank of Ceylon, 1974).

of data from cross-section budget studies. The data relate to expenditure at the retail level and the effect of rising incomes is greater at the retail level than at the farm level. Furthermore, expenditure elasticities are greater than quantity elasticities. This is because quantity elasticities leave out the effects of shifts to higher quality or more highly processed foods. For purposes of planning agricultural production, the effect of income changes on quantities purchased is more relevant.

Cross-section analysis is essentially a static analysis based on the assumption that income changes are the only variable affecting consumption. A time-series analysis, on the other hand, attempts a study of the variations in consumption by the whole population over long periods of time. Unfortunately, reliable time-series data are rarely available for the developing countries and the income consumption relationship has therefore to be analysed on the basis of cross-sectional surveys.

It must, however, be pointed out that to the extent that cross-section data fail to reflect long-term changes such as urbanization, technological changes including higher levels of consumption and changes in income distribution as well as occupational composition, the elasticity coefficients from cross-section data will deviate from time-series estimates.

The impact of urbanization on food consumption

has already been noted. Its effect, in general, would be similar to a rise in incomes. A redistribution of income, on the other hand, would tend to have the opposite effect. One can in general expect a higher elasticity at lower levels of income than at higher levels. A more equitable distribution of income could therefore be expected to increase the share of goods with income elasticities below 1 and reduce the share of goods with elasticity above 1.^{18/} In other words, given the existing pattern of food consumption, with the heavy dependence on cereals and starchy staples, a redistribution of income could be expected to increase consumption of essential commodities while the demand for preferred foods may not grow as rapidly.

Demand projections also commonly assume constant prices. Recent findings, however, emphasize the importance of price elasticities in influencing consumption patterns in developing countries.^{19/} Demand appears to be relatively elastic to price and small changes in relative prices may lead to relatively large changes in demand. There is very little information on the response of low income groups to changes in price. Furthermore, it is not possible to predict the nature of price relationships in about 25 years time. This would depend on the prevailing supply and demand relationships. To the extent that supply conditions improve and lead to a decline in real prices, the consumption of grains may increase by much more than anticipated. If, however, there is pressure on supply leading to an increase in prices, consumption of essential items is likely to be maintained at the expense of the more costly preferred goods.

It is clear from the foregoing discussion that the net effect of changes in factors such as incomes, prices, technology etc. are hard to predict. In the past, the effect of such changes has been negligible presumably because they cancelled each other out. There is little evidence of any major changes in the pattern and level of food consumption in Sri Lanka. Thus over the period 1950 to 1970, despite yearly fluctuations, *per capita* cereal consumption appears to have been remarkably stable (see figure 22). Changes in the price and availability of rice and wheat

have however influenced the relative levels of consumption of these two major cereals.

While *per capita* real incomes are estimated to have increased by 1.8 per cent *per annum* over the period 1959-1973, other changes appear to have more than offset the effect of increasing incomes. Consumption of food in real terms is estimated to have increased by 2 per cent over the period 1953-1963, but declined by about 1.4 per cent from 1963 to 1973. Individually, rice consumption declined by 15 per cent, meat by 64 per cent, eggs by 31 per cent, milk by 24 per cent, milk products by 48 per cent and sugar by 6 per cent. On the other hand, consumption of wheat flour increased by 24 per cent, other cereals by 10 per cent, fish by 7 per cent, vegetables by 23 per cent and coconuts by 11 per cent.^{20/} It would therefore appear that estimates of future requirements based on population and income changes alone may not be too realistic. It must, however, be pointed out that demand projections commonly assume constant prices, but to the extent that supply-demand imbalances arise, the projections themselves may not be realized.

Demand projections again take into consideration only market demand. But the problem of alleviating hunger and malnutrition lies in matching requirements and effective demand. In the long run, the solution appears to lie in raising the levels of income of the poorer sections. It is doubtful whether such income increases can be sufficiently large and rapid to bring about nutritional improvements amongst the low income groups.^{21/}

The procedure adopted here, however, is to present projections of future requirements of food on the basis of alternative assumptions of *per capita* requirements. Three projections A, B and C are presented (See table 246). Medium population projections are used to estimate aggregate demand. Projection A assumes that *per capita* requirements will remain constant over the entire period 1970-2000. Average levels of *per capita* consumption obtained during the period 1968-1970 and adjusted on the basis of the comparison between food balance sheet and consumer survey data are used for this projection. Projection B assumes that nutritional levels will reflect gradual improvements and that by the year 2000, the allowances recommended by

^{18/} N.S. Iyengar, "Effects of growth and redistribution of income on consumer demand", *Economic and Political Weekly*, (Bombay), vol. 5, No. 32, August 1970.

^{19/} Richard Weishoff, "Demand elasticities for developing economy: an international comparison of consumption patterns", in Hollis B. Chenery (ed.), *Studies in Development Planning* (Cambridge, Mass.; Harvard University Press, 1971).

^{20/} *Survey of Sri Lanka's Consumer Finances 1973*, (Colombo, Central Bank of Ceylon, 1974).

^{21/} Alan Berg, *The Nutrition Factor*, (Washington, D.C., The Brookings Institution, 1973).

Table 246. Projected *per capita* consumption and total requirements of specified food items in the year 2000, with 1970 estimates for comparison

Commodity	Per capita 1970	Consumption 2000			Projected requirements for 2000			Projected rates of increase in total requirements		
		A	B (kilogram)	C	A	B (million metric tons)	C	A	B (percentage)	C
Rice	100	100	120	130	2.18	2.62	2.84	1.9	2.5	2.8
Wheat	30	30	10	-	0.65	0.22	0.00	1.9	-1.9	0.0
Pulses	6	6	12	12	0.13	0.26	0.26	1.9	4.3	4.3
Beef	2	2	4	4	0.04	0.09	0.09	1.9	4.3	4.3
Milk	10	10	20	20	0.22	0.44	0.44	1.9	4.3	4.3
Fish	16	16	25	25	0.35	0.55	0.55	1.9	3.4	3.4
Sugar	23	23	12	12	0.50	0.26	0.26	1.9	-0.3	-0.3
Coconuts	30	30	25	25	0.65	0.55	0.55	1.9	1.3	1.3

Note: See text for discussion.

MRI will be attained. Projection C relates only to rice consumption and projects requirements of rice to achieve self-sufficiency, defined as the satisfaction of requirements from domestic sources and the elimination of all imports of food grains, including rice and wheat flour.^{22/}

It must however be mentioned that the demand for food grains as related to income, and food needs as related to nutritional requirements, have been about equal in the past. Where foodgrains are concerned, it is only the relative contributions of rice, wheat flour and other grains that are projected to change. Projection A assumes that the relative levels of consumption of rice and wheat flour will remain unchanged. Projection B assumes that the levels of *per capita* wheat flour consumption will decline by the year 2000 to about one-third of the 1968-1970 levels and that this will be compensated by increased consumption of rice. Projection C assumes that the entire wheat flour component of foodgrain consumption will be replaced by rice from 1980 and thereafter. Recommended nutritional allowances, however, call for substantial increases in the consumption of yams and tubers and to the extent that these are not realized, recommended allowances of rice will have to be further increased. This aspect of the problem is, however, not considered in this study.

^{22/} Though rice is the staple food in Sri Lanka, domestic production has not been sufficient to meet the requirements of the growing population. As a result, for decades, Sri Lanka has imported up to half its basic food requirements. A major objective of Sri Lanka's agricultural policy is the attainment of self-sufficiency in food production.

The alternative projections and the implied rates of growth in food requirements are set out in table 246. Since alternative A assumes constant *per capita* requirement, food requirements increase at the same rate as population. Alternative B assumes the fulfilment of nutritional requirements by the year 2000 and *per capita* requirements grow at rates ranging from 2.5 per cent per year for rice, 3.4 per cent per year for fish, and 4.3 per cent per year for pulses, beef and milk. But, the relative contributions of rice and wheat flour to total cereal requirements are projected to change in the manner indicated earlier. Wheat flour and sugar requirements will record negative rates of growth. Alternative C, which assumes that future requirements of food grains will be met primarily from domestic production of rice and the total elimination of all rice and wheat flour imports by 1980, implies rate of growth in *per capita* rice requirements of the order of 4.8 per cent *per annum* between 1970 and 1980. If, however, self-sufficiency as defined above, is postponed to 1990 or 2000, then rates of increase in *per capita* rice requirements decline to 3.4 and 2.8 per cent *per annum*, respectively.

F. PRODUCTION TRENDS AND CAPABILITIES

The measure of the food problem in Sri Lanka in the years ahead will be the degree to which the difference between food demand, as related to income or nutritional needs, and net domestic supply can be balanced. The requirements based on different assumptions have already been discussed in the previous section. The feasibility of attaining these targets through increases in domestic production is discussed in this section.

Increases in production depend on a complex of social, economic, institutional, technological and environmental factors, and hence projections of output pose far more complex problems than the projection of requirements. However, projections based on a continuation of recent trends can be useful in pointing out the consequences of expanding output at current rates.

Trends in domestic production over the past two decades or so, and the rates of growth required to match future consumption requirements are set out in table 247. Because of data problems, primary attention is paid to rice, but supply prospects for milk, meat and fish are also considered.

Domestic production accounted for about 80 per cent of requirements in 1968-1970, increasing from about 40 per cent in the early 1950s. There has, however, been a setback during the last few years because of poor weather conditions.^{23/} Based on 1968-1970 levels of domestic production, paddy production will have to increase at about 2.6 per cent *per annum* if current levels of *per capita* rice consumption are to be met entirely from domestic sources by the year 2000. However, if according to assumptions made in projection B, rice is to substitute increasingly for wheat flour cutting wheat flour imports in 2000 to one-third current *per capita* levels of consumption, the rate of growth of rice production must be stepped up to about 3.2 per cent

Table 247. Agricultural production and growth rates in Sri Lanka, 1949-2000

Selected enterprises	Agricultural production			Annual growth rates ^{a/}			Projected rates ^{b/} 1969-71 to 2000	
	Annual average 1949- 1951	Annual average 1959- 1961	Annual average 1969- 1971	1949-51 to 1959-61	1959-61 to 1969-71	1949-51 to 1969-71		
Paddy (thousand bushels)	22,365	40,865	70,070	6.2	5.5	5.9	} A 2.6 B 3.2 C 3.6	
Maize	316	338	573	0.8	5.4	3.1		4.0
Manioc (thousand cwt)	4,002	4,615	7,090	1.4	4.3	2.9		4.0
Coconut (million nuts)	2,100	2,366	2,555	1.2	0.8	1.0	1.4	
Fish (thousand cwt)	543	1,312	2,074	9.2	4.7	6.9	6.5	
Cattle (thousand)	1,156	1,399	1,589	2.0	1.3	1.6	} 5.0	
Buffaloes (thousand)	582	790	751	3.1	-0.5	1.3		

Source: Department of Census and Statistics, *Statistical Abstracts of Ceylon*. For projections, see text for discussion.

^{a/} Annual rate of growth, per cent compounded.

^{b/} Rates of Growth for 1969-71 to 2000 are the rates at which domestic production must increase to meet nutritional requirements except in the case of paddy where the figures indicate required rates of growth to meet requirements projected under the assumptions A, B and C.

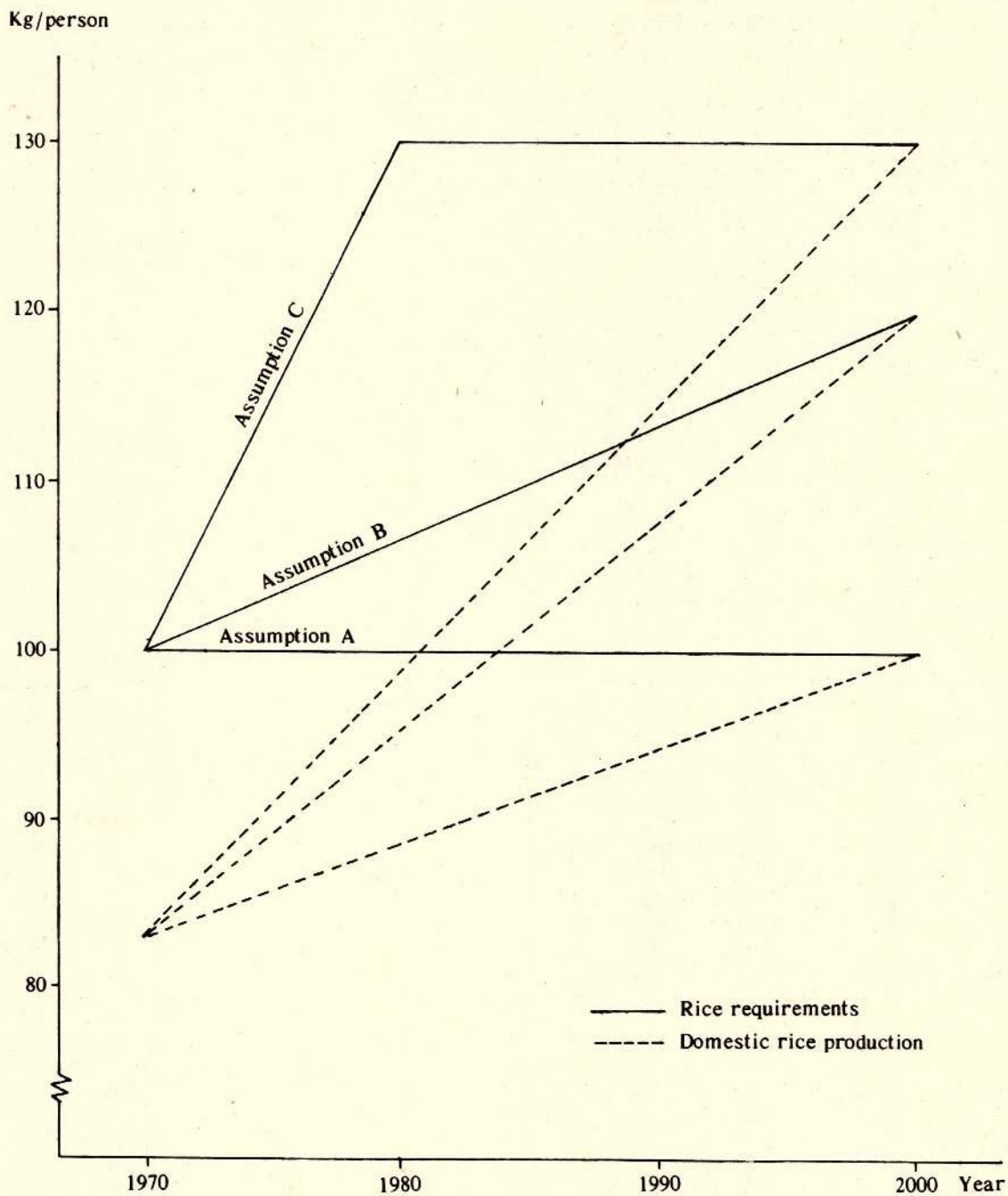
1. Rice

Consumption requirements are projected to increase from about 1.25 million metric tons in 1968-1970 to about 2.18, 2.61 or 2.83 million metric tons by the year 2000, according to projections A, B, and C respectively. In terms of bushels of paddy, the required quantities are approximately 150 million bushels, 180 million bushels and 195 million bushels, respectively. These are requirements at the physiological level and do not include allowances for seed, feed and wastage, all of which could roughly be estimated to account for about 10 per cent of production.

per annum. Complete self-sufficiency which would eliminate imports of rice and wheat flour by 2000 would require rates of growth of about 3.5 per cent *per annum* (see figure 23).

How do these required rates of growth compare with past performances? Domestic production of

^{23/} Domestic rice production reached a peak of 1.1 million tons in 1970, declined to about 0.9 to 0.95 million tons during the years 1971 to 1973 and rose again to 1.1 million tons in 1974. However, largely as a result of drought, 1975 rice production has been the lowest for 10 years at 0.75 million tons.



Note: See text for discussion.

Figure 23. The dimensions of Sri Lanka's foodgrains problem: projected rates of growth in rice requirements and domestic rice production, 1970-2000

paddy increased at the rate of about 5.8 per cent *per annum* in the period 1950-1970, declining from about 6.0 per cent *per annum* in the 1950s to about 5.5 per cent *per annum* in the 1960s. The question is whether such relatively high rates of growth can be maintained for a further period of about two to three decades. The continuation of such high levels of growth will however enable the attainment of the targets set out earlier well before 2000.

Production increases in the past have been brought about through increases in both acreage under cultivation and per acre yields. The relative contribution of these two factors have, however, varied over time. The rate of increase in extents cultivated declined from about 3.0 per cent *per annum* in the 1950s to under 2.3 per cent *per annum* in the 1960s, while the rates of growth in per acre yields increased from about 3.0 per cent to about 3.3 per cent *per annum*. Future trends of these rates will depend on the availability and cost of developing new land, and on technological innovations which would facilitate the development and diffusion of new high yielding varieties.

Acreage expansion through development of new land as well as through increases in the cropping index will require the provision of irrigation facilities.^{24/} Future prospects for acreage expansion, centre primarily on the Mahaweli River development project, which envisages bringing under cultivation about 650,000 acres of new land and providing additional water supplies to another 250,000 acres currently under cultivation. The completion of the whole project is expected to take about 30 years, but progress would be determined largely by the availability of capital.

The development of new land for paddy cultivation is not merely a matter of providing additional supplies of water. Judging from past experiences, a target of 10,000 acres of new land to be brought under the plough every year may pose difficult problems. If, however, this is assumed to be feasible and if the cropping index on existing land is also increased to about 175 per cent from its present level of 155 per cent, then it should be possible to bring under cultivation an extent of about 2.5 million acres by the turn of the century in comparison to the 1.7 million acres cultivated in 1968-1970. Given

^{24/} It is in the dry zone areas that potential exists for bringing additional land under cultivation. But in this zone, the lower absolute rainfall, its heavy concentration in the *Maha* season, and the great variability in timing and amount, results, with some exceptions, in irrigation being essential for the permanent cultivation of annual crops.

a cultivated extent of this magnitude, per acre yields need to be raised to about 70 bushels compared with current levels of about 50 bushels to meet requirements envisaged under projection A. That is, the realization of these targets will enable the country to free itself from imports of rice by the year 2000 and still maintain current levels of *per capita* rice consumption. It would, however, be still dependent on imports of wheat flour at current levels of *per capita* consumption. The above targets will have to be bettered if the wheat flour component of the diet is to be reduced or if the country is to eliminate imports of food grains altogether.

The targets of bringing under cultivation 2.5 million acres and of raising yields to 70 bushels per acre of paddy do not appear to be impossible of achievement. They require an expansion in acreage of about 1.5 per cent *per annum* and a productivity growth of about 2.0 per cent *per annum*. This is well below past rates of growth. To the extent that these are bettered, the goal of self-sufficiency becomes nearer. One cannot at the same time be over-complacent. It may not be realistic to extrapolate past rates of growth. In fact, it may be held that where yields are concerned, they might approach an asymptote. There are also limits to the expansion in area.^{25/} It could be expected that as more and more new land is brought under cultivation, they would be increasingly marginal in character, leading to higher costs of development and lower levels of productivity. It is however difficult to take such factors into consideration. Nor has any attempt been made to incorporate shift variables such as those that may result from any future technological changes.

2. Protein sources

The production prospects for milk, meat, fish and pulses are best considered together, as these are essentially alternative sources of protein supply. Requirements are projected to increase at a rate of

^{25/} Estimates of land available for future agricultural development vary from a low of about 1.5 million acres to a high of about 4 million acres. See Gavin W. Jones and S. Selvaratnam, *Population Growth and Economic Development in Ceylon* (Colombo, Hansa Publishers Ltd., 1972), pp. 239-249. The wide margin reflects the difficulties in arriving at such estimates. Even given the low estimates, it does not appear that the potential for opening up of new land will be completely exhausted by the turn of the century. Much of this land however lies in the dry zone and its full exploitation depends on the availability of irrigation facilities. The future development of the Mahaweli River, the Kelani River and development of irrigation facilities in the southeastern parts of the island could possibly add another 900,000 to 1 million acres.

3.6 per cent *per annum* for fish and from 4.5 per cent to 5.0 per cent *per annum* for pulses, milk and meat. Since imports of fish, in the form of dry fish, help meet about 40 per cent of current requirements, domestic production must increase at the rate of 6.5 per cent *per annum* in order to achieve self-sufficiency in fish requirements by 2000. Past production trends indicate that such a high rate would not be overly ambitious. Fish production increased at a rate of 6.9 per cent *per annum* over the period 1950-1970 and if this rate can be maintained, self-sufficiency will not be beyond reach. It must, however, be pointed out that growth rates decreased from about 9.0 per cent *per annum* in the 1950s to about 5.0 per cent *per annum* in the 1960s.

Reservation must however be expressed with regard to the livestock sub-sector. Fresh milk requirements are projected to increase at about 4.4 per cent *per annum* and meat at 5.2 per cent *per annum*. While little or no meat is imported, a considerable amount of foreign exchange is expended on imports of processed milk foods, primarily infants' and invalid's preparations. Even ignoring these, required rates of growth appear to be very much on the higher side, given the low rates of growth in cattle numbers in recent years. Buffalo numbers appear to have actually decreased. Improvements to basic stock, and higher levels of nutrition and management are all important considerations in increasing production and these are lengthy processes.

With regard to pulses, imports have been the primary source of supplies. Attempts have been made in recent years to introduce local varieties and also encourage the widespread cultivation of soybeans. It is still too early to gauge the success of these programmes. But, again projected increases in pulse requirements, at about 4.5 per cent *per annum*, appear to be too high for realization.

Given these problems it would appear that government programmes will have to emphasize fish production, especially because of its relative importance in low income diets.

G. SUMMARY AND CONCLUSION

This chapter sets out to explore the implications

of population growth for food and nutrition. Population is projected to increase from about 50 to 100 per cent by 2000, depending on the nature of assumption made in regard to future course of fertility. Increases in population as well as in incomes will influence the future course of demand for food, with population being the more important factor. In estimating future requirements, however, the approach adopted was to evaluate the nutritional status of the present availabilities and to project future demand on the basis of nutritional requirements. While the available evidence point to the over-all adequacy of the diet, a breakdown of the data indicates energy deficiencies amongst the low income groups. This is confirmed by nutritional studies. Improvements in nutrition and the realization of targets set for 2000 will, however, depend on a doubling of the current rates of *per capita* income growth.

Projections of production based on the continuation of trends since the Second World War, and comparisons with estimates of requirements suggest a guardedly optimistic outlook for the future. Self-sufficiency in rice requirements appear to be well within reach and there is every prospect of sharply curtailing imports of wheat flour. But to the extent that surpluses in cereals arise, major policy decisions will be required to bring about a balance. Problems of agricultural diversifications and intensification will require much more emphasis than in the past.

The outlook for protein supplies is, however, not as bright. The realization of nutritional objectives require rates of growth that have not been achieved in the past. Thus major shifts in government policies and commitments of resources will be required. Decisions relating to priorities to be accorded to the development of alternative sources of protein will also be called for.

It must also be emphasized that the estimates of future consumption levels are based on nutritional requirements. To the extent that targets are not realized, the continuation of current subsidy and welfare programmes will be required, at least for maintaining present levels of nutrition. Given the projected increases in population, this is likely to impose heavy financial burdens on the government.

CHAPTER XVII

SOME ASPECTS OF LAW AND POPULATION DYNAMICS IN SRI LANKA

A. INTRODUCTION

In recent years, the attention of demographers and social development planners has been focused on the relationship between law and population dynamics. Some laws have a direct and significant bearing on population dynamics, especially on factors that determine family formation and fertility behaviour. There are others which have only an indirect or marginal impact on population dynamics. But it is probable that the cumulative effect of even those laws which are considered to have perhaps only a marginal or indirect impact could sometimes make a significant difference to the population goals which a nation seeks to achieve. However, it is very desirable that there should be congruence between the population policy to which a nation commits itself and the laws and regulations which facilitate the achievement of the ultimate population goals.

The purpose of the present chapter is to examine the laws 1/ (including regulations and customs that have the force of law) of Sri Lanka that have a relationship to population dynamics and to examine their implications for the national population policy. In the absence of empirical evidence or any other definite indications, one can only speak of the possible or probable population implications of certain laws and regulations.

Among the aspects that are covered in this chapter are laws relating to: (a) family formation and family life; (b) measures affecting the quality of life; (c) direct fertility control measures; (d) collection of demographic data; as well as (e) other laws relevant to population dynamics.

B. LAWS RELATING TO FAMILY FORMATION AND FAMILY LIFE

1. The different systems of law

In order to understand and appreciate the population implications of laws and regulations which have

a bearing on the formation of families, it is necessary to obtain a very brief idea of the different systems of law that exist in the country. 2/

Different sections of the population are governed by different legal systems. These systems are based on diverse and varied sources of law. On certain aspects a person could be governed by the provisions of a legal system which do not normally apply to him. In certain limited situations a person has the choice of being governed by a particular legal system to the exclusion of the legal system by which he is ordinarily governed. This makes it rather difficult to understand the nature of the laws and regulations applicable to any person at any particular point of time.

The different legal systems that govern or have a bearing on those aspects which come within the scope and ambit of family law are the following: (i) General Law; (ii) Kandyan Law; (iii) Tesawalamai; and (iv) Muslim Law.

The term "General Law", in its broad interpretation, embraces the statute law of the country as well as the common law, which depending on the context could mean the Roman-Dutch Law or the English Law. As far as the statute law is concerned, with the exception of a few statutes, the rest is of universal application to all ethnic and religious groups in the country. The Kandyan Law, the Tesawalamai and the Muslim Law are commonly referred to as "special laws" for the reason that these laws apply only to those who belong to certain communities or religious groups. The "General Law" therefore applies to all those who are not subject to any special law. On certain aspects the "General Law" applies to all persons irrespective of whether or not they are subject to any special law. The "General Law" also has the character of a residuary law in the sense that when the special laws are silent or ambiguous on any particular aspect it is either the Roman-Dutch Law principles or the English Law principles that would apply.

2/ For a more detailed account of the different systems of law, see T. Nadaraja, *The Legal System of Ceylon in Its Historical Setting*, 1972; H.W. Tambiah, *Principles of Ceylon Law*, 1972 and L.J.M. Cooray, *An Introduction to the Legal System of Ceylon*, 1972.

1/ As of 31 December 1975.

The "Kandyan Law" which originally had a territorial application, in the sense that it applied to all persons in the Kandyan Provinces, is now regarded as a personal law applicable only to those Sinhalese who are generally known as "Kandyans" as distinguished from "Low-country". The absence of any hard and fast definition of the term "Kandyan Sinhalese" sometimes leads to anomalous results.

The "Tesawalamai", which originally meant the customs and usages of the Dravidians from the Malabar coast of India, applies to all persons who come within the description of the term "Malabar inhabitants of the province of Jaffna". The word "Malabar" has been regarded as synonymous with "Tamil" and the term "inhabitant" would apply to a person who has Jaffna as his domicile.

The "Muslim Law" is the only system of law that is based on religion and it applies to all persons who profess the religion of Islam i.e. persons who are born to Muslim parents as well as those who embrace this religion by conversion.

In 1971, of a total census population of 12.7 million, the number of persons, who were subject to the General Law were 5.4 million low-country Sinhalese, 1.1 million Indian Tamils and 0.1 million others belonging to minority ethnic group. There were 3.7 million Kandyan Sinhalese and the Kandyan Law would have applied to most of them. There were also 1.4 million Sri Lankan Tamils who would have been governed by the Tesawalamai if they had a Jaffna domicile; otherwise they would be governed by the General Law. The Muslim Law would have applied to 0.8 million Moors. It has to be noted that statistics regarding the population by ethnic groups give only a rough indication of the number of persons who would have been governed by the different systems of law.

2. Minimum age of Marriage and the requirement of consent

a. General Law

Certain regulations enacted in 1815 ^{3/} and again in 1822 ^{4/} had a very limited application regarding the requirements for and the registration of marriages. Under Ordinance No. 6 of 1847 for a valid Christian marriage every male had to be over 16 years of age. The minimum ages of marriage for

daughters of European and Burgher parents was 14 years, and 10 years for other females. Consent of parents or guardians was required for marriages (other than those of widows and widowers) of males under 21 years, daughters of European and Burgher parents under 21 years and other females who were under 16 years. Ordinance No. 13 of 1863 applied even to non-Christian marriages but the Ordinance made no change in either the minimum age of marriage or the requirement of consent. The Marriage Registration Ordinance No. 2 of 1895 raised the minimum age of marriage for girls other than daughters of European and Burgher parents from 10 years to 12 years.

The present law is contained in the Marriage Registration Ordinance No. 19 of 1907. ^{5/} Under this Ordinance no marriage would be valid if the male party had not completed 16 years of age or the female 12, or in the case of a daughter of European or Burgher parents 14 years of age. These limits were fixed as far back as 1908. These restrictions do not apply to those who marry under the Kandyan Law or Muslim Law. A person who is otherwise entitled to marry under a personal law would however be subject to these restrictions if such person contracts a marriage under the Marriage Registration Ordinance.

The Marriage Registration Ordinance requires the consent of the parent or guardian of any party to the marriage who is yet a minor, i.e. under 21 years of age. The requirement of consent is dispensed with in the case of widows, widowers and persons whose marriage have been legally dissolved. If consent is unreasonably withheld or refused, the court, after inquiry, could grant consent to the marriage.

In 1958 the Royal Commission on Marriage and Divorce ^{6/} observed that "a rise of the minimum age will not only act as a check on maternal mortality but also tend to have a salutary effect on a rising birth rate" and "taking into consideration the present stage of the development of the country and its economic conditions" the Commission recommended that 18 years for a male and 16 years for a female should be adopted as the minimum age limits for marriage. The requirement of consent was considered by the Commission as "a salutary check on hasty and ill-conceived marriages". No change in the existing law was recommended.

^{3/} Regulation No. 7 of 1815.

^{4/} Regulation No. 9 of 1822.

^{5/} Chapter 112 of the Legislative Enactments of Ceylon.

^{6/} *Report of the Commission on Marriage and Divorce*, Sessional Paper No. XVI of 1959.

b. Kandyan Law

Prior to 1859, the Kandyans had no written laws and marriage was contracted according to customary rites. Ordinance No. 13 of 1859 made registration essential to the validity of a marriage and stipulated the minimum age applicable to marriages to be "contracted and solemnized by or between residents in the Kandyan Provinces"

The present law, the Kandyan Marriage and Divorce Act No. 44 of 1952 ^{7/} which was enacted almost a century later, also retains the same age limits. The minimum age for male is 16 years and for females it is 12 years. Both under the Ordinance of 1859 and the Act of 1952, a marriage where one or both parties are below the minimum age would not be invalid if both parties, thereto, cohabit as husband and wife for a period of one year after the party or parties have attained the lawful age of marriage, or if a child is born of the marriage before either of them have attained the lawful age of marriage. Under the Kandyan Marriage and Divorce Act, the consent of the parent or guardian of a male child if below 16 years (under the Ordinance of 1859 it was 21 years) and a female child if below 16 years is necessary. But if such consent is refused, the Court, after inquiry, could grant such consent. In the absence of a parent or guardian, the District Registrar of Marriages could give consent to the marriage.

The Royal Commission on Marriage and Divorce recommended that 18 years for a male and 16 years for a female should be adopted as the minimum age limits for marriages. Since "in certain backward areas in the Kandyan Provinces there was yet a considerable amount of ignorance about actual ages of children and the requirement of the law", the Commission recommended (a) that in these backward areas the age limit should not be introduced before the expiry of five years from the date of report, and (b) that a considerable amount of education and propaganda be undertaken in these areas to explain the ills of early marriage. The Commission also recommended that the age of consent should be increased to 21 years.

c. Muslim Law

There is no statutory provision relating to the minimum age of marriage for Muslim males and females. The Muslim Marriage and Divorce Act

No. 13 of 1951 ^{8/} prohibits the registration of Muslim marriages of females under 12 years of age unless the consent of the Quazi has been obtained. The registration of Muslim marriages is not an essential requirement under the Muslim law and therefore this restriction is of limited application.

There are certain principles and practices of the Muslim Law which may have an indirect bearing on the age of marriage and divorce. "A Muslim under the age of puberty (presumed to have been attained at the age of 15), however must obtain the consent of a parent or guardian in order to marry. A male Muslim may contract a marriage of his own will on attainment of puberty. A female of the Hanafi sect is a *feme sole* at and after puberty, and may contract a marriage by appointing her own *Wali*, i.e., guardian for marriage. A female of the Shaffi sect, whatever age she may be, could be given in marriage even without her consent, by her *Wali*. If she was under the age of puberty at the time of such marriage, she may repudiate the marriage on attainment of puberty by establishing that her *Wali*, acted contrary to her interests. An adult 'Siyeeba' i.e., a non-virgin, of the Shaffi sect, like an adult Hanafi female cannot be married against her will". ^{9/}

The Commission on Marriage and Divorce observed that "the infant and maternal mortality rates are particularly high among the Muslim community in Ceylon largely due to early marriage and to the number of pregnancies. A State should prescribe minimum age limits in conformity with its considered population policy. We do not think intelligent Muslim opinion would oppose a rise in age limits which must ultimately be to the benefit not only of the Muslims but to the rest of the community" ^{10/} The Commission recommended that the minimum age of marriage in the case of Muslims should be 18 years for the males and 16 years for females. As an interim measure it was recommended that for a period of five years females between 14 and 16 years should

^{8/} Chapter 115 of the Legislative Enactments of Ceylon.

^{9/} However, under section 363 of the Penal Code a husband commits the offence of rape if he has sexual intercourse with his wife who is under 12 years of age. The Penal Code makes it an offence to have or attempt to have carnal intercourse with a girl of or above the age of 12 years and under the age of 14 years but section 364 A(3) enacts that "sexual intercourse by a man with his wife or between a man and girl who are living together as husband and wife with the consent of the parents or guardians of the girl, shall not be an offence under this section if the girl is of or above the age of twelve years".

^{10/} *Report of the Commission on Marriage and Divorce*, *op.cit.*, note 14, para. 84, p. 34.

^{7/} Chapter 113 of the Legislative Enactments of Ceylon

be permitted to be married with the consent of the *Quazi*. In deference to the views of the only Muslim member of this Commission (whose death occurred before the report was issued), the Commission recommended that "the wording of the amendment to the Muslim Marriage and Divorce Act should be that no marriage shall be registered where a man is below the age of 18 and where a girl is below the age of 16 years". Since, as mentioned earlier, the registration of Muslim marriages is not essential for the validity of such marriages this recommendation to some extent would have the effect of defeating the objective which the Commission sought to achieve by imposing a minimum age of marriage.

In 1973, the Muslim Law Research Committee made the following recommendations "A marriage of a Muslim male below 16 or a female below 14 years should not be solemnized or registered; in the case of Muslim girls between the ages of 12 and 14 the *Quazi* should have the power to authorize the solemnization and registration of such marriages; the contravention of the prohibition though a punishable offence should not affect the legal validity of the marriage". ^{11/} The Committee's recommendation to impose a penalty for the contravention of the prohibition without effecting the validity of the marriage goes a step further than the recommendation made by the 1958 Royal Commission. The maximum penalty the Committee recommended is the same as that stipulated in section 92 of the Muslim Marriage and Divorce Act, i.e., "a fine not exceeding one hundred rupees". It is unlikely that this penalty would have a deterrent effect.

3. Prohibited degree of relationship

For medical and eugenic reasons certain types of marriages have to be prohibited. Incest has not been made a criminal offence under the Penal Code but the Marriage Registration Ordinance, the Kandyan Marriage and Divorce Act and the Muslim Marriage and Divorce Act contain penal provisions.

(a) General Law

The Marriage Registration Ordinance declares marriages where either party is a direct descendant from the other as invalid. ^{12/} A marriage would also be invalid where the male is (a) the brother

^{11/} *The Report of the Marriage Law Committee of the Muslim Law Research Committee on the Muslim Marriage and Divorce Act*, 1973, paras. 3:4, p. 7.

^{12/} Section 16(a) of the Marriage Registration Ordinance No. 19 of 1907.

of the female either by the full or the half-blood or (b) the son of her brother or sister by the full or the half-blood or a descendant from either of them or (c) a son of her husband by another mother or (d) her deceased daughter's or granddaughter's or mother's or grandmother's husband. Marriages of the converse types of relationships in the case of females are also equally prohibited. Any marriage or cohabitation between persons standing towards each other in any one of these degrees of relationship is a punishable offence. The maximum penalty that could be imposed is imprisonment for a period not exceeding one year.

b. Kandyan Law

On the prohibited degrees of marriage or cohabitation, the Kandyan Marriage and Divorce Act too contains the identical provisions as the Marriage Registration Ordinance, the only difference being that under this Act the maximum penalty is imprisonment not exceeding two years. ^{13/}

c. Muslim Law

Under the Muslim Marriage and Divorce Act, a female who either enters into a contract of marriage, or permits to have carnal intercourse, with a man who is (i) her son or other lineal descendant, or (ii) her father or other lineal ascendant or (iii) her brother by the full or the half-blood or (iv) the son of her brother or sister by the full or the half-blood or a descendant from either of them or (v) the brother by the full or the half-blood of her father, mother or other lineal ascendant or (vi) her husband's father or grandfather or (vii) her daughter's, grand-daughter's, mother's or grandmother's husband or widower or divorced husband, ^{14/} is guilty of an offence for which the maximum penalty is imprisonment for a period not exceeding three years. Marriages of, or intercourse in the converse types of relationships in the case of males are equally prohibited. There are however certain differences in the law that applies to Muslim males and females. First, the restrictions apply to females over the age of 12 years. Secondly, in the case of a male it is a punishable offence for him to marry "his wife's sister, his wife being then alive". Thirdly, in the case of a male, it is immaterial that the carnal intercourse was had or that the attempt was made with the consent of the woman, but in the case of a female it is a valid

^{13/} The Kandyan Marriage and Divorce Act No. 44 of 1952.

^{14/} Section 80(2) of the Muslim Marriage and Divorce Act No. 13 of 1951.

defence that she was at the time of the offence under the coercion of the person having carnal intercourse with her. Fourthly, in the case of a male the "attempt" to have carnal intercourse is sufficient to entail penal liability.

The restrictions applicable to Muslims are slightly wider than those which apply to persons governed by the General Law and the Kandyan Law. The Muslim Law prohibits not only "marriage" but also "carnal intercourse". The other two systems of Law prohibit only "marriage" and "cohabitation". The latter term has not been defined but, in the general context of marriage laws, it means not an isolated act of carnal intercourse as such but the living together as husband and wife for some period of time.^{15/} There is no provision in the Muslim Marriage and Divorce Act regarding the validity of marriages within the prohibited degrees of relationship. It has been suggested that this Act must be amended to prohibit the "registration or solemnization" of such marriages.^{16/} Further, under the Muslim Law a male or female could be convicted only if he or she has committed the offence with a person who to his or her "knowledge" comes within the prohibited degrees of relationship. The General Law and Kandyan Law provisions on incestuous marriages do not recognize this concept of "knowledge" and to this extent the subjective knowledge of the accused regarding the existence of the relationship is not a relevant consideration.

d. Views of the Royal Commission, 1958

The Royal Commission on Marriages and Divorce did not view with favour the recommendation of the Law Revision Committee to transfer the penal provisions relating to prohibited unions in the General Marriage Ordinance and Kandyan Marriage and Divorce Act to the Penal Code. The Commission was of the view that "prohibited degrees of relationship in marriage should not be prescribed by law", since it is a restriction on an individual's freedom of choice. The Commission felt that "social customs and taboos are often more effective than legislation in maintaining those prohibitions".^{17/}

^{15/} Stroud's *Judicial Dictionary of Words and Phrases* (4th Ed.), vol. 1, p. 492.

^{16/} *Report of the Marriage Law Committee of the Muslim Law Research Committee on the Muslim Marriage and Divorce Act, 1973*, p. 11. para. 5.

^{17/} *Report of the Commission on Marriage and Divorce*, *op. cit.*,

The Commission recommended that (a) marriages of parallel cousins i.e., children of two brothers or sisters should be prohibited while marriages of cross-cousins should be permitted; and (b) there must be a uniform law for the whole island (with additional grounds in the case of Muslims) with uniform penal sanctions.

4. Registration of marriage and other formalities

a. General Law

The Marriage Registration Ordinance^{18/} does not make the registration of marriages mandatory, registration being regarded only as the best evidence of marriage. Under this Ordinance, no marriage could be registered unless certain formalities have been complied with. Notices of intended marriages have to be given to the registrar and such notices have to be displayed in public to enable those whose consent is necessary for a valid marriage to object to the registrar issuing a certificate to the effect *inter alia*, that the particulars set forth in the notice are correct. Objections, if any, have to be referred to a court of law for determination. To ensure that no frivolous and vexatious objections are made, the Ordinance provides for a fine to be imposed. Once the certificate of the registrar is produced, the marriage could be solemnized by a registrar or by a Christian minister. Special licences could be issued for the solemnization of marriages. The effect of a special licence would be to reduce the normal time lag (12 days) that precedes the issuing of the registrar's certificate.

The Marriage Registration Ordinance provides for the solemnization of what are referred to as "death-bed marriages" i.e., marriages where one party (who is of sound mind, memory and understanding) is believed to be on the point of death. For purposes of inheritance and succession death-bed marriages are of some significance.

There is no requirement in Ordinance No. 13 of 1863 (and also in the Marriage Registration Ordinance) making the validity of marriages dependent on registration or on solemnization. This has resulted in the local courts recognizing the presumption relating to marriages by habit and repute.^{19/}

^{18/} The Marriage Registration Ordinance No. 19 of 1907.

^{19/} *Gunaratna v. Punchihamy* (1912) 15 New Law Reports, 501.

The evidence of cohabitation for a long period and the recognition by relations and neighbours of the man and woman as husband and wife give rise to a presumption of a valid marriage. But this presumption could be rebutted by evidence to the contrary.^{20/} The presumption would not apply, for instance, if one of the parties had been married at the relevant time^{21/} or if certain essential ceremonies had not been performed.

Customary marriages among Hindus and Buddhists are recognized by law. "The recognition of such customary marriages is a recognition only of the customs as to the mode of solemnization and nothing else. The Marriage Registration Ordinance must be regarded as applicable to all marriages in regard to all other matters about which it contains express provisions".^{22/} Thus it would appear that a customary marriage would not be valid if the marriage contravenes any statutory provision relating to the age of marriage,^{23/} prohibited degrees of relationship, re-marriage, dissolution of marriage etc.

b. Kandyan Law

Ordinance No. 13 of 1859 which amended the laws of marriage in the Kandyan Provinces made the registration of Kandyan Marriages compulsory. The Kandyan Marriage and Divorce Act of 1952 enacts that "(a) A marriage, between persons subject to Kandyan Law, shall be solemnized and registered under this Act or under the Marriage Registration Ordinance; and (b) any such marriage which is not so solemnized and registered shall be invalid".

Under the Kandyan Marriage and Divorce Act, every prospective Kandyan Marriage has to be notified to the registrar. If no objections are lodged, certificate could be issued and the marriage solemnized. After the solemnization the registrar has to make certain entries in the register. If a prospec-

^{20/} In *Ponnammah v. Rajakulasingham* (1948) 50 New Law Reports, 135, the absence of a ceremony for the tying of a *thali* was not proved to the satisfaction of the Court as a factor which vitiates the validity of a marriage between Hindus according to customary rites.

^{21/} *Kandian v. Thangamany* (1953) 55 New Law Reports, 568.

^{22/} *Thiagaraja v. Kurukal* (1923) 25 New Law Reports, 89 at 91.

^{23/} A marriage between a Brahmin and a girl of 11 years according to Hindu customary ceremonies was declared to be invalid in *Thiagaraja v. Kurukal* (1923) 25 New Law Reports, 89.

tive Kandyan marriage is not solemnized and registered within the specified time limit all certificates, licences and other documents issued would be rendered null and void and would be of no effect. Registration of Kandyan marriages is treated as "the best evidence of the marriage".

Customary marriages do not find a place under the Kandyan Law. "The reason for the exclusion of Kandyans from the doctrine of marriage by habit and repute can be traced to the looseness of the marriage tie in the Kandyan Kingdom at the time of its conquest, and the desire to avoid having to sort out difficult questions relating to inheritance"^{24/}

c. Muslim Law

The Muslim Marriage and Divorce Act of 1951 enacts that "nothing contained in this Act shall be construed to render valid or invalid, by reason only of registration or non-registration, any Muslim marriage or divorce which is otherwise invalid or valid, as the case may be, according to the Muslim Law governing the sect to which the parties to such marriage or divorce belong". The Act makes it mandatory to register a marriage immediately after the conclusion of the *Nikah* ceremony. The bridegroom, the *wali* and the person who conducted the *Nikah* ceremony are under a duty to cause the registration of such marriage.

Under this Act, it is an offence for a woman to contract a marriage or participate as a bride during her period of *iddat* and no such marriage could be registered. The registration of the following classes of marriage is prohibited: (a) the marriage of a woman of the Shafi sect without the intervention of her rightful *wali* unless the *Quazi*, in the exercise of his powers, has authorized the marriage and dispensed with necessity for the *wali's* presence and approval; (b) a marriage at which the person acting as the *wali* is not entitled according to the Muslim Law governing the sect to which the bride belongs to act as *wali* to that bride; (c) the marriage of a Muslim girl under the age of 12 years unless the *Quazi* has authorized the registration of such marriage; and a second or subsequent marriage without giving the *Quazi* one month's prior notice. Section 25 which requires the *wali's* presence and approval (unless the *Quazi* has authorized the marriage and dispensed with the necessity for the *wali's* presence and approval) and the bride's

^{24/} R.K.W. Goonesekere, "Marriage and Divorce Laws of Sri Lanka", in *Proceeds of the Seminar on Law and Population in Sri Lanka*, 1974

own consent to the marriage as conditions precedent to the validity of all marriages "embodies as a positive requirement the recommendation of the Shafi jurists that it is always desirable to consult a virgin daughter in regard to her future husband".

The Muslim Marriage and Divorce Act treats the registration of marriages as "the best evidence of the marriage".

d. Possible implications

The Royal Commission on Marriage and Divorce observed in 1959 that resort is had to the provisions for special licenses so frequently that the object of giving 12 clear days' notice is often defeated. Since "marriage is often a serious undertaking and a decision for life... the State should provide that between the stages of deliberation and final decision, some time-lag should be introduced to enable all parties concerned, including parents and guardians, if any, to make sure that due regard has been paid to the provisions of the law and the interests of the two parties". The Commission's recommendations to amend the law to provide for special licenses to be issued after a longer period than as at present, and for a special fee to be charged if such licenses are to be issued, would help to reduce the number of hasty and unplanned marriages.

The Commission was of the opinion that the present law under which a Muslim bride is not required to sign either the declaration in which notice is given of the intended marriage or the Muslim marriage register, is not satisfactory. Since "it is conceivable that situations may arise where a marriage is registered against the consent of a bride", the Commission recommended that legal safeguards should be introduced to ensure that no Muslim marriage takes place without the written consent of the bride.

Another important recommendation that was made by the Royal Commission was to authorize Registrars of Marriages to obtain proof of age when notice of marriage is given to them by persons, one or both of whom appear to the Registrar to be minors, and, therefore, to require for their marriage, the consent of their parents where such consent does not appear to have been given. The Commission felt that the proposed provision "will serve as a salutary and effective check against false declarations of age before a Marriage Registrar". ^{25/}

^{25/} Report of the Commission on Marriage and Divorce, *op.cit.*, p. 143, para. 336.

There does not appear to be any valid rationale for the continued recognition of customary marriages or marriages where it is presumed that there has been "a marriage by habit and repute". Such marriages may have a pro-natalistic effect in the sense that without any serious awareness of the implications of marriage people may live together as husband and wife. If registration and compliance with other formalities are made conditions for the validity of all marriages, it is likely that people would become more conscious of the legal obligations they would incur by contracting a marriage.

5. Marriage institutions and customs

a. Voluntary nature of marriage

Marriage is a voluntary union between one man and one woman. Its voluntary nature is given legal effect by the Marriage Registration Ordinance which declares that "no suit or action shall lie in any court to compel the solemnization of any marriage by reason of any promise or contract of marriage, or by reason of the seduction of any female, or by reason of any cause whatsoever. No marriage duly solemnized and registered under this Ordinance could become vitiated by any such promise or contract or seduction." The Ordinance does not take away the right to bring an action to recover damages for a breach of promise ^{26/} or for seduction or for any other reason.

The view that a promise of marriage should not be the subject of commercial bargains led English ^{27/} and South African ^{28/} courts to treat as void marriage brokerage contracts. However, the Sri Lankan courts have taken two different views on the matter. ^{29/} It has been pointed out that "having regard to the customs of the country which limit the broker's function to the making of a proposal, leaving the parties free to make their own independent

^{26/} The Ordinance requires the promise of marriage to be in writing. The Privy Council held in *Udalagama v. Boange* (1959) 61 New Law Reports, 25, that both offer and acceptance should be in writing to satisfy the requirements of the Ordinance. A promise to marry by a minor or by an already married person would not be actionable.

^{27/} J. Chitty, *A Treatise on the Law of Contracts*, 2nd edition, section 218.

^{28/} H.R. Hahlo, *South African Law of Husband and Wife*, 3rd edition, p. 37.

^{29/} *Livera v. Gonsalves* (1913) 17 New Law Reports, 5 and *de Silva v. Juan Appu* (1928), 29 New Law Reports, 417.

inquiries before taking a decision” ^{30/}, the view that such agreements are in accordance with local customs and therefore enforceable should be preferred ^{31/}

The requirement that parties intending to contract a marriage must give their consent in writing (except in the case of Muslim females) ensures to some extent that the parties are not going through the marriage ceremony due to duress or compulsions.

b. Marriage customs and formalities

Certain customs and formalities associated with the institution of marriage could have a bearing not only on the age at marriage but also on the stability of the marriage. In this context the dowry system and the dual system of Kandyan marriages are of some significance.

The functional aspect of the dowry system was described in the Tesawalamai Code in the following manner. “It is by this means that most of the girls obtain husbands, as it is not for the girls but for the property that most men marry.” ^{32/} The proposition that dowry is usually the inducement agreed upon in the course of negotiations for a marriage was, however, considered by Sri Lanka Supreme Court as one which is not of universal application. ^{33/} Most marriages are still arranged by parents and sometimes the quantum of dowry plays an important role in the bargaining process. Most parents find it difficult to collect enough dowry to be given to their daughters. This makes the selection of a suitable bridegroom a time-consuming process. It was recently reported that a women’s organization has suggested the abolition of the dowry system by law as one of the measures to improve the status of women. ^{34/}

There are two kinds of marriages among the

Kandyans: ^{35/} (a) *diga* by which a girl becomes a member of her husband’s family, thereby losing all claims upon ancestral property, except for maintenance if she becomes destitute, and (a) *binna* where the husband enters the wife’s family and is dependent on her and her parents. He lives in the household as long as the wife permits him to stay. “In *binna* marriage the bride is generally an heiress or the daughter of a wealthy family in which there are few sons. The bridegroom does not acquire any right over the wife’s property. The right of expelling him from the home of his wife is possessed not only by the wife but also by the wife’s parents and brothers”. ^{36/} In the absence of any entry in the marriage registrar, the law presumes, until the contrary is proved, that the marriage has been contracted in *diga*. ^{37/}

In several respects, the laws in Sri Lanka are biased towards consolidating the institution of marriage. The law regards an agreement which is in the nature of a general restraint of marriage as void on the ground of being contrary to public policy. ^{38/} Gifts made to a concubine in contemplation of the continuance of the relationship of illicit cohabitation are treated as bad and a concubine would also be debarred from suing for the recovery of anything promised to her. ^{39/} No relief would be granted by court of law to a woman who tries to recover property gifted by her to her paramour. ^{40/}

The rule which requires birth and not conception to be after marriage if the child is to be presumed legitimate. ^{41/} and the principle that even where a child is born out of wedlock subsequent marriage of the parents would render the child legitimate ^{42/} also reflect the bias towards marriage ^{43/} It is also

^{35/} For full discussion, see Sir Ponnambalam Arunachalam, *Twentieth Century Impressions of Ceylon*, (ed. Arnold Wright), London, 1907.

^{36/} N.K. Sarkar, *The Demography of Ceylon* (Colombo, Ceylon Government Press, 1957).

^{37/} *Kandyan Marriage and Divorce Act*, Section 28 (i).

^{38/} *Vyavan Chetty v. Fernando* (1916), 19, New Law Reports, 104.

^{39/} *Parasattamma v. Setupulle* (1872) 2, New Law Reports, 271.

^{40/} *Silva v. Ratnayake* (1935), 37, New Law Reports, 245.

^{41/} *Evidence Ordinance*, Section 112, (Chapter 14, Legislative Enactments of Ceylon).

^{42/} *General Marriage Ordinance*, Section 21.

^{43/} R.K.W. Goonesekere, *op.cit.*

^{30/} C.G. Weeramantry, *The Law of Contracts*, 1967, p. 369.

^{31/} *Ibid.*

^{32/} Section 5 of the Tesawalamai Regulations (Chapter 63 of the Legislative Enactments of Ceylon).

^{33/} *Rammenika v. Banna Lekam*, (1912) 15 New Law Reports, 407 at 410 See further Goonesekere, Savitri, “Recovery of dowry and other property on a dissolution of marriage”, *Colombo Law Review*, 1972, vol. 3, pp. 1-19.

^{34/} *Ceylon Daily News*, 7 August, 1975.

for the same reason that in certain situations the law presumes, until the contrary is established, that there is a valid marriage by "habit and repute".

c. Monogamy, polygamy and polyandry

In Sri Lanka, only the Muslims are entitled to contract marriages of a polygamous character. Polyandry is absolutely prohibited. However, there is evidence that polygamy and polyandry had been in wide practice especially in the Kandyan provinces, for several centuries. A writer on the social conditions of the country observed in 1681 that "Both Women and Men do commonly wed four or five times before they can settle themselves to their contentation".^{44/}

Ordinance No. 13 of 1859, which laid the law relating marriages in the Kandyan provinces, prohibited both polygamy and polyandry. The Preamble to this Ordinance stated in the following terms the reason for imposing this prohibition: "...And whereas the customs of the Kandyans, now considered as the law regulating the contract of marriage, permits a man to have more than one living wife, and a woman to have more than one living husband; and whereas this custom is wholly unsuited to the present condition of the Kandyans; and is in no way sanctioned by their National Religion; and whereas such custom is a great hardship and oppression to the industrious classes, and the frequent cause of litigation, leading to murders and other crimes; and whereas from the circumstances aforementioned, the Marriage custom of the Kandyans is become a grievance and an abuse, within the meaning of the Kandyan Convention of 1815, and a large influential portion of the Kandyan people have petitioned for redress and reform of the same...". This prohibition applied to civil as well as religious marriages. The penalty prescribed for any violation of the prohibition was imprisonment for a period of three years.

Notwithstanding the legal prohibition, polyandry and polygamy survived even in the early part of this century. "Polyandry, though illegal, continues to exist among the Kandyan peasantry, especially in the case of the brothers. The law against polyandry is evaded by not registering the union at all or by registering it as with one brother only. In all cases the ceremonies of marriage are performed with one brother only. The association of other

^{44/} Robert Knox, *Historical Relation of the Island of Ceylon*, 1681, p.149.

husbands follows by consent of parties, but when once established, becomes a matter of public notoriety, and no disgrace attaches to it. The progeny of the woman is deemed the progeny of each husband individually and collectively, and the property is conserved in the family".^{45/}

Though polygamy also existed for a long time, it has been said that "the feeling of the Sinhalese in regard to the plurality of wives is very strongly adverse".^{46/} The 1921 census superintendent observed: "A very common reason for polygamous marriages was the failure of the first wife to bear a son, or her affiliation with some incurable diseases or infirmity. In such cases, the first wife might often solicit her husband to take a second wife or in any case freely accord him permission to do so in order to prevent the extinction of the family. It is possible that in many cases inability to dower a girl adequately or the difficulty of finding a suitable husband within the caste may have led to polygamous marriages. Another cause may have been the desire to prevent a sub-division of property, one man marrying all the sisters in the family. Polygamy, however, has disappeared as a social institution in Ceylon, except among the Muhammadans, whose religion and law allows a man four wives at a time, though in practice the number is usually less. Both among the educated and the less wealthy Muhammadans, monogamy may be said to be very general".^{47/}

The Marriage Registration Ordinance (Section 18) enacts that "no marriage shall be valid where either of the parties thereto shall have contracted a prior marriage which shall not have been legally dissolved". The term "marriage" excludes "marriages contracted between persons professing Islam". According to the Kandyan Marriage and Divorce Act, no Kandyan marriage is valid "(a) if one party thereto has contracted a prior marriage; and (b) if the other party to such prior marriage is still living, unless such prior marriage has been lawfully dissolved or declared void".^{48/} The Penal Code makes it a punishable offence to contract a second marriage while the first marriage still subsists. Section 362 B of

^{45/} Sir Ponnambalam Arunachalam, *op.cit.*, p. 336.

^{46/} E.B. Denham, *Ceylon at the Census of 1911 Being the Review of the Results of the Census of 1911* (Colombo, Government Record Office, 1912), p. 327.

^{47/} L.J.B. Turner, *Report on the Census of Ceylon 1921*, vol. 3, part III (Colombo, Government Printer, 1922).

^{48/} *Kandyan Marriage and Divorce Act*, section 6.

the Code enacts as follows: "Whoever, having a husband or wife living, marries in any case in which such marriage is void by reason of its taking place during the life of such husband or wife, shall be punished....". This section is subject to two exceptions: (a) where the marriage has been declared void by a court of competent jurisdiction and (b) where at the time of the subsequent marriage the former husband or wife has been continually absent from such person for a period of seven years and has not been heard of as being alive.

A person who contracts a marriage under the Muslim Law but after conversion marries for the second time (while the first marriage still subsists) under the General Law is guilty of bigamy.^{49/} However, the British Privy Council held that a non-Muslim could by conversion become a Muslim and contract a second marriage under the Muslim Law while the first monogamous marriage still subsists. The Privy Council in its judgment observed as follows: "Ceylon is a country of many races, many creeds and has a number of Marriage Ordinances and Acts...Whatever may be the situation in a purely Christian country (as to which their Lordships express no opinion) they cannot agree that in a country such as Ceylon, a Christian monogamous marriage prohibits for all time during the subsistence of that marriage a change of faith and of personal law on the part of a husband resident and domiciled there... In their Lordships' view in such countries there must be an inherent right in the inhabitants domiciled there to change their religion and personal law and so to contract a valid polygamous marriage if recognized by the laws of the country notwithstanding an earlier marriage. If such inherent right is to be abrogated it must be done by statute. Admittedly there is none".^{50/}

In recent years, there has been an increasing tendency among non-Muslims to take advantage of the Muslim Law to marry more than one wife, and this has caused great concern among the Muslims in the country. A recent Committee on Muslim Marriage and Divorce Laws observed: "The increase in this type of marriage has caused considerable concern among Muslims who fear that their personal laws will be brought into disrepute by persons who profess to be Muslims not from conviction but out of the unscrupulous desire to utilize to their advantage

certain provisions of the Muslim Law of marriage which are in practice used by Muslims in exceptional circumstances. When a person finds that his marriage has broken down and is unable to obtain its dissolution in view of the restricted grounds of divorce available under the General Law, which is based on Roman-Dutch principles, he conveniently resorts to this dubious practice, which has become more frequent after the decision in *Reid's* case."^{51/}

The Muslim Marriage and Divorce Act (section 24(1)) requires a person who, having one or more wives, desires to contract another marriage to give notice of his intention to the *Quazi* at least 30 days in advance. The Registrars of Muslim marriages have been directed to require the production of *Quazi's* certificate of receipt of notice under section 24(1) before registering the marriage even of a person previously married under a law other than the Muslim Law.

6. Matrimonial obligations and Protection of children

The obligation to look after the wife or children is on the husband or father who is regarded as the head of the family. A woman, if she has separate property, is independently liable to maintain her children and also her husband if he, due to illness or otherwise, is unable to maintain himself.^{52/} A person who neglects to maintain his wife or his legitimate or illegitimate children, could be ordered to pay maintenance to the wife or children.^{53/} The amount to be paid would be determined by the court.^{54/} A child could receive maintenance till he reaches the age of 21 years. A person who defaults in paying maintenance is liable to undergo a sentence of imprisonment. Questions relating to the custody of minor children either during the subsistence of the marriage or upon its dissolution are not governed by any statutory provisions and are determined on the basis of Roman-Dutch Law principles.^{55/} The father

^{51/} *The Report of the Marriage Law Committee of the Muslim Law Research Committee on the Muslim Marriage and Divorce Act, 1974*, p. 9

^{52/} Married Women's Property Ordinance No 18 of 1923 (Chapter 56 of L.E.C.).

^{53/} Maintenance Ordinance No. 19 of 1889 (Chapter 91 of the L.E.C.).

^{54/} Maintenance (Amendment) Act No. 19 of 1972.

^{55/} For further details, see D.C. Jayasuriya, "The custody of minor children in the Roman-Dutch law of Ceylon", *Colombo Law Review*, 1971, p. 110.

^{49/} *Katchi Mohamed v. Benedict* (1961), 63, New Law Reports, 505.

^{50/} *Attorney-General v. Reid*, (1964), 67, New Law Reports, p.35.

is considered to have a preferential right to the custody of minor children but courts could grant custody to the mother if such a course of action is required in the best interest of the child.

The Penal Code has made infanticide a criminal offence. ^{56/} A nineteenth century study reveals that among those who had practised infanticide were certain parents who had numerous offspring whom they could not maintain themselves. ^{57/} The exposure or abandonment of a child under the age of 12 years by a person who has the care of such a child has been made an offence under the Penal Code.

The Adoption of Children Ordinance of 1944 ^{58/} provides for a person over the age of 25 years to make an application to court to adopt a child under the age of 14 years. An adoption order would not normally be made if the sole applicant is a male and the child in respect of whom the adoption order has been made is a female. The consent of the parent or of the guardian is normally, but not always, required before an adoption order is made. If the child is over 10 years of age, the child's consent has to be obtained. The effect of an adoption order would be to transfer to the adopter all the rights, duties and obligations of the natural parents. The adopted child is deemed in law "to be the child born in lawful wedlock of the adopter", but, unless the contrary intention appears, from any instrument, such adopted child does not become entitled to any rights, titles or interest in so far as succession to the property of the adopter is concerned. However, an adoption order does not deprive the adopted child of any right to or interest in any property which he would, but for the order, have been entitled to.

The exact population implications of adoption laws are not quite clear. If adoption laws permit the adoption of even illegitimate children, there is likely to be a drop in the incidence of illegal abortions. If childless couples or families with few children adopt children especially from families with a large number of children, the chances of ensuring the future welfare of such children would be greater. The State would also have to incur less expenditure on public welfare schemes if children, especially abandoned children, are adopted by persons who have the means.

^{56/} Section 293 and explanation 5 to section 294.

^{57/} D'Oyly, John, *Sketch of the Constitution of the Kandyan Kingdom*. 1831, p. 55.

^{58/} Chapter 61 of the L.E.C.

The Children and Young Persons Ordinance ^{59/} contains elaborate provisions for the establishment of juvenile courts, the supervision of juvenile offenders, the protection of children and young persons and the prevention of cruelty and exposure to moral and physical danger. A parent, having sufficient means for the purpose, who fails to maintain a person under the age of 16 years by neglecting such person in a manner likely to cause injury to his health (by failing to provide adequate food, clothing, medical aid or lodging) could become liable to a penalty.

The Employment of Women, Young Persons and Children Act No. 46 of 1956 regulates the employment of women, young persons and children by restricting the categories of people who could be employed in certain trades or occupations. Regulations have been enacted, for instance, to absolutely prohibit the employment of children below 14 years of age in certain types of employment. These restrictions may have the effect of reducing to a certain extent the economic value of children to parents.

7. Termination of marriage and re-marriage

a. Nullity of marriage

Under the Marriage Registration Ordinance an action for rendering the marriage null and void, is available (a) if any party is under the minimum age of marriage; ^{60/} or (b) if the marriage is within the prohibited degrees of marriage; or (c) where one of the parties is already married; or (d) if in registering the marriage there has been non-compliance with the requirements of the Ordinance relating to the place of solemnization or the person by whom a marriage could be solemnized; or (e) if the marriage has been registered under a false name or without a duly issued certificate of marriage. A marriage would not be declared null and void even if one of the parties, being a minor, had contracted the marriage without the consent of her father. ^{61/}

^{59/} Ordinance No. 48 of 1939 (Chapter 23 of the L.E.C.).

^{60/} Even for a customary marriage to be valid, the parties should be over the minimum age of marriage, see *Thiagarajah v. Kurukkal* (1923) in 25 New Law Reports, 89.

^{61/} *Dayawathie v. Gunaratne* (1966), 70 New Law Reports 260. It has, however, been pointed out that "want of consent was not so drastically treated" by the Marriage Registration Ordinance and this has made certain marriages which have flagrantly flouted the provisions of the Ordinance null and void. See, *Selvaratnam v. Ananandavelu* (1941) 42 New Law Reports, 487, p. 493.

Action for declaring a marriage null and void is also available on grounds recognized by the Roman-Dutch Law. Some of these grounds are: (a) pregnancy of the wife by another man at the time of marriage (antenuptial stuprum) unknown to the husband; ^{62/} (b) a fraudulent misrepresentation that the wife had never been married before ^{63/} (c) impotency at the time of marriage ^{64/}; (d) if the wife is incapable of consummating her marriage due to a malformation in her genital organs or due to a symptom such as vaginismus. ^{65/} There is an *obiter dictum* in a Sri Lanka case which suggests that a marriage could be dissolved if a party was "incapable of procreation at the time of the marriage". ^{66/}

Under the Kandyan Marriage and Divorce Act, the grounds which would result in the annulment of marriages are; (a) failure to solemnize or register according to the provisions of the Act; or (b) a party being under the lawful age of marriage; or (c) marriage being within the prohibited degree of marriage; or (d) a party being lawfully married. The failure to give consent or the inability to understand the nature of the marriage ceremony, which are grounds for nullity under the Roman-Dutch Law, would apply with equal force to Kandyan marriages as well. ^{67/}

The Muslim Marriage and Divorce Act does not specify any grounds for nullity, the validity or invalidity of any marriage whether it be registered or not, being a question that has to be determined according to the Muslim Law governing the sect to which the parties belong. "The Muslim law of divorce may be concisely stated as follows: a husband is free to divorce his wife without assigning a cause; a wife can never divorce herself from her husband without his consent, but she may under some circumstances obtain a divorce by judicial decree". ^{68/}

^{62/} *Sivacolunthu v. Rasamma* (1922) 24 New Law Reports, 89.

^{63/} *Fernando v. Fernando* (1968) 70 New Law Reports, 534.

^{64/} *Guntileke v. Mille Nona* (1936) 38 New Law Reports, 291.

^{65/} *Ibid.*

^{66/} *Ibid.*, at p. 291.

^{67/} *Report of the Royal Commission on Marriage and Divorce*, Sessional Paper XVI of 1959, p. 56.

^{68/} R.K.W. Goonesekere, *op.cit.*, p. 8.

b. Judicial separation

Judicial separation or separation *a mensa et thoro* (from bed and board) is a remedy available to those who marry under the General Law but not under the Kandyan Law or Muslim Law. ^{69/} A decree of separation does not have the effect of dissolving a marriage but only of suspending some of the legal consequences of marriage. The Court could on application set aside the decree in cases where the parties are agreeable to live together again. ^{70/} Extra-judicial or voluntary separation is possible and a deed could even be notarially executed to set out the terms of separation. A judicial separation could be obtained on any ground on which a divorce could be obtained. ^{71/} Further grounds are: (a) excessive cruelty and harshness of a spouse; (b) continuous quarrels and disagreement between spouses; (c) danger to the life of a spouse; (d) violent and continued insanity and husband's conduct which impairs the wife's health and makes it intolerable for her to live with him.

c. Divorce

According to the Marriage Registration Ordinance a judgment of divorce a *vinculo matrimonii* could be obtained on the grounds of (a) adultery subsequent to marriage; or (b) malicious desertion; or (c) incurable impotency at the time of marriage.

If the cause of action is the adultery of the wife, the Civil Procedure Code requires the alleged adulterer to be made a co-defendant to the action. It is only if the alleged adulterer is dead or his name is unknown, or the wife is leading the life of a prostitute, that a husband is excused from making the alleged adulterer a co-defendant. A co-defendant could be ordered to pay pecuniary damages to the husband, the quantum of damages being based on two considerations i.e., "the actual value of the wife to the husband and the proper compensation to him for the injury to his feelings, the blow to his honour and the hurt to his matrimonial and family life". ^{72/} There is, however, no provision for a wife to cite an

^{69/} *Civil Procedure Code* (Chapter 101 of Legislative Enactments of Ceylon), section 627.

^{70/} *Ibid.*, section 611.

^{71/} *Orr v. Orr* (1920), 22 New Law Reports, 57.

^{72/} *De Silva v. De Silva* (1925), 27 New Law Reports, 289.

alleged adulteress as a co-defendant. A court would not grant any relief to a husband or wife who brings an action based on adultery if he or she had also been committing adultery. ^{73/}

Malicious desertion, a Roman-Dutch Law concept, has been defined to mean a "deliberate and unconscientious, definite and final repudiation of the obligations of the marriage state". ^{74/} The non-consummation of a marriage owing to the wilful refusal of the husband to copulate entitles the wife to have the marriage dissolved on the ground of malicious desertion. ^{75/} Local courts have introduced into the law of malicious desertion the English Law concept of "constructive malicious desertion" i.e. where the innocent spouse is compelled to leave the matrimonial home due to the fault of the guilty spouse.

Under the Kandyan Marriage and Divorce Act, the following are the grounds for the dissolution of a marriage: (a) adultery by the wife after marriage; (b) adultery by the husband, coupled with incest or gross cruelty; (c) complete and continued desertion by the husband for two years; (d) complete and continued desertion by the wife for two years; (e) inability to live happily together, of which actual separation from bed and board for a period of one year shall be the test; and (f) mutual consent.

The Second Schedule to the Muslim Marriage and Divorce Act lays down the procedure that has to be followed by a husband who intends to divorce his wife. He has to give notice of his intention to the *Quazi* of her area and after 30 days he has to appear before the *Quazi* and pronounce *talak* in the presence of two witnesses. Thirty days later he has to reappear before the *Quazi* and inform him that he has not been reconciled with his wife. Another 30 days later he has to appear before the *Quazi* again and get his divorce registered. The entire process is designed to give an opportunity to the *Quazi*, with the help of relatives and other influential people, to explore the possibilities of bringing about a reconciliation.

The Muslim Marriage and Divorce Act (Section 28) enacts that the procedure set out in the Third Schedule should be followed by a wife who desires to divorce her husband without his consent on the ground

of ill-treatment or on account of any act or omission on his part which amounts to a 'fault' under the Muslim Law governing the sect to which the parties belong, and on any other ground being a divorce of any description permitted to a wife by the Muslim Law governing the sect to which the parties belong. The Act does not make provision for the situation where the parties may belong to different sects. ^{76/} Before an application is heard by a *Quazi* he has to endeavour to bring the parties to an amicable settlement.

It is more difficult to obtain a divorce under the General Law than under the Kandyan Law or Muslim Law. Divorce proceedings under the two latter systems of law have the added advantages that these proceedings are cheap, expeditious and free from newspaper and other publicity.

d. Re-marriage

Re-marriage is possible (a) upon the death of a spouse; (b) upon the first marriage being dissolved (decree of divorce or nullity); and (c) in the case of Muslims by marrying for a second or third or fourth time.

A decree of divorce obtained from a court of law is normally only a decree *nisi* which would have to be made absolute after a period of three months. Until the decree is made absolute no re-marriage is possible. The reason for this is to see whether there is any likelihood of a reconciliation. If an appeal has been preferred against the order of a court, or of the District Registrar, or of the *Quazi*, no re-marriage is possible until the appeal is finally disposed of.

The Muslim Marriage and Divorce Act prohibits the registration of a marriage of a Muslim woman contracted during her period of *iddat* (i.e. the period during which a woman is prohibited from marrying again after dissolution of her marriage). A penalty could be imposed on a Muslim woman who during her period of *iddat* contracts a marriage. The object of *iddat* is to "ascertain whether the woman is pregnant so that re-marriage during pregnancy could be avoided". ^{77/}

^{73/} *Navaratnam v. Navaratnam* (1945), 46 New Law Reports, 361.

^{74/} *Silva v. Missinona* (1924), 26 New Law Reports, 116.

^{75/} *Wijaratne v. Wijaratne* (1946), 47 New Law Reports, 324.

^{76/} H.M.Z. Farouque, "Muslim Law in Ceylon: an historical outline", *The Muslim Marriage and Divorce Law Reports*, vol. IV, 1972, p. 16.

^{77/} F.B. Tyabji, *Muhammadan Law*, 3rd ed. p. 133.

C. MEASURES AFFECTING THE QUALITY OF LIFE

1. Educational laws and regulations

The discussion in this section is confined only to those particular legal provisions and regulations pertaining to education that may have a direct or indirect demographic implication for Sri Lanka.

The first legislation on education was enacted only in 1884 ^{78/} though from the outset of British rule certain royal charters and other documents did contain provisions relating to various aspects of education. The Education Ordinance No. 31 of 1939 ^{79/} still forms the substantive legal basis of Sri Lanka's educational system.

It has been taken for granted that education is compulsory in Sri Lanka for children who are in the age group of 5 to 15 years, but there is no uniform legislation making education compulsory, except certain provisions formulated a long time ago and which applied various age limits to various areas. According to section 62 (1) of Education Ordinance No. 31 of 1939, school going age means "such age between the prescribed maximum and minimum age at which a child is liable to attend school". Section 37 (1) empowers the Minister of Education to enact regulations requiring the parent of any child not less than 5 and not more than 15 years of age to cause such child to attend school. But no regulations have yet been enacted in this respect under the Ordinance of 1939 or even under Ordinance No. 26 of 1947 which altered the original age range. ^{80/}

The Royal Commission on Education of 1961 pointed out that "the only regulations that are in force today in respect of non-estate schools are the by-laws made by the local authorities or the Education District Committees covering the areas over which they had jurisdiction...these by-laws would seem to vary from area to area". ^{81/} The Commission therefore recommended that legislation be enacted - "(a) defining the compulsory school age as any range bet-

ween 6 years and 14 years so that a person will be deemed to be of compulsory school age if he has attained the age of 6 years and has not attained the age of 14 years, and (b) requiring the parents to cause the attendance at school of every child of compulsory school age".

In 1940, the Special Committee on Education recommended that "education should be free from the Kindergarten to the University". ^{82/} Based on this recommendation, legislation was enacted to make education free by abolishing fees in schools which were hitherto charged. The free education scheme encouraged education on a wider scale than before and more students than ever sought education and remained in school.

The next most important step after the free education scheme was the adoption of regulations permitting those educated in the Sinhala or Tamil media to sit the University Entrance Examination in the same media. This development led to a phenomenal increase in the numbers entering the universities.

The inclusion of material in the curricula of educational institutions dealing with the reproductive behaviour of human-beings is not restricted by any law. Sex education however does not form part of the school curriculum. The Ministry of Education, with financial assistance from UNFPA in recent times has taken measures to incorporate material on population education into the school curricula on social studies, mathematics, science, health etc. from grades VI to IX. The need for incorporating population education into the law school curriculum, especially to facilitate the study of law and population in detail, has also been highlighted. ^{83/}

2. Social welfare aspects in labour legislation

The Maternity Benefits Ordinance, ^{84/} the Medical Benefits Ordinance ^{85/} and the Shop and Office Employees (Regulation of Employment and Re-

^{78/} Maintenance of Schools Ordinance No. 33 of 1844.

^{79/} Chapter 185 of the Legislative Enactments of Ceylon.

^{80/} Ordinance No. 31 of 1939 specified the age range of 6 to 10 years for children attending estate schools and 6 to 10 years for non-estate school Muslim girls and 6 to 14 years for other non-estate school children. Ordinance No. 26 of 1947 altered this age range to 5 to 16 years for all categories.

^{81/} *Interim Report of the National Education Commission*, Sessional Paper No. of 1962, p. 4.

^{82/} *Report of the Special Committee on Education in Ceylon*, Sessional Paper No. 24 of 1943.

^{83/} D.C. Jayasuriya, *The Inclusion of Population Education in the Law School Curriculum*, Family Planning Association, Sri Lanka, (mimeo), 1975.

^{84/} Ordinance No. 32 of 1939, (Chapter 140 of the Legislative Enactments of Ceylon).

^{85/} Ordinance No. 9 of 1912, (Chapter 226 of the Legislative Enactments of Ceylon)

muneration) Act 86/ contain a number of statutory provisions designed to enable pregnant employees to get leave and other benefits before and after confinement. Under the Maternity Benefits Ordinance, a female employee is entitled to a cash benefit for a period of two weeks before and four weeks after her confinement. The Medical Wants Ordinance requires employers to provide rice rations or money for female employees during the period of confinement. The Maternity Benefits Ordinance provides for the establishment of creches where working mothers could leave their children during working hours. Certain restrictions are placed on the termination of services of female employees who are in a state of pregnancy. No employer is entitled to contract out of these statutory obligations relating to maternity benefits. It is significant to note that a female employee is entitled to these generous benefits irrespective of the number of pregnancies she may have had.

The statutory prohibition on the retrenchment of employees employed in certain types of employment without the permission of the Commissioner of Labour ensures to some extent that the problem of unemployment does not become aggravated. 87/

3. Health Laws

a. Vaccination and quarantine measures

The Vaccination Ordinance 88/ provides for the compulsory vaccination of all persons, including children over the age of three months, against smallpox. The failure to be vaccinated and the failure to cause children who are under the care of a parent or guardian to be vaccinated are offences under this Ordinance.

The Contagious Diseases Ordinance 89/ aims to prevent the introduction and spread of contagious or infectious diseases such as smallpox, cholera etc. The Ordinance requires a householder to report every case of such disease occurring in the house. At the request of the head of a family an

affected person could be removed to a medical institution. It is an offence for a person who knows that he is affected by any disease covered by this Ordinance to "wilfully go abroad into any street, thoroughfare or public place".

The Quarantine and Prevention of Diseases Ordinance 90/ makes provision for preventing the introduction into the country of "the plague and all contagious or infectious diseases and for preventing the spread of such diseases in and out of the country." The Ordinance empowers the Minister to make regulations to provide, *inter alia*, (a) for placing aircraft, vessels and boats arriving at any port or place in the country and for placing all persons or goods coming or brought in such aircraft, vessels or boats in quarantine and for the manner of disinfecting or fumigating etc.; (b) for establishing and maintaining quarantine stations and for inspecting passengers; (c) for isolating all cases of disease and diseased persons; (d) for closing wells, pits, cess-pits and cesspools; (e) for regulating the number of persons to be allowed to inhabit any dwelling place etc.

The Diseases among Labourers Ordinance 91/ and the Medical Wants Ordinance 92/ contain a number of statutory provisions designed to prevent and control diseases among labourers.

b. The control of venereal diseases

The law governing venereal diseases is contained in two statutes, the Venereal Diseases Ordinance of 1938 93/ and the Quarantine and Prevention of Diseases Ordinance of 1897. 94/ Venereal disease has not yet been listed under the Contagious Diseases Ordinance 95/ as a disease which should be reported by a householder to the medical authorities.

90/ Ordinance No. 3 of 1897 (Chapter 222 of the Legislative Enactments of Ceylon).

91/ Ordinance No. 10 of 1912, (Chapter 225 of the Legislative Enactments of Ceylon).

92/ Ordinance No. 9 of 1912, (Chapter 226 of the Legislative Enactments of Ceylon).

93/ Ordinance No. 27 of 1938, (Chapter 224 of the Legislative Enactments of Ceylon).

94/ Ordinance No. 3 of 1897, (Chapter 222 of the Legislative Enactments of Ceylon).

95/ Ordinance No. 8 of 1886, (Chapter 223 of the Legislative Enactments of Ceylon).

86/ Act No. 19 of 1954 (Chapter 129 of the Legislative Enactments of Ceylon).

87/ Termination of Employment of Workers (Special Provision) Act No. 45 of 1971.

88/ Act No. 20 of 1886 (Chapter 229 of the Legislative Enactments of Ceylon).

89/ Ordinance No. 8 of 1866 (Chapter 223 of the Legislative Enactments of Ceylon).

For the purpose of the Venereal Disease Ordinance, the term "venereal disease" means "syphilis, gonorrhoea or soft chancre and includes any complication of any such disease". The Ordinance permits only all registered Western medical practitioners and practitioners of indigenous medicine who have been specially authorized in writing by the Minister "for reward either direct or indirect, to treat any persons for venereal disease or prescribe any remedy therefore or give any advice in connexion with the treatment thereof, whether the advice is given to the person treated or to any other person." No person may by advertising offer treatment for venereal diseases. The advertising of drugs and other remedies is also prohibited. But with the sanction of the Minister any advertisement or notification may be published or circulated among registered medical practitioners or chemists.

Under the Customs Ordinance, ^{96/} among the items which are prohibited from being imported, (except when they are consigned to registered medical practitioners, chemists or practitioners of indigenous medicine who have received the necessary sanction), are medicines for the prevention, cure or relief of any venereal disease, any advertisements and circulars recommending to the public any medicaments etc.

More elaborate and stringent provisions on venereal diseases than those contained in the Venereal Diseases Ordinance are to be found in the Venereal Diseases Regulations, 1943 ^{97/} enacted under section 2 of the Quarantine and Prevention of Diseases Ordinance. These regulations make it obligatory on the part of a person who suffers or who suspects that he suffers from a venereal disease "to forthwith cause himself to be medically examined" and to submit himself to treatment either under a person registered as a medical practitioner under the Medical Ordinance and who is in private practice or at a government institution. Regulation 9 enacts that "no person who has been declared after medical examination by a medical practitioner to be suffering from venereal disease shall (a) communicate that disease by any voluntary act to any other person, or (b) undertake or to be engaged in any occupation which necessitates such physical contact with any other person to the risk of being infected with that disease."

^{96/} Ordinance No. 17 of 1869 (Chapter 235 of the Legislative Enactments of Ceylon).

^{97/} Reproduced in Subsidiary Legislation of Ceylon, vol. 4, pp. 796-800.

The Venereal Diseases Regulations require a patient to supply the name and address of the possible source of infection. Such a person may be compelled to attend a medical examination to ascertain whether such person was the source of infection and if so to submit to treatment for the disease. Non-compliance with this may result in such person being "removed for medical examination to a Government institution and if found upon such examination to be suffering from a venereal disease (to) be detained in that institution for treatment. A person who has voluntarily given up treatment before he had passed the infective stage of such disease may also be detained in a Government institution for treatment. The regulations also refer to a system of instruction cards and confidential registers that have to be maintained in order to facilitate treatment and the detection of the possible sources of infection.

Section 262 of the Penal Code enacts that "Whoever unlawfully or negligently does any act which is, and which he knows or has reason to believe to be, likely to spread the infection of any disease dangerous to life, shall be punished with imprisonment of either description for a term which may extend to six months, or with fine, or with both".

c. Preservation of public health

The Nuisances Ordinance ^{98/} contains a number of statutory provisions for the better preservation of public health and the suppression of nuisances. The Suburban Dairies and Laundries Ordinance ^{99/} and the Municipal Dairies and Laundries Ordinance ^{100/} provide for the measures that have to be taken regarding infectious diseases. The by-laws of local authorities provide for the minimum requirements that must be observed in constructing houses, the laying out and construction of drainage etc. There are also a spate of other laws and regulations relating to factories, business establishments and the manufacture and sale of food and drugs. Chapter XIV of the Penal Code deals with "offences affecting the public health, safety, convenience, decency and morals", and among these offences are the adulteration of food and the making of the atmosphere noxious to health.

^{98/} Ordinance No. 15 of 1862 (Chapter 230 of the Legislative Enactments of Ceylon).

^{99/} Ordinance No. 38 of 1908 (Chapter 233 of the Legislative Enactments of Ceylon).

^{100/} Ordinance No. 1 of 1896 (Chapter 234 of the Legislative Enactments of Ceylon).

D. DIRECT FERTILITY CONTROL MEASURES

1. Contraceptives

Contraceptives can be imported or manufactured subject to the normal regulations applicable.

The sale of oral contraceptives is subject to certain legal restrictions. The Control of Prices (Drugs) Order, 1969 ^{101/} enacted under the provisions of the Control of Prices Act ^{102/} applies to the sale of drugs which are listed in the schedules to this Order. No drug listed in Schedule II (oral contraceptives as well as all hormonal preparations are listed under this Schedule) can be sold by an importer, trader or pharmacist except on the authority of a prescription issued by a medical practitioner registered under the Medical Ordinance 102. This restriction is primarily designed to protect consumers. Oral contraceptives are available from government hospitals and medical institutions.

There are no legal restrictions on the distribution of literature on contraceptive techniques or on the advertisement of various biological and mechanical contraceptive devices over the mass-media. The literature and the text of the advertisements have to be properly worded so as not to infringe the penal laws relating to obscenity. ^{103/}

2. Sterilization

There is no special law which regulates the performance of sterilization operations. Under section 310 of the Penal Code ^{104/} any person who causes bodily pain, disease or infirmity to any person is said to "cause hurt." A person who does any act with "the intention of thereby causing hurt to any person or with the knowledge that he is likely thereby to cause hurt to any person and does thereby cause hurt to any person is said "voluntarily to cause hurt." The Penal Code has designated seven kinds of hurt as "grievous" and among these are emasculation, privation of any member or joint; and any hurt which endangers life, or which causes the sufferer to be,

^{101/} Published in Government Gazette No. 14, 930/11 of 5 November 1970.

^{102/} Act No. 29 of 1950 as subsequently amended.

^{103/} Section 285 of the Penal Code. Also, Obscene Publications Ordinance No. 4 of 1927 (Chapter 30 of the legislative Enactments of Ceylon).

^{104/} Ordinance No. 2 of 1883 (Chapter 19 of the Legislative Enactments of Ceylon).

during the space of 20 days, in severe bodily pain or unable to follow his ordinary pursuits. Section 313 enacts that "whoever voluntarily causes hurt, if the hurt which he intends to cause or knows himself to be likely to cause is grievous hurt," and if the hurt which he causes is grievous hurt, is said "voluntarily to cause grievous hurt." The explanation to this section adds that "A person is not said voluntarily to cause grievous hurt except when he both causes grievous hurt and intends or knows himself to be likely to cause grievous hurt. But he is said voluntarily to cause grievous hurt if intending or knowing himself to be likely to cause grievous hurt of another kind." The use of an "instrument for cutting" to cause hurt or grievous hurt is an aggravating circumstance for which a higher penalty could be imposed. ^{105/}

It would therefore appear that even a qualified medical practitioner who performs a vasectomy or tubectomy is *prima facie* liable for the offence of "hurt". As far as liability for grievous hurt is concerned, it would seem that if the operation is done negligently, or due to some complication the person's life is in danger, or the patient is in severe bodily pain or unable to follow his ordinary pursuits for a period of 20 days, the person performing the operation may be guilty of "grievous hurt."

Emasculation means the "depriving a person of masculine vigour or castration" ^{106/} and since the effect of a vasectomy would be only to make the man sterile or to render him incapable of procreating, it is unlikely that a person who performs a vasectomy would become liable for grievous hurt under this heading. There is no privation of any member or joint in either vasectomy or tubectomy. It could, however, be argued that since the powers of procreation would be permanently affected there is "destruction or permanent impairing of any member or joint" and the person who performs a vasectomy, thereby depriving another of the opportunity of using one of his organs (member) for the purpose of procreation, is guilty of grievous hurt.

Consent of the person who complains of hurt is a valid defence under the Penal Code. Section 80 enacts that "nothing, which is not intended to cause

^{105/} Sections 315 and 317. The maximum punishment for hurt and grievous hurt is normally imprisonment up to one year and seven years and/or fine respectively, but under these sections the maximum term of imprisonment is three years and ten years.

^{106/} R. Ratonlal and D. Thakore, *The Law of Crimes*, 1971, p. 849.

death or grievous hurt, and which is not known by the doer to be likely to cause death or grievous hurt is an offence by reason of any harm which it may cause, or be intended by the doer to cause to any person above eighteen years of age, who has given consent, whether express or implied, to suffer that harm, or by return of any harm which it may be known by the doer to be likely to cause to any such person who has consented to take the risk of that harm." But the effect of the consent given would be completely vitiated if such consent had been given by the person under a misconception of fact and if the person doing the act knew or had reason to believe that the consent was given in consequence of such misconception.

Certain acts done in "good faith" for the benefit of a person without consent (due to impossibility to signify consent or incapability to give consent) are not treated as offences. Section 81 of the Penal Code which enacts that "nothing, which is not intended to cause death, is an offence by reason of any harm which it may cause, or be intended by the doer to be likely to cause, to any person for whose benefit it is done in good faith, and who has given a consent whether express or implied, to suffer that harm or to take the risk of that harm" would apply in a case where an operation had been done for the benefit of the patient. In certain situations it becomes necessary for medical reasons to perform sterilization operations to avoid greater harm or injury to the life or health of the patient. Section 14 which enacts that "nothing is an offence merely by reason of its being done with the knowledge that it is likely to cause harm if it be done without any criminal intention to cause harm and in good faith for the purpose of preventing or avoiding other harm to person or property" would cover such a situation.

It would, therefore, appear that, save in exceptional circumstances in which it is not possible to do so, it is always desirable to obtain in writing the consent of the person undergoing the sterilization operation and preferably that of his/her spouse as well. The medical implications involved in undergoing the operation should also be set out in the consent form.

Sterilization prior to marriage, if not disclosed, may entitle the other party to repudiate the promise of marriage and break off the engagement. ^{107/}

^{107/} H.R. Hahlo, *The South African Law of Husband and Wife*, 1969, p. 45.

If one spouse has undergone an operation without the consent of the other then it is likely that an action for divorce based on the ground of constructive malicious desertion ^{108/} or an action for judicial separation based on the ground of cruelty could be maintained. ^{109/}

Legislation appears to be necessary (a) to specify the categories of people who should be entitled to undergo sterilization operations; (b) to regulate the circumstances in which and the condition under which sterilization operations should be performed; (c) to restrict the categories of doctors who should be permitted to carry out such operations; and (d) to provide immunity from civil and criminal liability for doctors who perform duly authorized sterilization operations.

3. Abortion

The exact incidence of abortion in Sri Lanka is not known, but there is evidence that abortion had been frequently practised by many people even as far back as the seventeenth century. ^{110/}

The law relating to abortion is contained in the Penal Code. ^{111/} Section 303 of the Penal Code enacts that "whoever voluntarily causes a woman with child to miscarry shall, if such miscarriage be not caused in good faith for the purpose of saving the life of the woman" be punished with imprisonment of either description (simple or rigorous) for a term not exceeding three years and/or with fine. If the woman happens to be "quick with child" the punishment is more severe. The term "quick with child" though not defined in the Code is used in contrast to the term "woman with child" - the former refers to an advanced stage of pregnancy when there is perception of the movements of the foetus ^{112/} while the latter term simply means "being pregnant." ^{113/}

The term "miscarriage" has not been defined anywhere but it is usually given its ordinary meaning of the "premature expulsion of the contents of the womb before the term of gestation is complete." ^{114/}

^{108/} *Ibid.*, p. 491.

^{109/} *Ibid.*, p. 492.

^{110/} Robert Knox, *op.cit.*, p. 146.

^{111/} *Ibid.*

^{112/} R. Ratonlal and D. Thakora, *op.cit.*, p. 386.

^{113/} *Ibid.*

^{114/} R.V. Waidyasekera, (1955) 57 N.L.R. 202 at 208.

The explanation to Section 303 of the Penal Code adds that "a woman who causes herself to miscarry is within the meaning of this section." It has been held by the Supreme Court that a person could be convicted of the abetment of the offence under this section even if there is no evidence that the woman was pregnant. ^{115/}

According to Section 304, any person who commits an offence under Section 303 by causing the miscarriage of a woman, whether she be quick with child or not, without her consent is guilty of a more serious offence for which the maximum punishment is imprisonment up to 20 years. While under Section 303 both the person procuring the abortion as well as the woman who causes her to miscarry are liable, under section 304 it is only the person who procures abortion without consent who is liable.

Section 305 deals with cases where the death of a woman is caused by an act done with intent to cause the miscarriage of the woman. The Indian Penal Code drew a distinction between acts done with and without the consent of the woman but this distinction finds no place in the Sri Lanka Penal Code. The explanation to this section adds that a person is liable under this section even if he did not know that the act he performed is likely to cause death. ^{116/}

Section 306 enacts that "whoever, before the birth of any child, does any act with the intention of thereby preventing that child from being born alive, or causing it to die after its birth, and does by such act prevent that child from being born alive, or causes it to die after its birth, shall, if such act be not caused in good faith for the purpose of saving the life of the mother, be punished with imprisonment of either description for a term which may extend to ten years, or with fine, or with both." Section 307 imposes a penalty which is less severe than the penalty prescribed by law for murder (culpable homicide) if the death of a quick unborn child is caused by an act which though likely to cause the death of a pregnant woman causes only injury to her.

^{115/} R.V. Fernando (1925) 27 N.L.R. 181 at 183.

^{116/} The Sri Lanka Supreme Court has pointed out that, since section 305, unlike section 304, "contains no points to section 303, nor is there any indication in that section that the Legislature intended that it should be controlled by section 303", in a charge under section 305 there is no burden on the prosecution to establish that (a) the accused did not cause the miscarriage in good faith for the purpose of saving the life of the woman; and (b) that the accused in fact caused a miscarriage.

For the purposes of sections 304, 305, 306 and 307 the word "act" is deemed to include even an illegal omission and a series of acts or series of omissions.

The sections relating to abortion in the Penal Code refer to the element of "good faith" and do not specify the type of person who should be permitted to carry out operations even to save the life of the mother.

E. LAWS RELATING TO COLLECTION OF DEMOGRAPHIC DATA

1. Census Law

The first Census Ordinance was enacted in 1869. ^{117/} The first and only Census taken under this Ordinance was the census of 1871. Decennial censuses were taken in 1881 and again in 1891 under the new Census Ordinance of 1880. ^{118/} The Ordinance of 1880 was repealed by the Census Ordinance of 1900. ^{119/} which, with slight modifications introduced from time to time, still continues to be in operation.

The Census Ordinance of 1900 provided for a census to be taken of the population, agriculture (including animal husbandry), trade, labour, industry or commerce or such other matters "for ascertaining the social, civil or economic conditions of the inhabitants of Ceylon" from time to time.

In view of the usefulness of census data for administrative purposes, censuses have usually been taken at 10 year intervals. The Constitution of the Republic of Sri Lanka provides for the President to appoint a Delimitation Commission for the delimitation of electoral districts "within one year after the completion of every general census" ^{120/} and to this extent the taking of a census would be a matter of political interest too. The Ordinance does not specify the data that should be collected at a census. The Minister has been empowered to enact rules to prescribe the particulars regarding which information has to be obtained at a census.

^{117/} Census Ordinance No. 5 of 1869.

^{118/} Census Ordinance No. 9 of 1880.

^{119/} Census Ordinance No. 9 of 1900 (Chapter 143 of the Legislative Enactments of Ceylon).

^{120/} Section 77 (1) of the Constitution of the Republic of Sri Lanka, 1972.

Accuracy and the completeness of the information collected are of great importance. To prevent any suppression of material facts or false answers being given, a penal sanction of imprisonment for a term not exceeding one month or a fine not exceeding Rs100 or both has been specifically provided for in the Ordinance itself. The refusal to answer to "the best of his knowledge and belief" any question asked of him by a census officer also carries the same penalty. Notwithstanding the penal sanction provided for in the Ordinance, it has been discovered time and again that inaccurate information is supplied to census officers.

In an attempt to ensure the completeness and the accuracy of the information collected, the Ordinance has laid down that no entry in any book, register or record maintained by a census officer is admissible as evidence in any civil or criminal prosecution, except in a prosecution instituted under the Census Ordinance.

In 1935, the Statistics Ordinance ^{121/} was enacted to establish a Bureau of Statistics and to provide for the collection of statistics on matters relating to "the economic conditions of Ceylon in respect of agriculture, emigration, immigration, factories, meteorology, mining, importation, exportation, manufacture and sale of products, stocks of products in possession and in course of transshipment, shipping, transportation by land or by water, trade, labour, cost of living, wages, industry and commerce." Refusal to supply information or supplying false information is an offence punishable with a fine not exceeding Rs 50. No information supplied could be disclosed or so arranged to facilitate the identification of any particulars so published as being particulars relating to any individual person or business.

The Registration of Persons Act of 1968 ^{122/} require every person, over the age of 18 years, who is resident in the island to obtain an identity card. "The primary purpose of registering all adults lawfully resident in Sri Lanka and issuing them with identity cards is to prevent illicit immigration."^{123/}

2. Law relating to the registration of births and deaths

The first Ordinance to regulate the registration of

^{121/} Ordinance No. 44 of 1935 as subsequently amended.

^{122/} Act No. 32 of 1968 as subsequently amended.

^{123/} *Administration Report of the Commissioner for Registration of Persons, 1971-1972.* 1974, p. 1.

births and deaths was passed in the year 1847. ^{124/} Since then a number of statutes have been enacted from time to time to deal with the mechanics of registering and recording births and deaths. ^{125/} The existing law is contained in the Births and Deaths Registration Act. No. 17 of 1951 ^{126/} which came into operation in 1954. This Act covers the registration of births, deaths and still births.

Under the Births and Deaths Registration Act, there is an obligation on the father or mother of every child born alive, or if they are unable to do so for any reason the occupier of the house or building in which such child was born, or each person present at the birth and the persons having charge of the child within 42 days of the date of birth, to give such information relating to the birth. Information is also required to be furnished about living new-born children who are found exposed. The information about births of children in estate areas has to be furnished within a shorter time-limit. The failure to furnish information within the specified period of time and the supplying of incorrect information are offences made punishable by this act.

Among the particulars that have to be furnished to the authorities concerned and which are recorded and incorporated in the certificate of birth are the name, age, race ^{127/} and occupation of the father and mother and whether they were married or not. The schedule to the Act sets out the particulars that have to be furnished. The Minister is empowered to make rules to amend this schedule. In the case of an illegitimate child no person, as father of such child, is required to give information under this Act concerning the birth of such child. The registrar cannot enter in a register of births the name of any person as the father of an illegitimate child except (a) at the joint request of the mother and of the person acknowledging himself as the father of the child and unless the register has been jointly signed or (b) upon an order of a court of law. ^{128/}

^{124/} Ordinance No. 6 of 1847.

^{125/} Regulation No. 9 of 1882 and Ordinance No. 1 of 1895 contained more elaborate provisions.

^{126/} Chapter 110 of the L.E.C.

^{127/} The term "race" is not defined in the Act. In *Pasanga v. The Registrar General*, (1965) 67 N.L.R. 33, the distinction between "race" and "nationality" was discussed. It was held that the conferment of Sri Lankans citizenship on an Indian Tamil, although it changes his "nationality" and "citizenship", does not have the effect of changing his "race".

^{128/} Section 21 (2). In *Ratnayake vs. Ratnawathie* (1970) 73 N.L.R. 419, it was held that this provision does not refer to an order of court obtained under the provisions of the Births and Deaths Registration Act.

The addition or alteration of the name of a minor child in the register and the amendment or correction of birth registration entries^{129/} could be ordered by the District Court. The Act does not seem to empower courts to order an amendment of the entry on "sex" even in cases where a person has successfully undergone a sex change operation.

The failure to register and the making of false declarations are punishable offences under the Births and Deaths Registration Act. It has been stated that "the main incentive to register births is the administrative requirement to produce the birth certificate for school admissions, employment, issue of ration books, passports, proof of citizenship etc."^{130/}

Information concerning deaths and still-births have to be furnished to the medical officer of health in urban areas and to the superintendent of the estate areas within a matter of few hours of the death. In rural areas information concerning deaths have to be furnished to the registrar within five days. The Act lays down certain requirements such as obtaining a certificate from the registrar regarding the due registration of death before a corpse could be cremated or buried in a cemetery or burial ground registered under the Cemeteries and Burial Grounds Act of 1899^{131/} The failure to give information regarding deaths and still-births and the furnishing of incorrect and false information are punishable offences under this Act. The Penal Code imposes a penalty which is more severe than the penalty that could be imposed under the Births and Deaths Registration Act^{132/} on any person who by "secretly burying or otherwise disposing of the dead body of a child, whether such child dies before or after or during its birth intentionally conceals or endeavours to conceal the birth of such child".

The Act provides for the appointment of a Registrar-General of Births and Deaths. The Regi-

^{129/} Section 455 of the Penal Code (Chapter 19 of the L.E.C.) makes it an offence to forge any register or certificate of birth, marriage or burial. Section 459 makes it an offence to use a forged document as genuine.

^{130/} H.M.Z. Farouque, "The civil Registration Laws of Sri Lanka with reference to the study of population", in *Proceedings of the Seminar on Law and Population in Sri Lanka*, 1974.

^{131/} Chapter 231 of the L.E.C.

^{132/} Under this Act, the maximum penalty is a term of imprisonment up to six months or fine not exceeding Rs 100 (Section 68). The Penal Code imposes a maximum penalty of imprisonment up to two years and/or fine (Section 309).

strar-General's Department which was set up in 1867 is responsible for the implementation and administration of the Births and Deaths Registration Act. There is a network of registrars of births and deaths working in various parts of the country. There is a statutory duty on the part of every registrar "to inform himself carefully of every birth and death occurring in his division" and to register and record accurately all such particulars which are required to be registered.

F. OTHER LAWS RELEVANT TO POPULATION DYNAMICS

1. Inheritance and succession

Under the Wills Ordinance of 1844,^{133/} any person, who is married or who is over 21 years of age if a male, or over 18 years of age if a female, could during his life time execute a will to dispose of any movable or immovable property or any interest or share in any property in any way he wants. Without assigning any reason, any spouse, parent, child or relative could be expressly excluded from being entitled to inherit any property.

The rules relating to inheritance and succession vary according to the system of law that is applicable. The rules relating to inheritance under the General Law,^{134/} the Kandyan Law^{135/} Tesawalamai^{136/} and the Muslim Law^{137/} provide for a variety of situations and contingencies and only a brief reference is made here to some of the rules that apply.

The law draws a distinction between legitimate children and illegitimate children. Under the General Marriage Ordinance, a legal marriage between any parties has the effect of rendering legitimate any children who may have been procreated. But this concession does not apply to those children pro-

^{133/} Ordinance No. 21 of 1844 (Chapter 60 of the L.E.C.).

^{134/} Matrimonial Rights and Inheritance Ordinance No. 15 of 1876 (Chapter 57 of the L.E.C.).

^{135/} Kandyan Law Declaration and Amendment Ordinance No. 39 of 1938 (Chapter 59 of the L.E.C.).

^{136/} Jaffna Matrimonial Rights and Inheritance Ordinance No. 1 of 1911 (Chapter 58 of the L.E.C.).

^{137/} Muslim Intestate Succession Ordinance No. 10 of 1931 (Chapter 62 of the L.E.C.) declares that the law applicable to the intestacy of any deceased Muslim is the "Muslim Law governing the sect to which such deceased Muslim belonged." (Section 2.).

created in adultery. This is a principle that was based on the Roman-Dutch Law. This discrimination against adulterine bastards was removed in 1970 by the enactment of a special statute.^{138/} It is difficult to say whether this concession would lead to a greater incidence of the birth of illegitimate children procreated in adultery. The Kandyan Law Declaration and Amendment Ordinance accepts for purposes of succession the legitimization of natural bastards by subsequent marriage. The Muslim Marriage and Divorce Act does not provide for legitimization. Under the General Law, illegitimate children are entitled to inherit only the property of their intestate mother.^{139/} If an illegitimate child dies leaving no surviving spouse or descendants, the property would be inherited by the heirs of the mother. The position of illegitimate children appears to be very much different under the Kandyan Law Declaration and Amendment Ordinance, but not so under the Matrimonial Rights and Inheritance (Jaffna) Ordinance.^{140/} Under the Kandyan Law, illegitimate children have no right to the "inherited" or "ancestral" property of either the father or the mother,^{141/} but in so far as "acquired" property and movable property are concerned, illegitimate children have certain limited rights of succession.

A surviving spouse under the General Law is entitled to one half of the property. Under the Kandyan Law, the rules would depend on such factors as whether it was a *binna* or *diga* marriage, the type of property etc. Ancestral or inherited property could be divided among legitimate children and a surviving spouse's rights of succession would be limited to acquired property. Under the Muslim Law, according to the rules governing certain sects, a spouse would be entitled to one fourth of the property, and in other cases to only about one eighth of the property.

2. Taxation

In order to determine the extent to which tax laws have a pro-natalistic or a restrictionist effect, the population implications of these laws could be examined from the point of view of (a) the basis of

the computation of the assessable income; (b) the allowances and other reliefs available in respect of spouses and/or children and/or dependants; (c) the quantum of the disposable income available after taxation and compulsory savings; and (d) the method of payment of taxes.

Since 1958, with the introduction of the Kaldor system of taxation, the basis of computing the assessable income has been that of the 'family' consisting of an individual, his spouse and children (other than those in receipt mainly of occupational income).^{142/} It is the aggregate of the income of the members who constitute the 'family', and not their separate and individual incomes, that is taken into account in computing the amount liable to be taxed. The percentage of tax leviable proportionately increases with the amount of the taxable income and to this extent the basis of the computation of the assessable income in Sri Lanka is likely to have, if at all, only an anti-natalistic effect.

A person is entitled to a personal allowance of Rs 3000 per year. This amount could be deducted from the assessable income when determining the taxable income. If married, a person is entitled to an allowance of Rs 600 more, provided the wife was not *de facto* or *de jure* permanently separated from the husband during the relevant period. For a person with a wife and one or two children or dependent relatives an allowance of Rs 600 is permitted and a further allowance of Rs 600 is permitted for a wife and three or more children or dependent relatives. A "child", for tax purposes, means a child under 25 years of age and includes a step-child of a person or his spouse and a child legally adopted.^{143/} A "dependent relative", for tax purposes, includes a parent, brother, sister, child or step-child over 25 years of age of a person or of his wife who is living with and maintained by the person or maintained by him in any sanatorium, asylum or educational establishment. The maximum allowance permitted for children and dependent relatives is limited to a total of Rs 1,200 and this concession cannot be considered to be a factor that would be taken cognizance of by a person in deciding whether

^{138/} Legitimacy Act No. 3 of 1970.

^{139/} Section 33 of the Matrimonial Rights and Inheritance Ordinance.

^{140/} Ordinance No. 1 of 1911 (Chapter 58 of the L.E.C.).

^{141/} Section 15 of the Kandyan Law Declaration and Amendment Ordinance.

^{142/} Inland Revenue Act No. 4 of 1963 as subsequently amended, Section 19 (1).

^{143/} In terms of Section 129(1) of the Inland Revenue Act No. 4 of 1963, a married child, a child living apart from and not maintained by the parents, or a child in receipt of income from any profession, vocation, or employment, or an illegitimate child however would not come within the definition of a "child".

to have a smaller or a bigger family. A gift of Rs 10,000 made in consideration of the marriage of a son or daughter is not liable to the Gifts Tax. No tax exemptions are available for educational and medical expenses presumably because free education and free medical schemes are available.

The Ceiling on Income and Compulsory Savings Law No. 15 of 1972, as subsequently amended, was introduced to "fix a ceiling on disposable income and to establish a compulsory Savings Fund." This Law requires (a) a person whose income exceeds Rs 12,000 a year to contribute to the Fund a sum equivalent to 40 per cent of his income tax payable as "compulsory savings", and (b) any income which exceeds Rs. 24,000 after paying income tax and wealth tax and the amount due as "compulsory savings" to be paid to the Fund. Interest is paid at the rate of 5 per cent *per annum* and any sum that is paid as a contribution is repayable normally after the expiry of two years.^{144/}

The Capital Levy Act No. 51 of 1971 imposed a "once and for all" tax on the net capital of a "family" A family with a capital over Rs 200,000 could become liable to pay a levy as much as 25 per cent on this amount. This means that a considerable amount of assets would have to be disposed of in order to pay the capital levy, thus leaving less property to be distributed among children. In time to come there would also be less money to be spent on children.^{145/}

The method of payment, apart from the total amount payable, is also "an important factor in determining the economic decisions of a family".^{146/} The Pay-As-You-Earn scheme and the self-assessment scheme require the payment of taxes not annually as in the past but monthly or quarterly. Since "the disposable income of the taxpayer at any given time will now be less the fact of having less money to spend monthly or quarterly may have a restrictionist effect on having more children."^{147/}

^{144/} The ceiling on incomes was abolished in November 1975. See Felix R. Dias Bandaranaike, *Budget Speech 1976*, Nov. 1975, p. 49.

^{145/} These measures undoubtedly have an anti-natalistic effect but they largely affect only the upper socio-economic groups among whom the fertility rates are already low.

^{146/} V. Ratnasabapathy and Wickrama Weerasooria, "Tax Laws in Sri Lanka that have a bearing on population" in *Proceedings of the Seminar on Law and Population in Sri Lanka*, 1974.

^{147/} *Ibid.*

3. Land reforms and housing

The Land Reform Law No. 1 of 1972 was enacted: "to establish a Land Reform Commission, to fix a ceiling on the extent of agricultural land that may be owned by persons,^{148/} to provide for the vesting of land owned in excess of such ceiling in the Land Reform Commission and for such land to be held by the former owners on a statutory lease from the Commission, to prescribe the purposes and the manner of disposition by the Commission of agricultural lands vested in the Commission so as to increase productivity and employment, to provide for the payment of compensation to persons deprived of their lands under this Law and for matters connected therewith or incidental thereto". This Law imposed a "ceiling" on land which could be owned i.e. 25 acres of paddy land or 50 acres of non-paddy land

The Ceiling on Housing Property Law No. 1 of 1973 aimed at regulating the ownership, size and cost of constructing houses. The Law enacts that the maximum number of houses which may be owned by a person who is a member of a family shall be such number of houses which together with the number of houses owned by the other members of that family, is equivalent to the number of dependent children, if any, in that family, increased by two.^{149/} This Law had the effect of divesting owners who had houses in excess of the permitted number of the title they had to such property. Houses which were not sold to tenants or to others within a specified time limit were vested in the Commissioner of National Housing.

Under the Ceiling on Housing Law, a house cannot be constructed to exceed 2,000 square feet in floor area inclusive of the thickness of the external walls. The maximum extent of land on which a house can be built is 20 perches in municipal areas and 40 perches in urban areas. Though it would seem that the encouragement of the construction of medium-sized houses may lead to smaller families, statistics relating to housing shows that this restriction would only have a bearing on the size of the houses to be

^{148/} A "person" for the purposes of this Law means "(a) a family (i) consisting of the surviving spouses or spouse and any surviving child or children under the age of eighteen years, or (ii) if there are no surviving spouses, any surviving child or children under the age of eighteen years, or (b) any individual who is eighteen years of age or over, or (c) any other person within the meaning of the Interpretation Ordinance not being any such family or individual".

^{149/} The number of houses which a person who is not a member of a family could have is two (see Section 2 (2) of this Law).

constructed in municipal and urban areas where suitable land is already difficult to obtain. In 1971 the average floor area of a housing unit in urban areas was only 500 square feet and nearly 62.4 per cent of the houses had three or less rooms. The average number of occupants per housing unit in urban areas was 6.2 occupants per unit. With increasing difficulties in finding accommodation the *per capita* floor area has also been decreasing slightly over the years^{150/}

Resort was frequently made by certain people to the institution of *fideicommissum* to ensure that ancestral and other property remained in the hands of successive generations. The fear that in the absence of heirs the property would have been distributed among numerous beneficiaries may have had a pro-natalistic effect. The abolition of Fideicommissa Act No. 20 of 1972 made it no longer possible for a person to create a *fideicommissum* to ensure the destination of his property throughout succeeding generations.

In an attempt to bring more land into cultivation and as a means of preventing large numbers of people from migrating into urban areas in search of employment, colonization schemes have been implemented from the early 1930s to settle landless pea-

sants in many parts of the country.^{151/} Under the provisions of the Land Development Ordinance, ^{152/} land was alienated to the colonists. In the selection of colonists one of the criteria that was applied was the size of the family - a person with a large number of children was preferred to a person with a small family^{153/} During the early stages, however, there was a need to select colonists with large families since a large amount of work had to be done to bring the land under cultivation and to hire labour was beyond the means of these colonists. In course of time it became apparent that this form of selection gives rise to serious social and economic problems. For instance, the children of colonists demanded that they too be given separate allotments of land. Also in view of the abundance of family labour, there was resistance to the use of labour saving techniques in agriculture. The provision in the Land Development Ordinance which provided that only one son could succeed to a holding would normally have had an anti-natalistic effect if not for the practice that has been followed without exception to informally divide the land among the various children.

^{151/} B.H. Farmer, *Pioneer Peasant Colonisation in Ceylon*, 1957, contains an interesting chapter on colonies and the population problem.

^{152/} Ordinance No. 19 of 1935 (Chapter 464 of the L.E.C.).

^{153/} R.K.W. Goonesekere, "Laws relating to national development and their effect on population", in *Proceedings of the Seminar on Law and Population in Sri Lanka*, 1974.

^{150/} Hugh Karunayake, "Housing development in Sri Lanka, 1953-1971", *Marga*, vol. 2, No. 3, 1974.

CHAPTER XVIII

POPULATION GROWTH AND THE STATUS OF WOMEN

A. INTRODUCTION

The status of women and the growth of population are interrelated. In a sense, each is a determinant and consequence of the other. Fertility patterns, and hence patterns of population growth, are to a certain extent associated with status of women. In many countries it has been observed that a general improvement in the over-all status of women leads to the enhancement of the quality of life both at the micro-level of the family and at the macro-level of the community and to the greater acceptance of the "small-family" norm. Indeed, "the exercise of the right of parents to decide freely and responsibly on the number and spacing of their children is closely related to the extent to which women are integrated into the social, economic, cultural and political process of development of the societies in which they live".^{1/} Population trends and pressures, by imposing severe strains on limited resources, are likely to exacerbate the disadvantages women suffer.^{2/} Migration, both internal as well as international, also has its special impact on women because invariably they are left behind struggling to maintain and support their children and families.

It may be noted that it is not possible to define precisely the term "status of women". On the one hand, the term may refer to those characteristics which determine a woman's place on a scale of rank and prestige in society. On the other, it also implies the various positions a woman may occupy in social life, as for example, the position of mother or wife. "When we speak of the "status of women", then, we are speaking of the conjunction of positions a woman occupies at any one point of time, as a worker, student, wife, mother, church member, political worker, or whatever, and of the rights and duties she is expected to exercise in her active role as occupant of these positions. It is generally accepted that women are discriminated against and that men have more prestige, power and privileges in almost all societies. But the direct measurement of status is

a difficult and complex problem which hinders investigation of the causes and consequences of this particular form of stratification"^{3/}

"Status" and "discrimination" are both relative terms. In the absence of any universal criteria to determine what "absolute status" or "absolute discrimination" would constitute, one could only ascertain the extent to which "status" is present or "discrimination" exists. The United Nations Declaration on the Elimination of Discrimination Against Women, for instance, considers the aspect of discrimination against women from the point of view of denying or limiting their "equality of rights" with men.^{4/}

In considering the status of women *vis-a-vis* the status of men, attention has to be focused on certain areas in which discrimination exists or could exist. These areas could be easily identified in relation to certain rights which men and women are expected to enjoy equally, such as political rights; rights to education and training; rights to employment and security; and rights under the civil law. It has, however, to be recognized that in certain areas while equality of right may exist in theory, in practice this may not be the case. Various cultural, social, economic and religious prejudices and barriers may operate to prevent the participation of women on equal terms with men. It would thus appear that in considering the question of "status" or "discrimination", one has to examine the problem from a broad perspective taking cognizance of the various facets involved.

B. DEMOGRAPHIC PROFILE

The population of Sri Lanka according to the latest census held in 1971 was 12,689,897. Of this number, 6,158,536 or 48.5 per cent were females. As noted in chapter V, the proportion of females in the total population in 1871 was 46.7 per cent. There has, thus, been a steady increase in this proportion

^{1/} United Nations, "Resolution XII, Population and Status of Women", *World Population Conference: Action Taken at Bucharest* (New York, Center for Economic and Social Information, 1974), p. 47.

^{2/} In many societies, women usually lose out if they have to compete with men for limited educational facilities and limited employment opportunities.

^{3/} United Nations, Commission on the Status of Women, *Study of the Interrelationships of the Status of Women and Family Planning, Report of Special Rapporteur* (Bangkok, E/CN.6/575, 1973) (mimeo), p.7.

^{4/} United Nations, *Declaration on the Elimination of Discrimination Against Women* (New York, Office of Public Information, 1968).

during the hundred years between 1871 and 1971.

An important factor which has been responsible for the increase in the proportionate share of the females in the total population has been the striking decline in female mortality in recent years. As noted in chapter VIII, between 1921-1922 and 1971, the decline in mortality has been greater for females than for males at all age intervals except the 1-4 and 5-9 age groups. In 1974, the crude death rate for females was 7.5 compared with 10.2 for males. The expectation of life at birth of 66.7 years for females in 1971 was higher than the corresponding value of 64.2 years for males. Given current mortality and fertility conditions, it has been estimated (table 248) that the number of females will be almost equal to the number of males by the end of this century, the proportion of females in the total population then being 49.7 per cent.

According to the 1946 census of population, 13.7 per cent of all females in the country were resident in urban areas while the balance 86.3 per cent were rural residents. By 1971, however, the proportion of women residing in urban areas increased to 21.7 per cent and consequently there has been a decline in the proportion of females resident in rural areas to 78.3 per cent. On account of these changes, the proportionate share of females in total urban population increased from 41.8 per cent in 1946 to 46.8 per cent in 1971.

C. POLITICAL RIGHTS

The Constitution of the Republic of Sri Lanka guarantees *inter alia* that: (a) all persons are equal before the law and are entitled to equal protection of the law; (b) no person shall be deprived of life, liberty and security of person except in accordance with the law; and (c) all citizens have the right to

Table 248. Projected population of Sri Lanka by sex, 1976-2001

Projection year	Projected population (thousands)			Percentage of females in total population	Females per 100 males
	Total	Male	Female		
1976	14,283	7,275	7,008	49.1	96.3
1981	15,826	8,036	7,790	49.2	96.9
1986	17,357	8,787	8,570	49.4	97.5
1991	18,868	9,527	9,341	49.5	98.0
1996	20,338	10,244	10,094	49.6	98.5
2001	21,786	10,948	10,838	49.7	99.0

Source: CICRED, *The Population of Sri Lanka* (Colombo, Department of Census and Statistics, 1974), appendix table VIII.

In 1971, 39.5 per cent of all females were below 15 years of age, the corresponding proportion for males being 38.6 per cent. The number of females in the working ages, 15-64 years, constituted 56.5 per cent of the total female population, while women in the reproductive ages, 15-44 years, comprised 44.7 per cent of all females ^{5/} The 1971 census also showed that 59.1 per cent of females aged 15 years and over were married, 31.3 per cent were single or unmarried, and 9 per cent were widowed. The proportion of unmarried females aged 15 years and over has been steadily increasing since 1946, and this phenomenon has been particularly significant in regard to females aged 20-24 years. In 1971, nearly 53 per cent of the females aged 20-24 years were unmarried, the corresponding proportion in 1946 being only 29 per cent ^{6/}

freedom of peaceful assembly and association. Women, on equal terms with men, are entitled to exercise the right to vote, to be eligible for election, to hold public office and to exercise public functions.

It was in the year 1931 that the universal franchise was granted to every citizen over the age of 21 years ^{7/} in Sri Lanka by the Donoughmore Commission, which was appointed in 1927 by the Secretary of State for the Colonies in the British Government, to consider proposals for the revision of the then existing constitution. In recommending that women also be given the right of franchise, the Commission observed: "Apart from the familiar arguments in its favour, and the general principle of sex equality, we have been impressed by the high infant mortality in the Island, the need for better

^{5/} For further details, see chapter V.

^{6/} For detailed discussion see chapter VII.

^{7/} In 1959, the universal franchise was extended to every citizen over 18 years of age.

housing, and for the development of child welfare, midwifery and ante-natal services, all providing problems in the solution of which women's interest and help would be special value."^{8/}

The Commission concluded: "It is also true that the position of women in the East has not till recent years been suitable for the exercise of political power, that position is rapidly changing and the demand for the vote was put before us by a large and representative deputation of Ceylonese ladies. It was difficult to deny the force of the argument that the women of Ceylon are at least as competent to exercise the vote as the women of India, a considerable number of whom already possess the franchise"^{9/}

The granting of the right of franchise to the women of Sri Lanka in 1931 was a significant and noteworthy achievement for more than one reason. First, this right was granted when the country was still a British colony, and long before it was granted to the women in most other Asian countries. In fact, it was only in 1928 that women in Great Britain were granted voting rights. Secondly, the voting right was conferred on the women of Sri Lanka in spite of the fact that there was no serious agitation for this right. A committee which consisted of the wives of certain leading personalities of the day did make representations demanding voting rights, but they did not carry out a vigorous campaign as such. Thirdly, it is also significant to note that at the time the recommendations were made to extend the right of franchise to women, demographers and social scientists had paid very little attention to the interrelationship between the status of women and population dynamics.^{10/}

Apart from the recommendation that women be given the right of franchise, the Donoughmore Commission emphasized the need for encouraging the women to influence public opinion in the country. The mechanics of doing this was through the gradual expansion of the female electorate by imposing at the outset a higher age qualification than that applicable to men. The Commission pointed out that "there is much to be said in favour of a procedure which will throw on the women themselves the responsibility for making efforts to influence opinion in Ceylon in favour of a fuller franchise"^{11/}

^{8/} Report of the Special Commission on the Constitution of Ceylon, 1928, p. 65.

^{9/} Ibid.

^{10/} D.C. Jayasuriya, "Beyond family planning", Seminar on Women, Home, and the Community, Colombo, October 1975.

^{11/} Report of the Special Commission on the Constitution of Ceylon, op.cit., p. 66.

The granting of the right to vote has enabled the women of Sri Lanka to play an important and active role in the exercise of political power. In 1931 itself, one woman was elected to the country's legislature^{12/}, and since then several others have either been elected to the House of Representatives or appointed to the Senate. In 1970, six women members were elected to the House of Representatives. It is significant to mention here that female participation in the political life of the country reached its climax in 1960 when Mrs. Sirimavo Bandaranaike became the first woman Prime Minister of the country and the first in the world to hold the office of Prime Minister. This event which is regarded as one of the "milestones towards the universal emancipation of women" recurred in 1970.

Though the number of women who had contested and won at the general elections is limited, there has been a greater representation of women in various local bodies. It will be noted from table 249

Table 249. Women contestants in local authority elections, Sri Lanka, 1960-1975

District	Number of women candidates	Number of women elected
Colombo	38	12
Kalutara	8	6
Matale	9	6
Kandy	-	-
Nuwara Eliya	5	1
Galle	13	3
Matara	9	1
Hambantota	6	1
Jaffna	3	2
Mannar	-	-
Yavuniya	1	-
Trincomalee	2	-
Batticaloa	4	3
Amparai	-	-
Puttalam	10	4
Kurunegala	7	2
Anuradhapura	8	4
Polonnaruwa	-	-
Monaragala	-	-
Badulla	4	-
Kegalla	11	5
Ratnapura	11	4

Source: Women of Sri Lanka, A Special Publication on the Status of Women (Colombo, Ministry of Information and Broadcasting, 1975).

^{12/} Mrs. Adeline Molamure was the first woman to be elected to the 1931-1936 State Council at a by-election from the Ruwanwella constituency. In a subsequent by-election, another woman, Mrs. Naysum Saravanamuttu was also elected to this Council from the Colombo North Constituency. Thus there were two women Members of State Council in 1931-1936.

that from 1960 to 1975, as many as 149 women have contested at the local authority elections and 54 were elected. "Women have been playing an increasingly important role in political activities at all levels. A major factor which has contributed to this development is the very high rate of literacy prevailing amongst men and women alike, in both the rural and urban areas. This has generated in the people - and particularly amongst the youth - a keen interest in political matters. All political parties lay a great deal of emphasis on raising the level of political awareness of their members through the media, discussions and political activity.

Women who are actively engaged in political work have proved to be intelligent, competent and conscientious. A survey of the main political parties in the country has shown that, on the average, about 35% of the total party membership and about 15% of the party office-bearers are women. Each political party has its own well-developed women's organisations ^{13/}

It is, of course, very difficult to evaluate the extent to which women in Sri Lanka have become conscious of the country's development problems as a result of exercising the right of franchise. Political parties with varying political ideologies and socio-economic policies have been participating at the general elections held in the country from time to time. The election manifestoes of these political parties have contained references to the socio-economic problems of the day, particularly the rising cost of living and unemployment. Consequently, it is very likely that problems of national development would have received the attention of voters, albeit, at different levels of sophistication. Various women's organizations have also taken an active part in the election campaigns. ^{14/}

It is also difficult to assess the extent to which the exercise of the voting rights by women was instrumental in reducing infant mortality as envisaged by the Donoughmore Commissioners. Quite contrary to the expectations of the Commissioners, infant mortality rates in Sri Lanka recorded an unexpected increase in the latter part of the 1930s and early 1940s due to outbreak of malaria in certain parts of the country. However, as was noted in chapter VIII, there has been substantial decline in general, mater-

nal and infant mortality rates since the late 1940s due to the expansion and improvement of the curative and public health services. Though most of the improved health measures were implemented as part of the over-all national welfare programmes, the fact that women had the right to vote may have been a factor responsible for accelerating the provision of these measures within a short period of time.

D. RIGHTS TO EDUCATION AND TRAINING

From very ancient times, the portals of learning in Sri Lanka were open to females as well as to males. Yet, at the beginning of this century, the Director of Public Instruction observed that "25 per cent of the female population of this country get something in the way of education."^{15/} It was also observed that in certain parts of the country female education was "still regarded with strong dislikes and distrust, based perhaps on the idea that it will upset the traditional customs of home life and render women unable or unwilling to perform those duties which are usually assigned to them".^{16/} However, recognizing that "it is only by female education that a better standard of home life can be attained", the Director of Public Instruction in his Administration Report for 1903 made out a strong case for promoting female education in the country. ^{17/}

In 1961, the National Education Commission observed: "The role of women in modern society cannot be confined to the home and it is becoming increasingly necessary, except in the very wealthy families, for women to become wage earners and contribute to the economic efficiency of the family. It is important that the education of girls should not be artificially circumscribed and that they should not be denied the same opportunities as boys. What special needs they have in order to play any speci-

^{15/} Administration Report of the Director of Public Instruction for 1903, cited in E.B. Denham, *Ceylon at the Census of 1911 being the Review of the Results of the Census of 1911* (Colombo, Government Record Office, 1912), p. 424.

^{16/} *Ibid.*

^{17/} The 1911 census superintendent noted: "The value of female education to the country is so great that its importance cannot be exaggerated. It is probable that on the education of the mothers of future generations the preservation of the vernaculars as living languages in Ceylon depends; the education of the children is unlikely to be neglected if their mothers can read and write their own language, and if children learn to read and write their own language at home, their school progress will be far more rapid and successful." See E.B. Denham, *op.cit.*, p. 424.

^{13/} *Women of Sri Lanka, A Special Publication on the Status of Women* (Colombo, Ministry of Information and Broadcasting, 1975), p. 43.

^{14/} A.J. Wilson, *Electoral Politics in an Emergent State: The Ceylon Elections of May 1970*, (London, 1975).

fically feminine role can be adequately met within the framework of a co-educational school and we must emphasize that in setting the curricular provision and staffing for co-educational schools special attention must be paid to these needs."^{18/}

The introduction of the free education scheme in 1945, the expansion of the central school system and the gradual change in the medium of instruction from English to the mother tongue, all had the effect of encouraging more women to receive education at all levels. School enrolment statistics for 1974 given in table 250 show that in all 25 educational districts of the country, girls are almost equal participants in the educational process. The slightly lower enrolment rates for girls is due to certain socio-economic pressures in the underprivileged districts.^{19/} The following data relating to the 1975 enrolments by grades and curriculum streams show that girls are well represented except in the science streams in senior secondary schools:

Grade	Percentage girls
Grades I-IX	48.5
Grades X-XII	52.1
Grades I-XII	48.6
Grades X-XII (Arts)	57.1
Grades X-XII (Science)	44.7
Grades X-XII (Commerce)	49.7

Over the past two or three decades, there has been a dramatic increase in the proportion of women students enrolled in the universities and in other institutions of higher learning. As noted in chapter XII (table 162), the percentage of women students increased from about 10 per cent in 1942 to about 42 per cent in 1972, and while the total number of university students has declined during the past

^{18/} *Interim Report of the National Education Commission 1961*, Sessional Paper No. 1 of 1962, para. 22.

^{19/} According to a study completed in 1960, "the early leaving of girls appears to have underlying it a more complex pattern of causation than the early leaving of boys. Certain factors appear to operate in one direction sometimes and in the opposite direction at other times. Some parents seem to withdraw girls earlier than boys as continued schooling would not be of very much benefit to them from the employment angle. Other parents withdraw boys earlier than girls as some immediate employment is available to the boys, but they let the girls continue at school as there isn't anything useful they could do at home. As the size of the family increases, girls tend to be withdrawn earlier than boys so that they could stay at home and look after their younger siblings". See J.E. Jayasuriya, "Some studies of early school leaving in Ceylon", *The Ceylon Journal of Historical and Social Studies*, vol. 3, No. 1, 1960 p. 25.

decade, the number of women students has continued to increase. Among the factors that have been attributed to the sharp increase in female enrolment at the university level are "the limited opportunities available to women in higher education other than the Universities, the greater persistence and diligence of women rather than men students, their keenness to study and willingness to forego other satisfactions for the sake of education, and the gradual break-down of the traditional concepts of womanhood and marriage which has created a new social and economic role of the woman as a bread winning partner."^{20/}

The distribution of student enrolments by areas of study indicates that there is an imbalance between males and females in certain fields of education at the university level but that there has been a steady increase in the proportion of women in almost all fields between 1966 and 1975 particularly in the field of medicine. Currently, male students substantially outnumber female students in the Faculties of Engineering and of Agriculture and Veterinary Science (table 251).

However, it may be noted that in 1967, the following observations were made regarding female education at the university level:

"From the point of view of the national investment in higher education, the University women present a special problem which has for the most part been ignored. Many women graduates marry and their skills are at least temporarily lost to society and for the rest there is a limited range of employment outside teaching. Assuming that women with the ability for it have the same right to university education as men, there is a case for providing courses which are appropriate for them as women and will broaden their vocational opportunities. This is especially the case in Ceylon where women actually form a majority of the students in arts subjects. To this end, consideration should be given to two related possibilities, home economics (subjects such as hygiene, dietetics, human biology and institutional and home management) and nursing."^{21/}

^{20/} D. Laksiri Jayasuriya, "Development in university education: The growth of the University of Ceylon, 1942-1965, *University of Ceylon Review*, vol. XXIII (122), p. 94.

^{21/} *Report on the Establishment of the University of Colombo*, Sessional Paper No. XXIV of 1967, p. 13.

Table 250. Distribution of pupils and teachers by sex and education district, Sri Lanka, 1974

Education district	Number of students			Number of teachers		
	Female	Male	Total	Female	Male	Total
Anuradhapura	40,755	44,799	83,554	1,210	2,287	3,497
Polonnaruwa	17,940	18,148	36,088	372	778	1,150
Kalutara	67,546	70,717	138,263	3,510	2,103	5,613
Kegalla	68,027	67,205	135,232	2,888	2,826	5,714
Kurunegala	91,118	95,149	186,267	3,640	4,107	7,747
Colombo South	97,049	103,192	200,241	5,215	1,895	7,110
Homagama	40,724	40,336	81,060	2,056	1,110	3,166
Gampaha	115,038	120,859	235,897	6,218	3,749	9,967
Galle	77,348	82,779	160,127	3,810	2,732	6,542
Nuwara Eliya	36,253	40,564	76,817	1,075	1,802	2,877
Bandarawela	35,057	38,538	73,595	1,299	1,698	2,997
Monaragala	16,416	18,025	34,441	356	911	1,267
Batticaloa	19,892	25,717	45,609	712	1,004	1,716
Amparai	10,057	10,218	20,275	228	473	701
Kalmunai	16,011	20,575	36,768	369	1,073	1,402
Trincomalee	18,669	19,744	38,413	503	904	1,407
Kandy	102,197	109,005	211,202	4,388	4,119	8,507
Matale	30,104	30,124	60,228	1,116	1,375	2,491
Matara	62,621	64,870	127,491	2,513	2,167	4,680
Tangalle	37,571	38,442	76,013	1,250	1,461	2,711
Jaffna	75,772	82,341	158,113	2,739	2,929	5,668
Mannar	7,432	8,362	15,794	249	360	609
Vavuniya	9,408	10,263	19,671	342	494	836
Ratnapura	56,021	57,317	113,338	2,139	2,199	4,338
Chilaw	51,084	56,572	107,656	1,895	2,382	4,277
Total	1,200,110	1,274,043	2,474,153	50,092	46,938	97,030

Source: Ministry of Education.

Table 251. Percentage of women students enrolled in the universities by faculty, Sri Lanka, 1966-1975

Faculty	Percentage of women students in total university enrolments		Percentage of women students in total admissions
	1966	1972	1975
Arts, Law, Education	43.5	48.9	45.2
Science, Architecture	23.8	36.3	33.8
Medicine, Dentistry	29.3	41.2	49.7
Agriculture, Veterinary Science	13.7	28.9	28.1
Engineering	1.9	7.1	11.9

Source: Same as table 249.

While at the general school level and in certain fields of university education, female students occupy almost equal places as male students, there is male dominance in the enrolments relating to second level technical institutions. Only about 23 per cent of all students enrolled in technical colleges are women, and nearly 85 per cent of these female students are enrolled in commerce courses. Less than 1 per cent of female applicants seek admission to the craft courses. These disparities reflect

to a large extent the popular demarcation of the labour market into jobs for males and jobs for females, and also the preference of girls generally for convenient desk jobs.

However, nearly half the number of applicants to agricultural schools in recent years have been females, although admission policies have tended to favour males, and nearly 40 per cent of those in such non-formal education centres as Young Farm-

ers Clubs, and about a third of those involved in youth settlement schemes are women. Female students outnumber males in teacher training colleges, Government College of Dancing, Government College of Music etc. As a result of the greater opportunities for females to receive education, over half the teaching profession in Sri Lanka consists of women (table 238). It has also been observed that in 1973, females accounted for about 28 per cent of the full-time and part-time teaching staff of the Colombo Campus of the University of Sri Lanka.^{22/}

The expansion of educational opportunities for women in recent decades has resulted in a startling increase in the female literacy rate from 8.5 per cent in 1901 to 70.7 per cent in 1971. Nevertheless, the 1971 female literacy rate is lower than the rate of 85.2 per cent for males. The educational attainment of the population aged 15 years and over given in table 171 (chapter XII) also shows that large disparities exist in regard to educational attainments of males and females in the older age groups; this gap is considerably narrowed in the younger age groups. In fact among those aged 15-19 years, the proportion completing GCE 'OL' and above was higher among females than males.

There is a close relationship between education and fertility. In the first instance, wider opportunities for education of females result in a rising age at marriage. It has already been noted in chapter VII that singulate mean age at marriage of women had recorded a steady increase from 18.3 years in 1901 to 23.5 years in 1971. This is further corroborated by the fact that the proportion of unmarried among young females, particularly those aged 20-24 years has increased substantially between 1946 and 1971. (table 89). Secondly it has also been shown (table 132 in chapter IX) that the average number of children borne by ever-married women decreased with increasing education.

E. RIGHTS TO EMPLOYMENT AND SECURITY

According to the chapter on "Fundamental Rights, and Freedoms" in the Constitution of Sri Lanka, "no citizen otherwise qualified for appointment in the central government, local government, public corporation services and the like shall be discriminated against in respect of any such appointment on the ground of race, religion, caste or sex; provided that in the interest of such services, specific posts or

classes of posts may be reserved for members of either sex.

The limitations that have been placed on the employment of women are two-fold. The first category consists of legislation which restricts the types of occupation which women, due to reasons inherent in their physical nature, are permitted to be engaged in. Limitations of this nature are not discriminatory. The second category consists of limitations on the employment of women in certain types of white collar and other jobs. For instance, in the past women were not allowed to apply for the Ceylon Civil Service (the former elite upper grades of the Administrative Service). Currently, recruitment of women to the Sri Lanka Administrative Service and the General Clerical Service is restricted to only 10 per cent of available vacancies. This limitation based on numerical percentage may not strictly be within the exemption provided by the Constitution which permits only "specified posts" or "classes of posts" to be reserved for members of either sex.

The legislation which requires employers to provide maternity benefits and also welfare facilities to infant children of working mothers^{23/} may have the effect of discouraging the employment of females. It has been observed: "..... the liability of the employer for paid maternity leave is a cause of discrimination against female labour, particularly married women. Given the volume of unemployment in Ceylon, however, it is questionable whether this is on balance socially damaging".^{24/} There may be employers who are generally reticent in employing married females because of the problem of frequent absenteeism. In the social setting of Sri Lanka where the extended family system is widely prevalent, there is very often no shortage of elders to look after young children at home when the mothers are away at work.

As noted in chapter XIV, between 1946 and 1971 the total labour force aged 15-59 years in Sri Lanka increased by about 91 per cent from 2,309,000 to 4,407,000. During the same period, the female labour force increased by 135 per cent from 486,000 to 1,145,000. Consequently the share of the females in the total labour force aged 15-59 years increased

^{23/} *Maternity Benefits Ordinance No. 32 of 1939* (Chapter 140 of the Legislative Enactments of Ceylon); *Medical Benefits Ordinance No. 9 of 1912* (Chapter 226 of the L.E.C.); and *Shops and Office Employees (Regulation of Employment and Remuneration) Act No. 19 of 1954*, (Chapter 129 of the L.E.C.).

^{24/} ILO, *Matching Employment Opportunities and Expectations: A Programme of Action for Ceylon*, The Technical Papers of an Inter-Agency Team (Geneva, 1971), p. 82.

^{22/} K. Karunanayake, "Needs, resources, possibilities and priorities for university adult education in Sri Lanka", *National Seminar on University Adult Education in Sri Lanka*, Colombo, 1975.

Table 252. Proportion of females among the employed persons in each major occupational group, Sri Lanka, 1963 and 1971

Major occupation group	Females as percentage of total	
	1963	1971
All occupations	20.5	22.5
Professional, technical and related workers	38.7	41.3
Administrative and managerial workers	3.4	5.7
Clerical and related workers	5.7	11.2
Sales workers	5.8	6.3
Service workers	25.0	23.8
Workers in agriculture, forestry and fishing	24.9	28.0
Production and related workers ^{a/}	12.4	14.8
Workers not classified by occupation	29.3	20.8

Sources: Census of Population 1963; Census of Population 1971

Note: a/ Includes miners, quarrymen, workers in transport and communications, craftsmen, production process workers and labourers not elsewhere classified.

from 21 per cent in 1946 to about 26 per cent in 1971. "Greater access to secondary and higher education, the decline of social norms which inhibited the entry of women to many occupations, the trend towards increased participation of married women motivated by economic factors and educational qualifications, and longer expectation of life resulting from improved health services are major factors which contributed to this increase".^{25/}

The percentage distribution of employed population by major industrial sectors and sex given in table 199 (chapter XIV) shows that there has not been any significant changes in the sectoral distribution of the employed females between 1953 and 1971. The very high proportion (62 per cent) of the employed females found in the primary industries (agriculture, fishing and forestry) could be explained in terms of the large number of females engaged as paid employees in the commercial plantation sector and as unpaid family workers in traditional subsistence agriculture. It is also evident from the table that there are considerable differences in the sectoral attachment of the urban and rural female workforce. While nearly 70 per cent of the rural female workforce is engaged in the primary sector, an equal proportion of the urban female workforce is employed in the tertiary sector (comprising the major industrial divisions of electricity, gas, water

and sanitary services; commerce, transport, storage and communication; and other services).

A 10 per cent sample tabulation of the 1971 census data showed that women formed over 50 per cent of all persons employed in the following industries: tea cultivation (52 per cent); spinning, weaving and finishing of textiles (75.8 per cent); and domestic services (55 per cent). The census also revealed that there were no women employed in hunting, trapping and game propagation; logging; petroleum refineries; non-ferrous metallic base industries and the manufacture of transport equipment.^{26/}

The analysis of the various occupational groups given in table 252 shows that in 1971, nearly 41 per cent of all professional, technical and related workers were females, the corresponding proportion in 1963 being about 39 per cent. Although the proportion of women who are in the professional and technical occupational category seems relatively high, 98 per cent of them are in the teaching and medical, dental and veterinary occupations. Thus, the entry of women into other professional services has been very low. According to the 1971 population census, women constituted over 50 per cent of those employed in the following occupations: teaching (53 per cent); stenographers and typists (57 per cent); telephone

^{25/} *Women of Sri Lanka, op.cit.*, p. 59.

^{26/} Government of Sri Lanka, *Census of Population 1971, Preliminary Report* (Colombo, Department of Census and Statistics, 1974), table 8.

and telegraph operators (51 per cent); and house-keeping services (57 per cent).

The increase in education among women on the one hand, and the peculiarities of the labour market on the other, has resulted in higher rates of unemployment among females compared with males. According to the 1971 census data, 31 per cent of the female workforce was unemployed, the corresponding proportion for males being only 14 per cent. The 1971 census also showed that while females constituted only 22 per cent of all employed persons, their share of the unemployed population was as high as 44 per cent.

It is clear from the discussions in the preceding paragraphs that: (a) there is a traditional demarcation of the labour market into male and female sectors, the occupations in which women are employed in large numbers being nursing, teaching, weaving, stenography and typing which have traditionally been considered as feminine occupations, few or no women being employed in technical and technological grades, management, defence and transport services which have been exclusively filled by males; women tend to concentrate in lower level occupations because of lack of training facilities and incentives and factors inherent in the social climate. For instance, a very high proportion of women employed in agriculture and industry are in the semi-skilled and unskilled categories; in the service sector the majority are engaged in routine clerical jobs while in the professions their late entry has been a handicap to advancement.

As noted earlier, though "there is hardly any discrimination in education, imbalances in educational provision and culturally conditioned barriers limit the access of women to some areas of employment. Sex-based curriculum diversification, traditional vocational preferences of school leavers and the demarcation of the labour market into 'masculine' and 'feminine' occupations by employers as well as by women employees themselves has tended to encourage the concentration of women in some fields in these service sector of the economy and to limit their participation in managerial, technical and trade training programmes and employment. The current unemployment situation has affected women and chiefly educated women more than men and has contributed to reinforcing the old concept of women as surplus labour or secondary earners."^{27/}

^{27/} *Women of Sri Lanka, op.cit.*, pp.53-54.

Table 253. Projected labour force by sex, Sri Lanka, 1971-2001

(thousands)		
Projection year	Male	Female
1971	3,265	1,169
1976	3,776	1,396
1981	4,321	1,633
1986	4,875	1,869
1991	5,440	2,104
1996	6,017	2,342
2001	6,578	2,567

Source: CICRED, *The Population of Sri Lanka* (Colombo, Department of Census and Statistics, 1974), appendix table IX.

The projected growth of the male and female labour force up to 2001 is shown in table 253. It will be seen that during the 25-year period 1976-2001, while the male labour force will increase by about 74 per cent, the female labour force will increase by about 84 per cent. In the context of the rapid increase in the labour force on the one hand, and the slow rate of growth of employment opportunities on the other, it is likely that males and females will compete equally for the limited number of available jobs. Since males have been the traditional bread-winners, would they be preferred to females in the process of selection? If this were to happen, there would be discrimination against women. Unless suitable and remunerative alternatives to employment could be provided, such discrimination is likely to have adverse effects on the "status" of women. A change in the social system and social values whereby women too become recognized as bread-winners of the family could, however, reduce the extent of possible discrimination against women.

In recent years, the State as well as voluntary organizations have been focusing attention on rural development schemes as a means not only for generating employment but also for involving women in development tasks. Rural development societies were originally conceived of as multipurpose organizations that would attend to various aspects of economic, social, cultural and physical improvement needs of villages. It was envisaged that through the mechanisms of these societies, other government departments would be able to harness the available manpower and financial resources at the village level for development purpose. In 1969/70 more than 7,000 men's rural development societies and 1,900 women's rural development societies were functioning actively. In 1970, there were nearly 2,800 government and government-assisted demonstration and training centres, schools, workshops and co-opera-

tive industrial societies set up to transmit the technical know-how and develop skilled workers in textiles, carpentry, pottery, coir-manufacture, needlework, toys, metal work, lacquer, lace, wood carving and other industries. The activities of a number of voluntary organizations and associations also include programmes for training rural women in handicrafts, sewing, embroidery and lace-making. ^{28/}

In discussing employment, reference should also be made to the security schemes that are available. Apart from the noncontributory pension scheme that is available to male and female state officers, there is also a contributory widow's and orphan's pension scheme which provides pensions to widows and orphans of pensionable state officers. Male and female employees in the private sector and in public corporations and their employers have to contribute to an Employee's Provident Fund. Upon the death of an employee, the heir or the person nominated is entitled to the amount outstanding to the credit of the employee's account. A female could withdraw the amount standing to her credit on reaching the age of 50 years or upon ceasing to be an employee in consequence of marriage. There is also a Workmen's Compensation Scheme in operation. The security schemes that are available in Sri Lanka afford a greater degree of protection to females and orphans.

F. RIGHTS UNDER CIVIL LAW

In terms of the General Law (which is based on the Roman-Dutch Law ^{29/}), the woman was considered *feme sole*. According to the concept of universal community of property recognized by the Roman-Dutch Law, all the property owned by the woman was held in community and was managed exclusively by the husband. Further a married woman had limited contractual capacity and could not sue or be sued in her own name. The Married Women's Property Ordinance ^{30/} which was enacted in 1923 restored to

the married woman the right to hold property and to enter into contracts as if she were unmarried, to sue and to be sued in her own name without joining her husband, to grant loans to her husband etc. This Ordinance has therefore been described as "a landmark in the emancipation of women" ^{31/}. Women who were subject to the Kandyan Law, Muslim Law and the Thesawalamai ^{32/} were also entitled to enjoy most of those privileges even under the various Customary Laws. ^{33/}

In the past, membership of juries was restricted to men. However, with the passage of the Administration of Justice Law No. 44 of 1973, ^{34/} women became eligible to serve as members of the jury in Sri Lanka. The Administration of Justice Law also provides for certain safeguards for women in respect of punishment. In terms of Section 237 (4) of this Law, "where a woman convicted of an offence punishable with death is found to the satisfaction of the court to be pregnant, the court shall pronounce on her, in lieu of the sentence of death, a sentence of imprisonment for life" Section 242(2) provides that no female shall in any case be punished with whipping.

Though there has been a progressive elimination of all forms of legal discrimination against women in Sri Lanka, an obnoxious piece of legislation which still remains in the statute book is the Money Lending Ordinance. ^{35/} According to Section 16 of this Ordinance, it is a criminal offence for a money lender to visit the residence of a married woman and induce her to contract a loan without the written consent of the husband. As was pointed out by the Supreme Court over 50 years ago, "these words contemplate a visit in the absence and without the knowledge of the person who is the natural protector of a wife and child, and the whole provision is evidently intended to prevent a wife or child being tempted to contract a debt". ^{36/} At a time when women in Sri

^{28/} Among the important women's organizations are the Lanka Mahila Samiti; Young Women's Christian Association; Associated Country Women's Organization and Sri Lanka Women's Confederation.

^{29/} The system of law described as the Roman-Dutch Law is that which obtained in the Province of Holland during the existence of the Republic of the United Netherlands. Its main principles were carried by the Dutch into their settlements in the East and West Indies, one of which was Sri Lanka. The Roman-Dutch Law is derived from the two sources of Germanic Custom and Common Law.

^{30/} Ordinance No. 18 of 1923 (Chapter 56 of the Legislative Enactments of Ceylon).

^{31/} H.W. Tambiah, *Principles of Ceylon Law*, 1972, p. 239.

^{32/} Thesawalamai is one of a variety of laws by which the people of Sri Lanka are governed, and is the law applicable to the "Malabar inhabitants of the province of Jaffna". Before it was codified by the Dutch, it was a customary law applicable to the Tamils who inhabited the Jaffna district and has prevailed in that district for several centuries.

^{33/} For further details, see C.G. Weeramantry, *Law of Contract*, pp. 475-488.

^{34/} This Law came into force on January 1, 1974.

^{35/} Ordinance No. 2 of 1918 (Chapter 80 of the Legislative Enactment of Ceylon).

^{36/} *Mohamed Bhai vs. Newman* (1920) 22 N.L.R. 409 at 410.

Lanka are successfully competing with men in the educational, social, political and cultural spheres, the retention of such a provision could hardly be justified.

G. SUMMARY

In Sri Lanka, the current and anticipated trends in the growth, composition and distribution of the population coupled with other socio-economic factors have certain implications for the status of women in the country. As noted earlier, post-war rapid decline in mortality, particularly of female mortality, has resulted in an increase in the proportion of women in the total population while at the same time ensuring to them a higher expectation of life than men. Thus not only are women now numerically almost equal to men, but they also have, on the average, a longer duration of existence, and these trends are expected to continue into the future as well. These developments will tend to affect the social, political, and economic status of the women.

In the first instance, as was noted in chapter VII the increase in the number of females in the popular marriageable age groups (15-29 years) without a corresponding increase in the number of males in the appropriate age groups (20-34 years)^{37/} has resulted in a serious "marriage squeeze" in that a substantially high proportion of women in the marriageable age groups (89.4 per cent of those aged 15-19; 53.2 per cent of those aged 20-24; and 24.6 per cent of those aged 25-29 years) remained unmarried in 1971. Since this serious sex imbalance in marriageable ages will continue beyond 1976, the average age at marriage of women may rise further from the relatively high level of 23.5 years in 1971.

^{37/} In Sri Lanka, females tend to marry males who are about five years their senior in age and a very high proportion of women marry for the first time between ages 15 and 29 years while most men do so between ages 20 and 34 years.

The consequent reductions in the proportions marrying at the prime childbearing years are of considerable significance for fertility reduction.

Secondly, the increase in the size of the population of school-going age together with the increased provision of facilities for female education has resulted in a tremendous expansion of female student enrolments over the years. Consequently, there has been an increase in the level of literacy and educational attainment of the females and striking advances in the position of women in national life. With further increases in the school-going population on the one hand and the limitation of finances on the other, the resources to be allocated for education and the priority to be given to female education *vis-a-vis* male education may in future become some of the difficult issues to be resolved.

Thirdly, the expansion in the population of working age together with increasing educational levels has resulted in an unprecedented increase in the female labour-force participation. Estimates also indicate that over the next two decades or so, the female labour force will increase faster than the male labour force. Already the level of unemployment among females is very much higher than that among males and increases in the female labour force will further aggravate this problem. In the context of a slow rate of growth of employment opportunities, women would tend to be discriminated against in the selection for employment unless there is a change in social values and women also came to be increasingly recognized as bread-winners.

The challenge which the women in Sri Lanka face today is that of harmonizing the role which they are now called upon to play in view of new social responsibilities and economic needs of the family with the role they have been traditionally playing as wives and mothers.

ANNEX I

SOURCES OF DEMOGRAPHIC DATA

A. INTRODUCTION

Sri Lanka is in the extremely fortunate and, in a Southeast Asian context, unique situation of possessing a wealth of demographic data upon which a considerable degree of reliance can be placed. The first in its regular census series was initiated in 1871, while the registration of vital events commenced in 1887. Information is also available on the movement of persons into and out of the country from the latter part of the last century. Thus basic data exist to chart the course of Sri Lanka's demographic history over a period of more than 100 years. In addition, the several sample surveys carried out in the country in recent years provide an abundance of data on the demographic, social and economic characteristics of the people. No wonder, therefore, a distinguished demographer observed:

"The prolific historical records and the incomparable analytical potentialities of the current censuses and vital records make Ceylon a true laboratory for demographic research. Here much that is now speculative can be reduced to specific hypotheses and subjected to the rigid test of quantitative verification. But to the Government of Ceylon, the facts of censuses and vital records and the demographic generalizations based on them are but means to an end, which may be broadly defined as the improvement of the levels of living of the people, or more narrowly defined in terms of such specific goals as agricultural self-sufficiency, a prosperous peasantry, a literate people, industrialization, etc. Demographic research may indicate those factors in the Ceylonese culture that are related most closely to differential fertility and hence are presumably most susceptible to manipulation if a declining rate of natural increase is recognised as essential. Projections of the population into the future may stimulate a more widespread recognition of the population problem, particularly the awesome magnitude of the population increase implicit in the future if death and birth rates should remain as at present or should follow paths of decline comparable to those of the West or Japan"^{1/}

B. POPULATION AND HOUSING CENSUSES

1. History of censuses

In Sri Lanka, the first known census enumeration

was carried out in 1789 during the Dutch period. This census, taken on the orders of Governor Van de Graff, was confined to the inhabitants of the maritime territory of the Dutch East India Company in Sri Lanka (then known as Ceylon). The count gave the total number of inhabitants of both sexes and all ages as 817,000. The population of the entire country was estimated to be 1.5 million ^{2/}.

A census of the maritime provinces seems to have been taken by the British in 1814 and a census of the Kandyan provinces in 1821. Although population figures purported to be from these censuses are available, there is no indication of how the censuses were organized, or of the extent of reliability of the data.

The earliest enumeration, of which there is any record, was made on an order of the Government dated 27 January, 1824, but the results were published three years later in 1827 and it is uncertain as to when the census was actually taken. It gave the population by sex, distinguishing those above the age of puberty from those under that age. The total population was shown as 851,940. It has, however, been observed that "making allowance for omissions due to the difficulty of enumeration at that early period, a million would probably be nearer the truth"^{3/}.

The first legislative provision for a census was made in 1869 ^{4/}. The Governor, with the advice of the Executive Council was empowered from time to time, as he may deem necessary, to cause an enumeration to be made of the inhabitants of the island, or any portion thereof, and to make the necessary arrangements. The first census under this legislative provision was taken on 26 March 1871. It was unique in more than one way. It was the first census coming within the proper meaning of the "census" and was to be the first of a series of decennial censuses that followed.

The next two censuses, those of 1881 and of 1891, were taken under the provisions of the Census

^{2/} L.J.B. Turner, *Report on the Census of Ceylon 1921*, (Colombo, Government Printer, 1923), p. 4.

^{3/} P. Arunachalam, *The Census of Ceylon 1901, vol. 1*, (Colombo, Government Printer, 1902), p. 23.

^{4/} Census Ordinance No. 5 of 1869.

^{1/} Irene B. Tauber, "Ceylon as a demographic laboratory", *Population Index*, vol. 15, No. 4, October 1949.

Ordinance No. 9 of 1880 which replaced the Ordinance of 1868.

The Census Ordinance of 1880 was considered to be defective in that it did not give census officers powers which were deemed to be necessary. Hence a new ordinance was passed by the Legislature in 1900^{5/} The censuses of 1901, 1911 and 1921 were taken under the provisions of the 1900 ordinance.

In view of the financial stringency prevailing at that time and the decision to curtail expenditure, the census of 1931 was limited to a detailed enumeration in the City of Colombo only, while in the estates, particulars in regard to total population, sex and race were obtained from the superintendents of estates. In the rest of the island, only a head count of the total population was made. The census due in 1941 was not taken until 1946 on account of the Second World War. The subsequent censuses were taken at somewhat irregular intervals in 1953, 1963 and 1971.

It is noteworthy that even though the Census Ordinance did not specify the years in, or the intervals at, which the censuses should be taken, the censuses were in fact carried out at regular decennial intervals until 1931. Although plans were made to carry out a census in 1951, this census had to be postponed to 1953 on account of a shortage of paper. The next census followed in 1963. However, the last census was taken in 1971, in order to restore the earlier tradition of taking the census in the years ending in 1 and with the expectation of maintaining the decennial interval in future. This is also in accordance with the United Nations recommendations that the censuses be taken in the year ending in 0 or 1. ^{6/}

In view of the considerable migration between India and Sri Lanka, the censuses of these two countries until 1921 were taken on the same day. A choice of different dates in the two countries would have resulted in the omission from the census count of a considerable number of migrants in transit. Two important factors influenced the choice of the census date: (a) availability of sufficient moonlight to facilitate the enumerator's work on the census night, and (b) the absence of heavy movement of people from

^{5/} Ordinance No. 9 of 1900. This Ordinance was drafted by the then Registrar General, P. Arunachalam, on the lines of the Indian Census Act. See P. Arunachalam, *op.cit.*, p.25.

^{6/} United Nations, *Principles and Recommendations for the 1970 Population Censuses*, (Sales No. 67. XVII. 3).

one area to another. ^{7/}

2. Items included in the census schedule

a. Population census

The various items on which information was obtained at each census from 1871 are summarized in table 1. It will be observed that particulars relating to name, age, sex, principal occupation, religion and ethnicity (race or nationality) was collected regularly in all the censuses. In the 1963 and 1971 censuses, the date of birth was recorded in addition to age with a view to obtaining more reliable age data.

Information on the relationship to the head of the household was not obtained at any census from 1901 to 1931. Since these particulars are collected for purposes of checking the consistency of the information and not for the preparation of statistical tables, their omission does not affect the content of the tabulated data. Marital status (or conjugal condition) was included in the 1871 census schedule but was omitted from the schedules of the 1881 and 1891 censuses because there was considerable uncertainty at that time as to what constituted a legal marriage in the country. Further "the information under the head conjugal condition was so untrustworthy that no tables had been framed from it" ^{8/}. However, the item was re-introduced at the 1901 census because "the doubts no longer exist, the highest courts (the Supreme court of the Island and the Privy Council) having held that cohabitation and repute raise a sufficient presumption of the marriage relation" ^{9/}, and has remained on the schedules of all subsequent censuses.

The term "nationality" as used in the earlier censuses referred to ethnic group (or race as it was then referred to) of the native population and country of origin of the persons of foreign origin. At the census of 1901, a note was added to the heading of the column for nationality requiring that Low-country Sinhalese be distinguished from Kandyan or

^{7/} The 1891 census superintendent observed: "For purely local reasons, too, a day in February is preferable to any later date. During this month dry weather may be anticipated throughout the Island and the movement of the Sinhalese people towards their homes, which begins to take place towards the end of March, in preparation for the annual national festival, has not yet begun". In Lionel Lee, *Census of Ceylon 1891*, vol. I, *A General Report*. (Colombo, 1892)

^{8/} G.S. Williams, *Census of the Island of Ceylon 1871: General Report* (Colombo, Government Printer, 1872), p. x.

^{9/} P. Arunachalam, *op.cit.*, p. 29.

Table 1. Topics included in the population schedule at the censuses in Sri Lanka, 1871-1971

Topics included in the population schedule	1871	1881	1891	1901	1911	1921	1931 ^{a/}	1946	1953	1963	1971
Demographic and personal characteristics											
Name	X	X	X	X	X	X	X	X	X	X	X
Relationship to head of family or household	X	X	X	-	-	-	-	X	X	X	X
Sex	X	X	X	X	X	X	X	X	X	X	X
Date of birth	-	-	-	-	-	-	-	-	-	X	X
Age	X	X	X	X	X	X	X	X	X	X	X
Marital status	X	-	-	X	X	X	X	X	X	X	X
Ethnic group or nationality	X	X	X	X	X	X	X	X	X	X	X
Religion	X	X	X	X	X	X	X	X	X	X	X
Citizenship	-	-	-	-	-	-	-	-	X	X	X
Educational characteristics											
Ability to speak Sinhala or Tamil	-	-	-	-	-	-	-	X	X	X	-
Ability to speak English	-	-	-	-	X	X	X	X	X	X	-
Literary	-	X	X	X	X	X	X	X	X	X	X
Literary in English	-	-	-	X	X	X	X	X	X	X	-
Educational attainment	-	-	-	-	-	-	-	-	XS	X	X
School attendance	-	-	-	-	-	-	-	-	-	-	X
Economic characteristics											
Type of activity	-	-	-	-	-	-	-	-	-	X	X
Principal occupation	X	X	X	X	X	X	X	X	X	X	X
Subsidiary occupation	-	-	-	X	X	X	-	-	-	-	-
Industry	-	-	-	-	-	-	-	X	X	X	X
Employment status	-	-	-	-	-	-	-	X	X	X	X
Salary or wages (income)	-	-	-	-	-	-	-	X	XS	-	-
Dependency (means of subsistence of earner on whom dependent)	-	-	-	X	X	X	X	X	X	-	-
Period for which unemployed	-	-	-	-	-	-	-	-	XS	-	X
Migration and residence information											
Place of birth	X	-	X	X	X	X	X	X	X	X	XS
Place of usual residence	-	-	-	-	-	-	-	-	-	-	XS
Duration of stay at usual residence	-	-	-	-	-	-	-	-	-	-	XS
Place of previous residence	-	-	-	-	-	-	-	-	-	-	XS
Length of residence in Sri Lanka	-	-	-	-	-	-	-	-	-	-	XS

Table 1 (cont'd)

Topics included in the population schedule	1871	1881	1891	1901	1911	1921	1931 ^{a/}	1946	1953	1963	1971
Nuptiality and fertility											
Date of marriage	-	-	-	-	-	-	-	X	XS	-	-
If previously married, date of first marriage	-	-	-	-	-	-	-	X	XS	-	-
Age at first marriage	-	-	-	-	-	-	-	-	-	-	XS
Duration of first marriage	-	-	-	-	-	-	-	-	-	-	XS
If married more than once duration of subsequent marriages	-	-	-	-	-	-	-	-	-	-	XS
Age at birth of first child	-	-	-	-	-	-	-	X	XS	-	-
Number of children ever born	-	-	-	-	-	-	-	X	XS	-	XS
Number of children living	-	-	-	-	-	-	-	-	-	-	XS
Date of last live birth within last five years	-	-	-	-	-	-	-	-	-	-	XS
Other topics											
Infirmity	v	X	X	X	X	X	-	X	X	X	-
Orphanhood	-	-	-	-	-	-	-	X	X	-	-

Notes: x denotes that the information was collected from all persons.
 xs denotes that the information was collected from a sample only.
 - denotes that the information was not collected.

a/ Obtained from all persons within the Colombo Municipality only.

Highland Sinhalese. This distinction has continued up to this date. A similar distinction between Sri Lankan Tamils and Indian Tamils and between Sri Lankan Moors and Indian Moors was introduced in the 1911 census and still continues.

Information on literacy in any language was obtained for the first time in the 1881 census and has continued to be collected in all subsequent censuses. Additional information on literacy in English was obtained from 1901 onwards but this item was omitted from the 1971 census schedule. Information on ability to speak English was collected at all censuses from 1921 to 1963, and information on ability to speak Sinhalese or Tamil from 1946 to 1963; both these items were omitted in 1971. "Educational attainment" was an item introduced for the first time in 1953 while "school attendance" was added to the schedule in 1971.

Information on principal occupation has been collected at every census, but the question on subsidiary occupation was introduced only in 1901. It continued to be included in the schedules of the next two censuses held in 1911 and 1921, but was dropped from 1953 onwards. Information on dependency (i.e. means of subsistence of persons on whom the non-earners were dependent) was also obtained from 1901 onwards until 1953 but was discontinued in 1963 and 1971. The questions relating to industry and employment (or occupational) status were included for the first time in the 1946 census schedule and have been repeated in the subsequent censuses. ^{10/}

A question on salary or wages was asked in the 1946 and 1953 censuses only. This item has been omitted from subsequent censuses in view of the difficulty of obtaining or estimating the income of self-employed persons in agriculture.

With a view to distinguishing between the economically active population and the inactive population, a question on type of activity was included in the 1963 census schedule. But this information was obtained indirectly at the 1953 census by requiring that for dependants the principal occupation of the person on whom he depends should be stated under the column headed "Principal occupation" together with the letter S for student, H for Housewife, U for unemployed and R for retired.

While the place of birth was asked at all the censuses with the exception of the 1881 census,

^{10/} For further discussion on this aspect, see S. Selvaratnam "Labour Force Data in Sri Lanka, Description of Sources and Annotated Bibliography (Bangkok, ILO ARTEP), (mimeo).

questions on place of usual residence, duration of stay at usual residence, and place of previous residence were introduced only in the 1971 census and that on a sample basis only. The length of residence in the country was asked only in 1946 and 1953.

Questions on nuptiality and fertility were included for the first time in the 1946 census schedules. In 1953 information on fertility was collected from a sample of the population while in 1963, questions on fertility did not find a place in the census schedules. In regard to marriage, the date of marriage was asked for in 1946 and 1953, while age at marriage and duration of marriage were asked for in 1971. The age of a woman at birth of the first child asked in 1946 and 1953 was also omitted in 1971. The questions on number of children living and date of last-live birth within the past five years were introduced in 1971.

Information on infirmities, that is whether a person was blind, deaf, deaf-mute or crippled has been obtained at all the censuses from 1871 with the exception of the 1931 and 1971 censuses.

b. Housing census

Information on housing was not collected in the earlier census, except in 1871 and 1881 when information on the kind of building and number of rooms was obtained. However, this information was not tabulated. The 1946 population census schedule included a few questions on material of wall and roof, number of rooms, tenure and occupancy of the dwellings occupied by each household. A separate household schedule was introduced at the 1953 census to obtain information on housing and this schedule contained questions relating to rent and length of residence in the present dwelling in addition to the information asked for in 1946.

A housing census proper, introducing the concept of housing unit as recommended by the United Nations and using a separate housing schedule, was taken for the first time in 1963 along with the population census. The enumeration was, however, done only in respect of a 10 per cent sample of the housing units, selected on a systematic basis from each urban and rural stratum in each of the 22 districts of Sri Lanka. At the 1971 census, the housing information was obtained in respect of all housing units in urban areas and in respect of the housing units in only 10 per cent of the census blocks in the rural areas. The housing items covered in the censuses since 1946 are shown in table 2.

Table 2. Information on housing obtained at the censuses in Sri Lanka, 1946-1971

	1946	1953 ^{a/}	1963 ^{b/}	1971
Whether housing unit or other	-	-	-	X
Whether used for residence only or for business too	-	-	X	X
Whether occupied or vacant	-	-	-	X
Type of structure (house, flat etc)	-	-	-	X
Material of walls	X	X	X	X
Material of roof	X	X	X	X
Material of floor	-	-	X	X
Year of construction	-	-	-	X
Water supply	-	-	X	X
Bathing facilities	-	-	-	X
Toilet facilities	-	-	X	X
Type of lighting	-	-	X ^{c/}	X
Number of rooms	X	X	X	X
Floor space	-	-	X	X
Availability of kitchen	-	-	X	X
Fuel used for cooking	-	-	X	-
Tenure (whether rented or owned)	X	X	X	X
If owned and mortgaged, race of mortgagee	X	-	-	-
Rent	-	X	X	X
Number of families in household — occupying unit	-	X	X	X
Number of persons in household — occupying unit	X	X	X	X
Length of residence in present dwelling	-	X	-	-

Notes: a/ At the 1953 census the enumeration was done on a "household schedule" in which the particulars were obtained regarding the dwelling or portion of a dwelling occupied by the household.

b/ The enumeration covered only private housing units i.e. excluding institutions, boarding houses, hotels etc.

c/ In 1963 the question was "Is the housing unit provided with electricity".

3. Enumeration procedure

In 1871, the census enumeration aimed at obtaining a classified list of the inmates of each house in the country on the night of 26 March of that year. The schedules were distributed to the householders four days before the census night and collected the day following the census night taking care that they were duly filled in. If the householder had doubts or difficulty in filling the schedule, the enumerator was required to assist or if necessary fill it up himself.

The census was based on *ade facto* enumeration, that is, only inmates who were actually present in the house on the night of the census were to be counted; absent members were not counted unless they were watching in their fields. The enumerators were also required to ascertain and make an out-door return of cartmen, travellers etc. camping for the night in his area.

The responsibility for the execution and supervision of the census, including the appointment of enumerators and the demarcation of each enumerator's area, was entrusted to the government agents of the provinces and their assistants in the revenue districts in view of their thorough familiarity with their areas and their position as the representatives of the Government.

The operation was however not without difficulties. According to the census superintendent. "The difficulties to be encountered were not slight. The work was new to all. The Registrar-General himself had only such knowledge as can be gained by study of written records of similar proceedings. It was known that in some districts it would be almost impossible to obtain a sufficient supply of intelligent enumerators while in the office untrained clerks must be instructed in their duties by a teacher himself only a learner of the subjects he taught"^{11/}

^{11/} G.S. Williams, *op.cit.*, p. IX.

These difficulties, however, appear to have been overcome because the census superintendent later states: "There can be no doubt as to the substantial accuracy of the enumeration. It was simultaneous throughout the Island and the greatest care was taken in selecting the enumerators, apportioning their districts and checking their work. Although in some places the census was regarded with suspicion and disfavour, the Government may rest assured that the number of houses from which a properly filled schedule was not obtained is infinitesimally small. The same absolute confidence cannot be felt with regard to the returns of travellers, but judging from the pains taken in the cases which came under my observation, I am justified in reporting that the figures are fairly accurate" ^{12/}.

The enumeration procedure adopted at the 1881 census was the same as that in 1871. However, a few weeks prior to the actual enumeration, certain information in respect of each village was obtained with a view to securing from the enumerators a complete knowledge of their respective areas as well as data for estimating the number of forms required. The 1891 census followed the 1881 enumeration procedures with no major alterations.

A number of new features were introduced in the census of 1901. An important preliminary step was the preparation of a list of all houses in each village and in each ward of a town, numbering them for the purposes of the census, and the preparation of a statistical statement. This house list was required mainly (a) to ascertain accurately the number of householder's schedules required; (b) to determine the extent and number of the enumeration blocks that should be constituted; and (c) as a chief guide to the enumerators at the census enumeration. House lists which included shops, temples, carriage or cart stands, ferries and landing places were completed about six months prior to census enumeration.

Another distinguishing feature introduced in the 1901 census was the preliminary enumeration. In the system of one-day enumeration adopted in the previous censuses, the enumeration was practically effected through the agency of the householders, and the duty of the enumerators consisted "in the distribution of the forms and their collection after they have been filled. As only a small percentage of the population could read and write, and of that number but a very small proportion is intelligent enough to correctly fill in the somewhat intricate

form of schedule, the one-day enumeration of the type carried out hitherto was considered unsuitable for a country like Ceylon. The actual census operation was therefore divided into two phases: first the preliminary enumeration phase from 4th - 9th February 1901 during which period each enumerator visited, in a certain order, each of the houses in the block assigned to him and filled up the schedule for all the habitual residents in each house and for visitors likely to remain. The second phase was the final enumeration which was carried out on the night of 1st March except on estates where it took place early on the morning of 2nd March. A notice was issued beforehand requesting householders to avoid fixing the 1st March for weddings, dramatic performances, and the like, and on that night to remain in their houses and to keep awake with a light burning till the enumerator came round. On the evening of the 1st March the enumerator visited the houses in his block in the same order as at the preliminary enumeration, to ascertain whether each of the persons enumerated in the schedules of a house was still in the house and whether there were any in the house on this night whose names had not been recorded. If any of the recorded persons had died or was absent, the enumerator struck off with red ink all entries relating to such person. Regarding every new comer, newly-born infants, guests, and etc. - full particulars were entered, also in red ink. On this night were also enumerated travellers by road, rail, river, or canal, the houseless poor, and the sea-going population" ^{13/}.

It should, however, be noted that at the previous censuses too enumerators were required to fill in the schedule whenever the householders were unable to do so, but the main difficulty was that the time allowed them was insufficient. Hence the advantage of the modified procedure adopted at the 1901 census was that enumerators were given more time in which to complete their task. This would certainly have contributed to greater accuracy in the particulars obtained as well as in the coverage of the census.

Still another feature of the 1901 census enumeration was the preparation of a census manual ^{14/} containing detailed instructions in regard to all census operations, the procedures to be followed, specimens of the forms to be used, model schedules illustrating how each column should be filled

^{12/} *Ibid.* p. 10.

^{13/} P. Arunachalam, *op.cit.*, p. x.

^{14/} P. Arunachalam, *Manual of the Census of Ceylon 1901* (Colombo, Government Printer, 1901).

etc. It set out in detail the procedures to be followed in respect of the preliminary and final census enumerations, the enumeration in estates, and in institutions such as hospitals, jails, police barracks, military premises, railway premises and in regard to the enumeration of travellers by road, river etc. This manual proved very helpful to the officers engaged in taking the census. The procedures and methods introduced in the 1901 census have been found to be so satisfactory that at all subsequent censuses including the 1971 census, the same procedure has been followed with only minor modification to suit the changed circumstances.

An innovation introduced in the 1971 census was the considerable amount of pre-coding provided for on the census schedule itself by getting the enumerator to merely circle the appropriate code for the answer to each question. The permissible or possible answers as well as the codes were printed in each page in order to minimize errors. This feature was introduced with the intention of reducing to a minimum the amount of coding that would have had to be done in the office after the completion of the enumeration.

4. Processing and tabulation of data

The processing and tabulation of the data collected at the 1931 and earlier censuses were carried out manually. In the 1901 census, a method of abstraction by slips was adopted in place of the "cumbersome, antiquated and hardly trustworthy method of abstraction by strokes or ticks"^{15/} which was used in the three earlier censuses. Conventional tabulating machines were used for the first time at the 1946 census. The 1953 and 1963 censuses too were processed using conventional tabulating machines. A considerable amount of coding was done in the Census Office before the data was punched on to cards prior to tabulation.

Processing and tabulation of the 1971 census data was done on a computer. The coded data was first punched on cards before being transferred to magnetic tapes for computer processing. A further innovation adopted at the 1971 census was the use of a census schedule which was designed to enable as much as possible of the coding to be done at the enumeration itself. Since the responses to the various questions were coded at the enumeration stage, the extent of office coding was considerably reduced. This method could not, however, be adopted in the case of

information on education, occupation, industry and place of birth in respect of which the possible answers exceeded about seven or eight in number. In these cases the coding was done in the office after the enumeration.

The principal tabulations available from the various censuses are summarized in table 3.

5. Published reports

The published reports containing the results of each census have varied in scope and character. One single volume was issued in respect of each of the censuses of 1871 and 1881. The reports consisted of more than one volume at the subsequent censuses. The contents of the reports relating to the various censuses are discussed briefly in the following paragraphs.

The report of the 1871 census^{16/} contains a brief account of the circumstances leading to the taking of the first census, the procedures followed in the taking of the census and brief comments on the results. The statistical tables are given in the appendix to the report. Copies of the schedules and instructions are also reproduced in this report. The report relating to the 1881 census^{17/} follows the pattern of the 1871 report with the statistical tables appearing in the appendix.

The report on the 1891 census consisted of the three volumes,^{18/} the first being the general report, the second consisting of detailed statistical tables on the demographic characteristics of the population, and the third consisting of a list of towns and villages showing the number of houses, families and the population therein. It will be noted that detailed statistical tables which were included as an appendix in the report of the two previous censuses, were published in separate volumes at the 1891 census.

The results of the 1901 census were published in four volumes, the first being the general report, the second and third consisting of detailed statistical tables and the fourth containing town and village

^{16/} G.S. Williams, *op.cit.*

^{17/} Lionel Lee, *op.cit.*

^{18/} Lionel Lee, *Census of Ceylon, 1891: Vol I: General Report; Census of Ceylon 1891: Vol II: Detailed Tables of Age and Population exhibiting population by Age, Nationality, Birth Place, Education, Religion and Occupation; Census of Ceylon 1891, Vol III. List of Towns and village together with Houses, Families and Population therein.*

^{15/} P. Arunachalam, *op.cit.*, p. 1. This method is explained in great detail in the census report.

Table 3. List of principal tabulations available from population censuses Sri Lanka, 1871-1971

Tabulation	1871	1881	1891	1901	1911	1921	1946	1953	1963	1971
Total population										
Population (total)	TV	TV	TV	TV	TV	TV	TV ^a / TD	TV	T ^a / T ^a / D ^b	TV
Population by sex	TV	TV	TV	TV	TV	TV	TV	TC		TD
Age										
Population by decennial age groups and sex	B	B	B	BT	B	BT	BT	BT	(B)T	(B)T
Population by quinquennial age groups and sex	-	B	B	Bb/Tb/	B	Bb/Tb/	BT	BT	(B)T	(B)T
Population by single years of age and sex	-	-	-	-	-	A	BT	BT	(A)	(B)
Marital status										
Population by marital status and sex	-	-	-	BT	BT	BT	BT	BT	(B)	(B)
Population by marital status, age and sex	-	-	-	BT	BT	BT	BT	BT	(A)	(B)
Population by ethnic group, marital status and sex	-	-	-	BT	BT	BT	BT	BT	-	-
Population by ethnic group, marital status, age and sex	-	-	-	Bb/Tb/	Bb/Tb/	Bb/Tb/	-	-	-	-
Ethnic group										
Population by ethnic group and sex	B ^c / B ^d / T ^e / A ^e / B ^d / -	BCT A ^e / B ^d / -	B ^c / B ^e / -	B ^e / BT -	BCT BT -	B	BC BT A	A	(B)T A	B B (A)
Population by ethnic group, age and sex	-	-	-	-	-	A	-	-	-	-
Population by ethnic group, single years of age and sex	-	-	-	-	-	-	-	-	-	-
Religion										
Population by religion and sex	BT	BCT	B	BCT	BCT	BC	BT	BT	(B)T	B
Population by religion, age and sex	-	A	B	-	BCT	-	BT	-	-	-
Population by religion, ethnic group and sex	-	BCT	BCT	BCT	BCT	BC	B	-	-	-
Literacy										
Population by literacy and sex	-	BT	BC	BCT	BCT	B	BT	BT	B	(B)
Population by literacy, age and sex	-	-	-	B ^e / C ^e / T ^e / B ^e / C ^e / T ^e / -	B ^e / C ^e / T ^e / -	-	BT	BT	B	(B)
Population by ethnic group, literacy and sex	-	B ^e / T ^e / -	B ^e / C ^e / -	B ^e / C ^e / T ^e / B ^e / C ^e / T ^e / -	B ^e / C ^e / T ^e / B ^e / C ^e / T ^e / -	B ^e / -	-	BT	-	-
Education										
Population by educational attainment and sex	-	-	-	-	-	-	-	-	B	B
Population by educational attainment, age and sex	-	-	-	-	-	-	-	-	A	(A)
Citizenship										
Population by citizenship and age	-	-	-	-	-	-	-	-	B	A
Population by citizenship and sex	-	-	-	-	-	-	-	-	A	A

Table 3. (Cont'd)

Tabulation	1871	1881	1891	1901	1911	1921	1946	1953	1963	1971
Type of activity										
Population by type of activity, age and sex	-	-	-	-	-	-	-	-	(A)	(B)
Population not economically active by functional categories and sex	-	-	-	-	-	-	-	-	(B)	(B)
Industry										
Employed population by industry and sex	-	-	-	-	-	-	-	B ^m /T ^l /	(A) ^l /(B) ^k /	(A) ^m /(B) ⁿ /
Employed population by industry, age and sex	-	-	-	-	-	-	-	A ^k /	(A) ^k /	A ^l /
Employed population by industry, status and sex	-	-	-	-	-	-	-	A ^l /	(A) ^k /	(A) ^l /B ^k /
Occupation										
Employed population by occupation and sex	BT	B	B	B ^o /T ^o /	B ^o /T ^o /	A ^o /	A	B ^l /T ^l /L ^l /	(B) ^k /(A) ^l /	(A) ^m /(B) ⁿ /
Employed population by occupation, age and sex	-	-	-	-	-	-	-	A ^k /	(A) ^l /	(A) ^l /
Employed population by occupation, status and sex	-	-	-	-	-	-	-	A ^l /	(A) ^k /	A ^l /B ^k /
Employed population by occupation, and industry	-	-	-	-	-	-	-	-	(A) ^k /	(A) ^l /
Employed population by occupation, education and sex	-	-	-	B ^o /T ^o /	B ^o /T ^o /	A ^o /	-	-	(A) ^k /	A ^l /
Employed population by occupation, ethnic group and sex	-	B	B	-	-	-	-	-	-	-
Employed population by occupation, income and sex	-	-	-	-	-	-	-	B ^m /D ^l /	-	-
Status										
Employed population by status and sex	-	-	-	-	-	-	-	-	(A)	(A)
Employed population by status, age and sex.	-	-	-	-	-	-	-	-	(A)	(A)
Birthplace and migration										
Ceylon born population by district of birth and sex	-	-	B ^g /	B ^g /	B ^g /	B ^g /	B	B	-	B
Foreign born population by country of birth and sex	B	-	B	B	B	B	B	B	-	-
Population by duration of stay, age and sex	-	-	-	-	-	-	-	-	-	B
Migrant population by duration of stay and district of previous residence	-	-	-	-	-	-	-	-	-	B
Fertility										
Ever-married females (15-49) by age and number of children born alive	-	-	-	-	-	-	B ^l /	-	-	(A)B
Ever-married females (15-49) by age and number of children living	-	-	-	-	-	-	-	-	-	(A)
Ever-married females (15-49) by age and length of time that has lapsed since birth of last live born child	-	-	-	-	-	-	-	-	-	B
Ever-married females (15-49) by age, educational attainment and number of children born alive	-	-	-	-	-	-	-	-	-	A
Fertility										
Live births occurring during last 12 months by age of mother and live birth order	-	-	-	-	-	-	-	-	-	B

- Notes:**
- A** — Whole country.
 - B** — District.
 - C** — Divisional Revenue Officer's Division.
 - D** — Grama Sevaka's Division.
 - T** — Principal Towns.
 - V** — Village.
 - ()** — A letter A or B placed within parenthesis indicates that the tabulation is available separately for urban and rural areas.
- a/** Not published but available in the Department of Census and Statistics.
 - b/** The population under 5 years is given by single years of age.
 - c/** In the case of foreigners the country of origin is shown.
 - d/** Decennial age groups.
 - e/** Also cross-classified by religion.
 - j/** For Towns with population of over 10,000 only.
 - k/** Classified by 1 digit groups.
 - l/** Classified by 2 digit groups.
 - m/** Classified by 3 digit groups.
 - n/** Classified by 1 digit groups showing principal occupation or industries at the most detailed level.
 - o/** Also distinguishing earners and dependents.
 - p/** 10 per cent sample tabulation.
 - q/** Also by ethnic group.
 - r/** Also by marital status.

statistics.^{19/} The general report, which was considerably bigger than its predecessors, also contained chapters on national features, the history of the country and its civil administration. It also gave a life table for the period 1893 — 1900 and annual vital statistics for the period 1871 — 1900. The total number of pages in all four volumes was 2,444 as against 762 contained in the three volumes of the 1891 census.

There were six volumes relating to the results of the 1911 census.^{20/} All details concerning the preparation and actual census taking as well as tabulations are discussed in a separate volume. The report volume (as the general report was called) contained a review of the results of the census. Additional features of this report volume included district histories, an account of the history of Colombo City and its development, chapters on "Changes in manners and customs" and "Nomenclature". The chapter on "Races of Ceylon" also gave information regarding several of the minor, little-known races in the country. A separate chapter also dealt with the first complete census reported to have been ever taken in the Maldivé Islands.

The 1921 census results were published in four volumes. The first volume consisted of two parts^{21/}. Part I contained most of the information, which according to the superintendent of census "is likely to be required for general reference", and Part II "dealing more particularly with certain aspects of the statistics with regard to age, sex and etc." The general report of the 1921 census placed greater emphasis than the previous ones upon the statistical aspects, especially the relation between the population and vital statistics through the use of the balancing equation and this formed the central feature of this report.

19/ P. Arunachalam, *The Census of Ceylon 1901, Vol. I: The Review of the Census Operations and Results; The Census of Ceylon 1901, Vol. II: Detailed Tables exhibiting the Population by Sex, Race, Religion, Age, Civil Condition, Education, Birth-place and Infirmary. The Census of Ceylon 1901, Vol. III: The Population by Occupation or Means of Subsistence. The Census of Ceylon 1901, Vol. IV: Town and Village Statistics.*

20/ E.B. Denham, *The Census of Ceylon 1911 — Review of the Results of the Census of 1911, The Census of Ceylon 1911 — Census Tables; The Census of Ceylon 1911 — Occupation Statistics; The Census of Ceylon 1911 — Estate Statistics, The Census of Ceylon 1911 — The Administrative Work of the Census.*

21/ L.J.B. Turner, *Census Publications of Ceylon 1921, Vol. I. Part I and Part II: Report on the Census of Ceylon 1921, Census Publications of Ceylon 1921, Vol. II: Town and Village Statistics. Census Publications of Ceylon 1921, Vol. III: Estate Statistics. Census Publications of Ceylon 1921, Vol. IV: General Tables.*

The publication of a separate volume containing the detailed occupational statistics as in the case of the 1901 and 1911 censuses was not repeated in 1921. The information on occupation for the country as a whole was included in Volume IV: General Tables.

As noted earlier, in the 1931 census a detailed enumeration was limited to the City of Colombo and hence the detailed tabulations relate only to the Colombo City.

The information obtained in the 1946 census^{22/} was published in four volumes. The first volume consists of two parts, the first part being the general report and the second part being the statistical digest. The statistical digest contains summary tables on all the items covered in volumes II to IV in addition to tables on occupation, infirmities and housing.

The results of the 1953 census were reported in four volumes^{23/}. The first volume was the general report describing the organization of the census and the salient results. The other volumes consisted of statistical tables. The second volume consisted of three parts while the third and fourth volumes consisted of two parts each. A supplementary report on housing was also published.

It is rather unfortunate that no general report was published in respect of the 1963 census. There were only two statistical volumes published based on 10 per cent sample tabulation of the census data, one on general characteristics of the population and the other on the gainfully employed population^{24/}. A supplementary report on housing was also published.

22/ A.G. Ranasinha: *Census of Ceylon 1946 Vol. I, Part I: General Report; Census of Ceylon 1946 Vol. I, Part II: Statistical Digest, K. Williams: Census of Ceylon 1946 Vol. II: Age, Conjugal Condition and Place of Birth; Census of Ceylon 1946 Vol. III: Fertility; Census of Ceylon 1946 Vol. IV: Race, Religion and Literacy.*

23/ H.E. Peries: *Census of Ceylon 1953 Vol. I. General Report, N.M. Idaikkadar: Census of Ceylon 1953 . Vol. II (Part I) (Growth of Population, Place of Birth, Movement and Nationality) Colombo 1958, Census of Ceylon 1953 Vol. II (Part II), Age, Colombo 1959, Census of Ceylon 1953, Vol. II (Part III) (Conjugal Condition and Orphanhood) Colombo, 1959. Census of Ceylon 1953, Vol. III (Part I) (Race and Literacy) Colombo 1960, Census of Ceylon 1953, Vol. III (Part II) Literacy and Religion) Colombo 1960, A.B.S.N. Pullenayegum : *Census of Ceylon 1953, Vol. IV (Part II) (Income) Colombo 1962.**

24/ A.R. Ratnavale: *Census of Population; Ceylon, 1963 Vol. I, Part I: General Characteristics* Tables based on a 10 per cent sample, Department of Census and Statistics, Colombo, 1967, *Census of Population, Ceylon, 1963 Vol. I: Part II, The Gainfully Employed Population*, Tables based on a 10 per cent sample, Department of Census and Statistics, Colombo, 1967.

In regard to the latest census held in 1971, there were three preliminary releases and a preliminary report based on tabulation of 10 per cent sample schedules, followed by two volumes based on full tabulation of the data.^{25/} The three preliminary releases give the population for each of the geographic areas mentioned, classified by (a) sex; (b) number aged under 18 years and number aged 18 years and over ^{26/}; (c) ethnic groups and (d) religion. In Preliminary Release No. 3, these classifications are shown for wards of towns and *Grama Sevaka* (village headmen) divisions; but in the case of villages, only the total population is shown. A summary statement showing the tabulations included in the various publications referred to earlier is given in table 3.

C. CIVIL REGISTRATION

1. History of registration system

A general system of registration of births, deaths and marriages first came into operation in 1867, when the Registrar-General's Department was created under the provisions of Ordinance No. 18 of 1867. This Department was charged with the function of supervising the registration of births, deaths and marriages in the island. However, "registration was virtually left to the will of the parent or guardian and it is not surprising that a large number of births and deaths were not registered and the annual lament of the Registrars-General in their Administration Reports to the effect that some legislation was needed to compel parents or guardians to register birth and deaths went unheeded till 1887 when it was decided to institute prosecutions against people who did not register the births of their children. This had a good effect and the registration of births and deaths showed a marked improvement. But provision had yet to be made to prevent the same birth from being registered by 2 or 3 Registrars at the same time".^{27/}

^{25/} L.B. Rajakaruna: *Census of Population 1971: Preliminary Release No. 1* (mimeo); *Census of Population 1971: Preliminary Release No. 2* (mimeo); *Census of Population 1971: Preliminary Release No. 3* (mimeo) L.N. Perera: *Census of Population 1971: Preliminary Report*. (mimeo); *Census of Population 1971: Vol. I, Parts 1-22, District Reports: Census of Population 1971: Vol. II: Part I, General Characteristics, of the Population*, All Island Tables. Department of Census and Statistics, Colombo. 1975.

^{26/} Age 18 was chosen for the classification as this is the age at which a person qualifies for voting rights.

^{27/} R. Raja IndraSinhalese *Population Growth, 1911-1946*, Monograph No. 7 (Colombo, Department of Census and Statistics, 1955), p. 5.

Ordinance No. 1 and Ordinance No. 2 of 1895 consolidated and amended the law regarding registration of births, deaths and marriages and removed many of the legal and administrative difficulties that were faced earlier. These Ordinances "which came into force on July 1, 1897 abolished concurrent jurisdiction of Registrars of Births and Deaths, and one officer was made responsible for the registration work of his division."^{28/}

A system of registration of deaths in towns, whereby a death had to be registered together with a correct statement of the cause of death and a certificate obtained for burial or cremation, was introduced at this time.

Although legal provision existed for registration of marriages, registration was not considered necessary by the people so long as the customary or religious ceremonies were gone through.^{29/} Over the years, the proportion of all marriages that are registered have increased as shown by the census data on marital status in which persons whose marriages are registered are distinguished from those whose marriages were not registered.

2. Organization of the registration system

The Registrar-General is vested with the general control and superintendence of the registration of births, deaths and still births and of all persons appointed for and engaged in carrying out the provisions of the respective acts covering registration of births, deaths and marriages.

The government agent of a district is the district registrar for that district and supervises the registration work within that district. Each district is divided into a number of birth and death registration divisions and to each division is appointed a registrar of births and deaths whose functions are:

^{28/} *Ibid.*, p. 5.

^{29/} P. Arunachalam, *Census of Ceylon 1901*, vol. I, p. 216. It was also observed in 1891 that "the Kandyans are, as a rule, indifferent to registration, though the law makes the issue of their unregistered marriages bastards. The number of marriages registered among them varies with the pressure applied to them by Government Agents, who under instructions from Government, made special efforts in 1894 and 1895 and secured the registration of marriages of large numbers of couples who had been living together as husband and wife according to Kandyan Customs". (*Ceylon, Administration Reports 1891, Part IV: Miscellaneous Vital Statistics, Report of Mr P. Arunachalam, Registrar-General of Marriages, Births and Deaths.*)

(a) To accept declarations from individuals and institutions and summon any persons if necessary for obtaining any information concerning a birth or death;

(b) To record particulars of births and deaths occurring in his division in the registers and forward a duplicate of every registration entry made by him to the District Registrar for transmission to the Registrar General; and

(c) To complete the statistical returns on births and deaths registered during a month and send them to the Registrar-General through the District Registrar on or before the 10th of the following month.

In certain "proclaimed" towns, only a medical practitioner, or a practitioner of indigenous medicine registered under the Indigenous Medicine Ordinance, or a person holding a certificate of competency issued by the Director of Health Services, can be appointed as a registrar of births and deaths. The officer-in-charge of a hospital is also the medical registrar of the area if the institution happens to be in a "proclaimed area". Almost all the large towns fall within this category. Where a separate medical registrar is appointed, officers-in-charge of the hospitals furnish declarations in respect of the events occurring in their hospitals to the medical registrar.

Births and deaths occurring in estates are reported by superintendents of estates. Their declarations are checked by the medical officer of the area, who forwards them to the district registrar for registration.

Registrars of marriages are not necessarily the same persons as registrars of births and deaths. Also unlike in the case of registrars of births and deaths, more than one registrar of marriages could function within one division. This provision exists in order to permit the parties entering into marriage a certain degree of choice of a registrar.

3. Registration procedure

The law makes it obligatory for certain individuals to notify the registrar of a division in regard to births and deaths.

The father or mother of every child born alive, or if either of them is unable to do so, the occupier or an inmate of the house in which the birth occurs, is required to notify the registrar of the division and supply him with the information required for the purpose of registering the birth within 42 days of the

occurrence of the birth. If a person is unable to attend the office of the registrar, he is permitted to send a declaration on the prescribed form giving the necessary particulars to the registrar.

If a new born child is found exposed, the finder or the person in whose charge the child is placed is required to furnish the registrar with the required information within seven days of the finding of the child.

When a death occurs in a house or building, the nearest relatives present at death or the occupants of the house in which the death took place, or the person causing the body of the deceased to be buried, cremated or otherwise disposed of, is required to notify the registrar within five days of such death. Further, in the case of the death of a person who has been attended to during his last illness by a medical practitioner, that practitioner is required to give a certificate stating the cause of death.

When a birth or death occurs in an estate scheduled under the Medical Wants Ordinance, the person or persons on whom the obligation is cast by the law is expected to convey the information to the superintendent of the estate instead of to the registrar within seven days in the case of a birth and 24 hours in the case of a death. The superintendent is required to verify the information and report the event within 48 hours of the receipt of the information to the nearest medical officer appointed under the Medical Wants Ordinance who then sends the report to the district registrar.

When a birth or a death occurs in a government medical institution, it is the duty of the officer-in-charge of the institution to make a declaration on the prescribed form to the registrar of the division. When a birth or death occurs in a private medical institution, it is the duty of the officer-in-charge of the institution to furnish a weekly return of the births and deaths which have occurred in the institution giving names and addresses to the registrar of the division.

It is also the duty of the *Grama Sevaka* (village headman), who is the government official responsible for routine Government administration in a small group of villages, to keep himself informed of any birth and death occurring within the area of his jurisdiction and submit a report of the birth or death on the prescribed form to the registrar within seven days of the occurrence of the event, unless he has been exempted from this obligation by an order of the Minister. In the principal towns in which special provisions have been brought into operation for the

registration of deaths, no dead body or still-born child can be buried, cremated or otherwise disposed of unless a certificate stating that the death has been registered is first obtained. It is also an offence to remove the body of a person who died in such a town without a permit obtained for the purpose.

There is no obligation to register still-births except in the proclaimed towns where, when a still-birth occurs, the father of the child, or any person in attendance upon the mother at that time or within six hours thereafter, should give the necessary information to the appropriate medical officer of health within 24 hours or send a written declaration. Every medical officer of health who receives such information should send this information to the registrar within seven days.

The marriage laws of Sri Lanka, other than those relating to Kandyan and Muslim marriages, are contained in the Marriage Registration Ordinance. The marriages of Kandyans are governed by the Kandyan Marriage and Divorce Act and those of the Muslims by the Muslim Marriage and Divorce Act. Notice of an intended marriage must be given in the prescribed form by one of the parties if both are resident in the same division, and by both parties if resident in different divisions to the registrar of the respective divisions. The residence qualification required is a minimum of 10 days next preceding the date of notice. However, provision exists for obtaining a special license for solemnization of a marriage immediately after entry of the notice. A duplicate of the entries relating to every marriage registered during a month is forwarded to the district registrar within five days of the end of the month for transmission to the Registrar General.^{30/}

4. Data recorded on live births, deaths and marriages

The items of information relating to the vital events of live birth, death and marriage that are recorded in the original registration entry as well as in the return made by the registrar for the compilation of vital statistics are indicated in table 4. The table also shows the items recommended by the Seminar on Civil Registration and Vital Statistics for Asia and the Far East^{31/} as basic, first priority

^{30/} For detailed discussion, see chapter XVII.

^{31/} United Nations, *Report of the Seminar on Civil Registration and Vital Statistics for Asia and the Far East*, Copenhagen 1968, Statistical Papers Series M. No.50 (Sales No.E.70.XVII.15).

and second priority items, and presents the data collected in Sri Lanka against the background of the international recommendations.

It may be observed that in respect of live births, all the basic items recommended as basic are included in the statistical return except for date of occurrence of the live birth. This information, however, appears in the original registration record and is probably omitted from the statistical return as tabulations are made according to month of registration and not by date of occurrence.

In the case of deaths, all the basic items are covered in the statistical return except for "certifier or attendant". In regard to foetal deaths (still-births), of the items recommended as basic, only the date of occurrence and the gestational age are not included in the statistical report, although these items are recorded in the original register.

In the case of marriages, the date of occurrence of the marriage which is recommended as a basic item is not included in the statistical report.

5. Tabulation of vital statistics

The information relating to the births, deaths and marriages contained in the returns of live births, deaths and marriages prepared by the registrars and forwarded monthly to the Registrar General's Office are tabulated in the Vital Statistics Branch of this Office. Until recently the tabulation was done manually. From 1970, a programme of gradual computerization, using the Department of Census and Statistics computer, has been undertaken. The tabulated information has been published in the Annual Report of the Registrar General on Vital Statistics commencing from 1867. Table 5 shows the various tabulations in respect of live births, deaths and marriages.

The tabulations are by date (12 months or year) of registration and not by date of occurrence, and by area of registration instead of by place of usual residence. Hence the published statistics refer to births or deaths registered during a year or other specified period. Also the birth or death figures for a specified geographic area relate to all the births or deaths registered in that area irrespective of the usual residence of the mother in the case of births or the deceased in the case of deaths. However, a special table showing births and deaths among residents of the proclaimed towns is also included in the annual reports. The number of such proclaimed towns has risen from 16 in 1900 to 82.

Table 4. Information currently recorded in respect of vital events

Topic	Priority ^{a/}	On original registration entry	On statistical return
Live births			
Characteristic of event (child)	First	-	-
Attendant at birth	Basic	X	-
Date of occurrence (of delivery)	Basic	X	X ^{b/}
Date of registration	Second	-	-
Gestational age	First	-	X
Hospitalization	Second	X	-
Legitimacy status	Basic	X	X
Place of occurrence (geographic)	Basic	X	X
Sex	First	-	X
Type of birth (single or multiple)	Second	-	-
Weight at birth			
Characteristics of mother and father			
Children born alive to mother during her lifetime	First	-	-
Children born alive to mother during her lifetime, and still living	Second	-	-
Children born dead to mother during her lifetime	Second	-	-
Citizenship (nationality)	Second	-	-
Date of birth/age (mother)	Basic	X	X
Date/duration of marriage (for legitimate births)	Second	-	-
Educational attainment/literacy	Second	-	-
Ethnic (or national) group	Second	X	X
Occupation (mother)	First	-	-
Occupation (father)	First	X	-
Place of usual residence	Basic	-	X
Religion	Second	-	-
Deaths			
Characteristics of the event			
Cause of death	Basic	X	X
Certifier or attendant	Basic	-	-
Date of occurrence (of death)	Basic	X	X ^{b/}
Date of registration	Basic	X	X ^{b/}
Place of occurrence (geographic)	Basic	X	X
Characteristic of decedant			
Citizenship (nationality)	Second	-	-
Date of birth/age	Basic	X	X
Duration of residence in usual (present) place	Second	-	-
Educational attainment/literacy	Second	-	-
Ethnic (or national) group	Second	X	X
Hospitalization	First	-	X
Marital status	First	-	-
Occupation	First	X	-
Place of birth (geographic)	Second	-	-
Place of usual residence	Basic	-	X
Sex	Basic	X	X
Religion	Second	-	-

Table 4.(Cont'd)

Topic	Priority	On original registration entry	On statistical return
Foetal deaths			
Characteristic of the event			
Cause of foetal death	First	-	-
Certifier or attendant	First	-	-
Date of occurrence (of foetal delivery)	Basic	X	-
Date of registration	Basic	X	X ^{b/}
Gestational age	Basic	X	-
Hospitalization	First	-	X
Place of occurrence	Basic	X	X
Sex	Basic	X	X
Type of birth (single or multiple)	First	-	X
Weight at delivery	Second	-	-
Characteristics of mother and father			
Children born alive to mother during her lifetime	First	-	-
Children born alive to mother during her lifetime and still living	Second	-	-
Children born dead to mother during her lifetime	Second	-	-
Citizenship	Second	-	-
Date of birth/age (mother)	Basic	X	X
Date/duration of marriage	Second	-	-
Educational attainment/literacy	Second	-	-
Ethnic (or national) group	Second	X	X
Occupation (mother)	First	X	-
Occupation (father)	First	X	-
Place of usual residence (mother)	Basic	-	X
Religion	Second	-	-
Marriages			
Characteristics of the event			
Date of occurrence (of marriage)	Basic	-	-
Date of registration	Basic	-	X ^{b/}
Place of occurrence (geographic)	Basic	-	X
Type of marriage	First	-	-
Characteristics of bride and groom			
Citizenship (nationality)	First	-	-
Date of birth/age	Basic	-	X
Duration of residence in usual (present) place	Second	-	-
Educational attainment/literacy	First	-	X ^{c/}
Ethnic (or national) group	First	-	X
Marital status (previous)	Basic	-	X
Marriages, previous number of	First	-	-
Occupation	First	-	-
Place of birth (geographic)	Second	-	-
Place of previous residence	Second	-	-
Place of usual residence	Basic	-	X
Religion	First	-	-

a/ Priority assigned by the Seminar on Civil Registration and Vital Statistics for Asia and the Far East.

b/ Month and year of registration only.

c/ Literacy determined by whether register was signed with a thumb mark or in letters.

Table 5. Tabulations in respect of live births, deaths and marriages showing the geographic areas for which they are available

Tabulation	Geographic area			
	Country	District	DRO Division	Towns ^{a/}
Live births				
Births	x ¹	x ^{1b/}	-	x ¹
Births x sex	x	x ^{c/}	-	x
Birth x age of mother	x ¹	x ¹	-	-
Births x ethnic group	x ¹	-	-	-
Births x ethnic group x sex	x	x ^{b/}	x	x ¹
Births among residents	-	-	-	x ¹
Births among residents x sex	-	-	-	x
Still births				
Still births x sex	-	-	-	x
Deaths				
Deaths	x ¹	x ^{1b/}	-	x ¹
Deaths x sex	x	x ^{c/}	-	x
Deaths x sex x age	x ¹	x	-	-
Deaths x ethnic group	x ¹	-	-	-
Deaths x ethnic group x sex	x	x ^{b/}	x	x
Deaths x sex x cause (intermediate list)	x	x	-	-
Deaths x sex x cause (abbreviated list)	-	-	-	x
Deaths x sex x age x cause (intermediate list)	x	-	-	-
Deaths x sex x age x cause (abbreviated list)	x ^{d/}	-	-	x ^{e/}
Deaths among residents	-	-	-	x ¹
Deaths among residents x sex	-	-	-	x
Deaths among residents x sex x cause (abbreviated list)	-	-	-	x
Infant deaths				
Infant deaths	x ¹	x ¹	-	x ¹
Infant deaths x sex x age	x	x ^{c/}	-	-
Infant deaths x ethnic group x sex	x ¹	x ¹	-	-
Infant deaths among residents	-	-	-	x ¹
Maternal deaths				
Maternal deaths	x ¹	x ¹	-	x ¹
Maternal deaths x age	-	-	-	x
Maternal deaths x cause (detailed list)	-	-	-	x
Maternal death among residents	-	-	-	x ¹
Marriages				
Marriages registered x type of marriage	x ¹	x ¹	-	-
Marriages registered x type of marriage x civil condition of parties	x	x	-	-
Marriages registered x type of marriage x ethnic group of parties ^{f/}	x	x	-	-
Marriages registered x type of marriage x whether aged under 21 or over	x	x	-	-
Marriages registered x type of marriage x proportion of illiterate parties	x	x	-	-
Lowest age at marriage x sex x type of marriage	x	x	-	-
Highest age at marriage x sex x type of marriage	x	x	-	-

Notes: x₁ indicates that the table shows the number of births, deaths etc.

x¹ indicates that in addition to the numbers the corresponding rates are also shown.

a/ Towns refers to the proclaimed towns where the special provisions relating to death registration and still birth registration apply.

b/ Also available for estates registered under the Medical Wants Ordinance by district.

c/ Indicates that the series is available monthly.

d/ The tabulation is also available for the aggregate of urban areas, the aggregate of rural areas except the estates and the aggregate of estate areas.

e/ For the principal towns of Colombo, Negombo, Kandy, Nuwara Eliya, Galle, Jaffna and Kurunegala only.

f/ Where parties to marriages belong to different races, half the number of marriages is credited to one ethnic group and half to the other ethnic group. The term race is used in the Registrar General's reports on vital statistics instead of ethnic group.

D. SAMPLE SURVEYS

As noted earlier, population censuses at almost regular intervals of 10 years have been taken in Sri Lanka since 1871. Registration of vital events also date back to over a 100 years. These two sources provide fairly adequate and reliable data on the demographic characteristics of the population. Hence there has been no need to carry out any sample surveys specifically for the purpose of collecting basic demographic data. However, a number of sample surveys carried out in the country from time to time have yielded valuable information on the demographic characteristics of the population. Those surveys may be grouped under three major headings: labour force surveys, consumer finance surveys, and socio-economic surveys.

1. Labour force surveys

In Sri Lanka attempts have so far not been made to carry out labour force surveys on a systematic and periodical basis. The few labour force surveys that have so far been carried out in the country have been organized on an *ad hoc* basis mainly to assess the prevailing situation in regard to employment, unemployment and under-employment in the country as a whole or in specific sectors.

a. Survey of Employment, Unemployment and Under-employment 1959/60

This was the first sample labour force survey carried out in Sri Lanka to collect detailed information on the employment and unemployment situation and characteristics in the country. The survey, which lasted for over a year from February 1959 to March 1960, was conducted by the Department of Labour with the technical assistance of the International Labor Organisation (ILO). Included in the sample were nearly 10,000 households spread over 20 urban and 36 rural strata.^{32/}

The survey used alternate concepts to measure labour-force participation. One measure was obtained by considering each person's main activity; that is, whether he devotes the major part of his time to economic or non-economic activities. Among those who were not classified as economically active by the criterion, there were, however, a considerable number of persons who, although mainly engaged in domestic duties, or studies or some other

^{32/} ILO, *Preliminary Report to the Government of Ceylon on Survey of Employment, Unemployment and Under-employment 1959/60* (Geneva, 1962).

non-economic pursuit, were also working in a productive enterprise part-time as a secondary activity, or were also looking for work. Such part-time workers and unemployed persons were also regarded as being in the labour force.

Two criteria were adopted to measure the extent of unemployment in the country. According to the first one, "persons aged 12 years and over whose main activity status was either:

(a) without work but available and willing to work, or

(b) without any substantive work or duties though able to work or take duties wholetime.

were considered to be unemployed". A second measure of unemployment was obtained by considering each person's activity during a reference period of seven days preceding the interview. According to this measure, "a person who was usually working (according to his main activity status) was nevertheless classified as unemployed if he had no work in the reference week but was available (i.e. was not sick, taking leave, etc.) and was wanting to work; on the other hand, those whose usual activity status was unemployed, who actually worked during the reference week for 15 hours or more were classified as employed." Also counted as being in the labour force during the seven-day period were persons such as seasonal and occasional workers who were working for 15 hours or more during the period (although they were not in the labour force according to their usual activity status).

In regard to under-employment, the survey collected information about the availability for additional days or hours of work from those employed persons who reported that they had worked less than five days or 40 hours during the one week reference period.

The results of the survey have been analysed and presented in 12 tables. These tables give a classification of the labour force by age, sex and by rural and urban areas; employment according to industry divisions, distribution of employed by status and also according to number of days worked and extra days available, etc.

b. Labour Force Survey 1968-1969

At the request of the Ministry of Planning and Economic Affairs, a labour force survey was undertaken by the Department of Statistics to collect comprehensive information on the size and composi-

tion of the country's labour force. The survey, which covered approximately 13,000 households spread over the entire island, was conducted in two rounds.

Information regarding a person's activity was collected under two broad groups, viz., main activity and secondary activity. In all, 11 categories (employer; employee; self-employed; unpaid family workers; unemployed; non-school going children under 15; full-time students; engaged in own household or domestic work; voluntarily not available for work; old, disabled, retired; and others) were used for denoting main activity status. The secondary activity status was divided into 10 categories such as working part-time as employer; working part-time as employee; part-time engaged in self-employment; working part-time as unpaid family worker; part-time student; working part-time in household work; available and willing to do full-time work; other secondary activity; and no secondary activity. The main as well as secondary activity of a person during two reference periods, one week and one year, were recorded in the survey.

The unemployed persons were divided into two categories:

(a) *Previously employed but currently unemployed*, i.e. a person without employment or work of any kind during the reference period and who is available and willing to work but was employed during a previous period;

(b) *Never previously employed*, i.e. a person without employment or work of any kind during the reference period, who was never employed previously and is available and willing to work.

The survey also collected information relating to the mobility preferences of the unemployed as well as particulars relating to the nature and causes of internal migration.

The data collected in this survey have been analysed^{33/} and presented in 62 tables which classify:

(a) The labour force by age, sex, educational status;

(b) The employed population by age, sex, occupation, industry, hours worked, employment status;

(c) Unemployed persons by age, sex, education,

^{33/} Though the data collected from this survey have been tabulated, the report has not yet been prepared.

duration of unemployment, mobility preference, type of work looking for etc;

(d) The migrated population by age, sex, sector, educational status and occupational groups.

c. Survey of rural employment problems, 1964

In 1964, at the request of the Department of Labour, a survey of the employment situation in some rural villages of Sri Lanka was conducted by the Department of Census and Statistics. The purpose of the survey was to obtain quick and first-hand information on the rural employment situation needed for an analysis of the magnitude and nature of rural unemployment with a view to formulating policy measures that would seem most likely to alleviate the pressure of a growing population in the rural sector.

The survey covered a total of 1,824 randomly selected households in 13 villages selected with the assistance of the district statistical officers and which were considered to exemplify different agricultural regions and differing economic or social patterns in the country.

The survey excluded the following from the category of gainfully employed:

(a) All children under the age of 13;

(b) Older children who were receiving full-time education;

(c) All persons who were incapacitated or too old for work;

(d) Women engaged in household duties;

(e) Those who were unemployed.

The unemployed were defined as those persons who during the survey were without work and had been as far as could be ascertained, without work for a considerable time and who were "available" for full-time employment. The under-employed were defined as those "who were far from being fully employed throughout the year or else only worked for part of the normal working day and who were anxious to obtain more work."

The following tabulations of the data collected in this survey have been published in the report:^{34/}

^{34/} ILO, *Report to the Government of Ceylon on Rural Employment Problems* (Geneva, 1965).

- (a) Distribution of households by size of household;
- (b) Age and sex composition of the sample population;
- (c) Sex ratio of the sample population by age groups;
- (d) Extent of under-employment and unemployment;
- (e) Labour-force participation and unemployment by age groups;
- (f) Persons in full-time education;
- (g) Educational standard of the unemployed analysed by age group;
- (h) Distribution of households by area of paddy land;
- (i) Distribution of estimated household income.

d. Sample Survey of Labour Force Participation Rates in Sri Lanka, 1973

A survey of the labour-force participation rate in Sri Lanka was undertaken by the Economic Research Department of the Central Bank of Ceylon in 1973. This survey was undertaken for the International Labor Organisation as part of the research studies of the World Employment Programme. The purpose of the survey was to find out the impact of factors such as age, sex, educational level, fertility, size of family and the sector of the economy as determinants of labour force participation.

The survey covered 2,500 households distributed throughout the island. For purposes of the survey, the country was divided into 28 strata — 22 rural, 4 urban and 2 estate. In addition to the data on the economically active population, some information was also collected on consumption, income patterns, vital statistics and production of agricultural commodities.

According to the survey, a person was considered as working if he was directly or indirectly occupied in some work, or in a job in an establishment — on at least one day during the reference week. A person was treated as unemployed if: (a) he was neither gainfully occupied nor “with a job but not at work” as defined during the reference week; (b) his age at last birthday was within the range 14-59 years; and (c) he was at the time of the survey looking for full-time work.

The results of the survey have been published.^{35/}

^{35/} *The Determinants of Labour Force Participation Rates in Sri Lanka 1973* (Colombo, Central Bank of Ceylon, 1974).

2. Consumer Finance Surveys

The Survey of Ceylon's Consumer Finances is organized and carried out by the Central Bank at intervals of 10 years. The primary purpose of this series of surveys was “to secure direct estimates relating the income, expenditure, housing and other social characteristics and indebtedness of households and spending units”. The first of these surveys was carried out in 1953 and the sample included less than 1,000 households. The second survey carried out in 1963 covered about 5,000 households and hence the data from this survey could be considered more reliable than those of the 1953 survey. The third survey was carried out in 1973 and covered 5,000 households^{36/}

Though these surveys were intended to collect information regarding income, expenditure, housing and other social characteristics, and indebtedness of households and spending units, valuable demographic information, particularly on employment and unemployment characteristics of the sample population were also obtained at these surveys.

The employed persons were classified into four distinct categories of employment status, viz. employer, employee, self-employed and unpaid family worker. A person was considered an employer when he had at least one employee working for him. An employee was defined as one who was employed for wages. A self-employed person was one who worked on his own land or business but did not have a single employee working under him. An unpaid family worker was one who worked for at least three hours a day in a business owned by a member of the household or in a household and did not receive any remuneration (board and lodging excepted). The unemployed were defined to include all those persons who had been looking for work and were willing to go out of their place of residence to engage themselves in such work but were unable to find employment.

The data on employment and unemployment have been analysed and presented in the following tables:

- (a) The employed classified by educational groups;
- (b) Employment by sectors and zones;
- (c) Employment by age;
- (d) Age-specific activity rates by sectors and zones;

^{36/} *Survey of Ceylon's Consumer Finances 1953, 1963 and 1973* (Colombo, Central Bank of Ceylon).

- (e) Unemployed by sectors and zones;
- (f) Unemployed by age group;
- (g) Unemployed by educational status.

3. Socio-Economic Survey, 1969/70

The Department of Census and Statistics undertook a socio-economic survey covering the entire country in 1969/70. Though the main objective of the survey was to collect comprehensive information on the living conditions of households with particular reference to household income and expenditure, the survey also collected additional data on the demographic characteristics of the population, employment and unemployment, educational and literacy levels and housing conditions.

The survey was conducted in four consecutive rounds, each of three months duration, commencing November 1969, and covered 9,694 of Sri Lanka's estimated 2,096,737 households. Excluded from the sample were one-member households, professional boarding houses with three or more boarders and all institutions such as hospitals, schools, convents etc. Two-stage sampling was used with census blocks as primary sampling units and households as secondary sampling units. For purposes of the survey, the country was stratified into urban, rural and estate sectors.

The preliminary results of the first two rounds covering the period November 1969 to April 1970 were published in October 1971 and included data on demographic characteristics of the population, fertility and morbidity, educational levels, employment and unemployment, income levels and expenditure patterns of households, housing conditions etc.^{37/} The information collected during all four rounds of the survey were published in another two volumes. The first volume contains several tables on general demographic characteristics of the population including three tables on fertility and 11 tables on mortality, educational levels, employment and unemployment, housing conditions etc.^{38/} The second volume contains over 200 tables analysing data

37/ Government of Ceylon, *Preliminary Report on the Socio-Economic Survey of Ceylon 1969-1970* (Colombo, Department of Census and Statistics, 1971), (mimeo).

38/ Government of Sri Lanka, *Socio-Economic Survey of Sri Lanka, 1969/70, Rounds 1-4, Statistical Tables: volume I, Population, Labour Force and Housing* (Colombo, Department of Census and Statistics, 1973) (mimeo).

on personal income and consumer expenditure and a summary of the more important findings of the survey.^{39/}

E. INTERNATIONAL MIGRATION

The earliest year for which statistics of arrivals and departures is available is 1921. Prior to this date only the statistics relating to the movement of estate labourers were available, but these data were subject to serious under-estimation. As was observed by Sarkar; "until 1920, statistics of estate labourers alone were available. Statistics for earlier years, which were published in the Blue Book, were compiled by district administrative authorities who were asked to count the number of estate coolies passing through certain roads in their districts. Obviously this method of compilation was most inaccurate, and the data were frankly admitted to be little better than guesses."^{40/}

Current statistics of migration relate to arrivals into and departures from the country. These statistics are compiled by the Department of Immigration and Emigration through control exercised at the main ports of entry and departure in the country. These statistics can be regarded as very reliable, since entry into and exit from the country are subject to rigorous control. However a certain amount of illicit immigration from South India across the Palk Strait is believed to occur. This too has been reduced considerably by regular patrols in the areas where such illicit entry has been known to occur.

The Annual Administration Report of the Controller of Immigration and Emigration contains information on arrivals and departures at the main ports of entry classified into citizens of Sri Lanka, Indians, Indian Estate Residents, Pakistanis, Commonwealth citizens and other aliens. Information is also contained on first issues and renewals of residence visas by nationality of the recipients.

The Registrar-General's Annual Report on Vital Statistics also includes statistics of net migration into the country.

39/ Government of Sri Lanka, *Socio-Economic Survey of Sri Lanka, 1969/70, Rounds 1-4, Statistical Tables: volume II, Household Income, Consumption and Expenditure* (Colombo, Department of Census and Statistics, 1973) (mimeo).

40/ N.K. Sarkar, *The Demography of Ceylon* (Colombo, Ceylon Government Press, 1957), p. 166.

ANNEX II

EVALUATION OF QUALITY OF DEMOGRAPHIC DATA

A. INTRODUCTION

Demographic data obtained from censuses as well as the civil registration system are subject to inaccuracies of varying kinds and degrees. Census data may suffer from under-enumeration, age mis-statements and other reporting errors. Statistics of births and deaths derived through the registration system also suffer from under-registration and mis-statement of age of mother in the case of a birth, and age of the deceased in the case of a death. The reasons for these errors are many among which may be mentioned illiteracy of the population, lack of appreciation of the need for census or registration statistics, general apathy and absence of co-operation, superstitions about counting of persons, fears about the purposes of the census and difficulties of transport and communication in the country. In this annex an attempt is made to evaluate the accuracy and reliability of the data obtained from the censuses and the registration system.

The accuracy of the census count has been the subject of discussion by some of the census superintendents themselves. In regard to the first island-wide census held in 1871, the superintendent of that census was of the opinion that since the enumeration was simultaneous throughout the island and great care was exercised in the selection of enumerators and the supervision of their work, there could be no doubt as to the substantial accuracy of the enumeration. "Although in some places the census was regarded with suspicion and disfavour, the Government may rest assured the number of houses from which a properly filled up schedule was not obtained is infinitely small. The same absolute confidence cannot be felt with regard to the returns of travellers, but judging from the pains taken in the cases which came under my own observation I am justified in reporting that the figures are fairly accurate."

Despite the confidence in the over-all count of the population, the census superintendent admitted: "It cannot however be said that accuracy has been attained with regard to all the points to which a perfected schedule professes to give information, particularly as to religion and conjugal condition.... The information under the head conjugal condition was so untrustworthy that no tables have been framed from it."^{1/}

^{1/} G.S. Williams, *Census of the Island of Ceylon 1871, General Report* (Colombo, Government Printer, 1872), p. 4.

The censuses of 1881 and 1891 were taken by the same superintendent who was of the view that the accuracy of the 1881 count was superior to that of the 1871 count. "The census of 1871 was the first numbering of the people in a period of 40 years. The operation was a novel one and was accompanied by all the difficulties which attend such operations in the East. The State is never credited with benevolent or even harmless intentions. In every new inquiry is found a design to impose a tax or to extract a service. Such suspicions were prevalent in 1871 in Ceylon, and to them were added sinister rumours, which tended to unsettle the people and to arouse a spirit of objection. Added to this want of co-operation on the part of those to be numbered was the general ignorance of methods. No officer of the highest or lowest rank had any previous practical experience of a census taking, and things could not work as smoothly as if the machinery had been already tested and found to be well fitted.

"In 1881, on the other hand, a large number of Government Agents and Assistant Government Agents upon whom devolves in every census taking the making, in harmony with one general design, of the arrangements for the actual enumeration, had had the experience of 1871, and a considerable proportion of the persons employed as enumerators had been employed before. There was, therefore, knowledge in place of ignorance of 1871. There was also an absence of those fears and suspicions which were rife ten years previously. In 1881 the people viewed the undertaking with indifference. They looked upon it as one of the eccentricities of a Western form of Government and were rather anxious than otherwise that their schedules should be accurately filled up fearing that, if they were inaccurate, they might in some litigation in the future, speak against them."

"The conditions, therefore, under which the census of 1871 was taken were calculated to diminish the chances of its accuracy while in 1881 none of these conditions were present, and it may therefore be fairly argued that the high rate of increase in 1881 is in some degree accounted for by the reasonable assumption that the figures of 1871 do not correctly represent the population at that time."^{2/}

^{2/} Lionel Lee, *Census of Ceylon 1891, vol. I: A General Report* (Colombo, 1892), p. 11.

The 1901 census superintendent also pointed out that the enumeration at the census reached a high degree of accuracy and that the margin of error was smaller than in the previous censuses. He attributed the success of the enumeration mainly to the improved methods employed; notably the preliminary census as well as to the careful training of the enumerators.

It will however, be noted that the assessments of the various census superintendents regarding the accuracy of the enumerations were subjective and qualitative and were not based on any quantitative checks. The evaluation of the quality of available demographic data presented in this annex will therefore be based on three different methods of testing their accuracy, viz., (a) direct check on the accuracy of demographic data; (b) accuracy of the sex and age data of the censuses; and (c) analysis of the inter-relationship between population census data and civil registration data.

B. DIRECT CHECKS ON THE ACCURACY OF DEMOGRAPHIC DATA

1. The 1953 Census Post-Enumeration survey

After the taking of the 1953 census of population, an attempt was made to measure the extent of error in the census count on the basis of an independent check on the enumeration. This post-enumeration check was carried out about three months after the date of the final census through the 1953 post enumeration survey^{3/} which was a sample verification of the census count. The field work was carried out by specially trained officers of the Department of Census and Statistics who had already had considerable experience in survey work.

The survey was solely concerned with coverage errors consisting of omissions and duplications. No attempt was made to make it a quality check. The sample covered consisted of 1 per cent of all the "census blocks" excepting those in estates, into which the island had been divided for the enumeration of the census. Excluding the estates, there were 34,007 census blocks in the urban and rural areas. Each municipality and the urban and rural areas in each district were treated as separate strata and the sample census blocks were selected with probability proportional to the size of population.

The information relating to name, sex and age of the members of all the households in each sample census block, as recorded by the enumerators of

^{3/} I. Kannangara, *Post Enumeration Survey 1953*, Monograph No. 1, (Colombo, Department of Census and Statistics, 1953).

the census night were transcribed on to fresh forms and provided as a guide to the investigator when he visited the households for the purpose of verifying the census count.

The investigator carrying out the field survey was required to visit each household as listed in the household list for the block and make the necessary inquiries to ascertain whether there had been any omissions or double enumeration on the census night and record such cases in the sample verification form.

The survey covered a total of 16,232 households of which 3,978 were in urban areas and 12,254 in rural areas (except estate areas). The population covered was 84,415 or a little over 1 per cent. Although the survey was scheduled to be completed by end of July 1953 the field work was actually completed only in September 1953.

The survey showed that in the sample census blocks covered, there were 1,067 cases of clear under-enumeration or omissions and 282 cases of over-enumeration at the census. The net under-enumeration was therefore 784 in the sampled population which gives an estimated under-enumeration of 54,559 persons or 0.7 per cent for the country as a whole.^{4/} Table 1 shows the error per 1,000 population and provides the upper and lower limits of error.

As will be noted in a latter section, as many as 142,726 children under 5 years of age were under-enumerated at the 1953 census, the extent of under-enumeration being 10.6 per cent. If it is assumed that the 1953 census count was quite accurate at all ages including and above 5 years and was deficient only in respect of children under 5 years, then the true population on the 1953 census date should be 8,240,621, giving an under-enumeration of the total count by 1.7 per cent. This obviously exceeds the upper limit of 0.9 per cent given by the post-enumeration survey.^{5/}

It is quite likely that the survey has under-esti-

^{4/} It has however been observed in the Report of the Survey that; "No assertion is made that the verification was complete and free from bias. The verification was a pioneer undertaking; nevertheless the figures provided may be regarded as reasonably safe estimates of the errors present in the 1953 census count". *Ibid.*, p. 4.

^{5/} If a correction is made to the birth and death statistics for under-registration as shown by the 1953 vital statistics check survey, the number of children omitted and hence the under-enumeration of the total count could be even higher.

Table 1. Estimate of error per 1,000 persons enumerated at 1953 census

Area	Estimate	Lower limit	Upper limit
Sri Lanka	1,007	1,004	1,009
Urban	1,009	1,008	1,010
Rural	1,006	1,004	1,008

Source: I. Kannangara, *Post Enumeration Survey 1953*, Monograph No. 1 (Colombo, Department of Census and Statistics, 1953).

mated the under-count at the census. The survey did not attempt to obtain an estimate of the number of entire households missed in the enumeration as only the households listed in the census block at the time of the census were visited for the survey. Hence households missed at the census would almost certainly have been missed in the post-enumeration survey too.

2. Survey on the completeness of birth and death registration, 1953

The first attempt at a direct verification of the completeness of birth and death registration was undertaken along with the sample verification of the 1953 census count. The sample chosen for this survey was the same as that for the census count verification. The check was carried out by obtaining from each household in the sample the particulars regarding births and deaths which had occurred between January 1 and March 31, 1953 and then attempting to match these records with the corresponding entries at the Registrar's Office. Special instructions were issued to ensure (a) that infants born and dying within the period surveyed were noted both as births and deaths and (b) that infants born during the period but dying between April 1 and the beginning of the survey were noted only as births.

The forms for recording particulars of births and deaths provided for obtaining the following items in respect of a birth or death.

Birth	Death
1. Date of birth	1. Date of death
2. Place of birth	2. Place of death
3. Name of infant	3. Name of deceased
4. Sex	4. Sex
5. Name of father	5. Age
6. Maiden name of mother	6. Name of father
7. Registered?	7. Cause
8. When?	8. Was death registered
9. Registration number	9. When
	10. Registration number

These items were considered sufficient to identify the event and were utilized for matching of the event with the records at the Registrar's Office. The rule for matching insisted on the exact tallying of at least one name and two other items. If the specified items tallied the event was assumed to have been registered. If they could not be tallied, the information was re-checked first at the households for verification of the particulars originally recorded and next at the Registrar's Office by more experienced investigators. This ensured that unmatched entries related solely to non-registrations.

Table 2 gives estimates of percentage completeness of birth and death registration separately for urban and rural areas. The estimate is derived as the weighted mean of the percentage completeness in each stratum, the weight corresponding to the population of each stratum.

Table 2. Estimated percentage completeness of registration

Region	Birth	Death
Sri Lanka	88.1	88.6
Urban area	96.8	94.7
Rural area	86.6	86.9

The results of the survey show that registration of both births and deaths was more complete in urban than in rural areas. For the country as a whole the under-registration of births was of the order of 11.9 per cent and that of deaths 11.4 per cent.

The report on the survey does not claim complete accuracy. It states "Despite the representativeness of the sample, the estimates given here are subject to various sources of error. For instance some of the events that were not registered at the time of the survey might well be registered sometime after, even though it meant that registration was effected a couple of months after the legally specified period. It is also possible that there is some correlation between vital registration and inclusion in the sample check. Events that had not been registered might well have missed the sample check as well. But this would not introduce a systematic bias if it were known that vital events not enumerated in the sample check were just as likely to be registered as events

like in the 1953 survey, and stratification consisted of dividing the census blocks of each district into three sectors: urban, rural and estate. A 1 per cent random sample of blocks was selected in each stratum.

The field investigation was carried out in June 1967 and covered births and deaths during the period 1 January to 31 March 1967.

Table 3 shows the number of births and deaths recorded and matched and the percentage completeness of registration in each sector. The percentages of completeness of registration were derived by using the number of registered events during the reference period as weights. Registration of both births and deaths was 100 per cent complete in urban and estate areas and under registration was found to occur in rural areas only. For the country as a whole birth registration was 98.7 per cent complete and death registration 92.3 per cent complete.

Table 3. Births and deaths registered, numbers recorded in the sample census block during the period 1 January - 31 March 1967 and percentage completeness of registration

Sector	Birth				Death			
	Number registered,	Number recorded	Number matched	Percentage registered	Number registered	Number recorded	Number matched	Percentage registered
Urban	14,888	104	104	100.0	19,564	19	19	100.0
Rural	66,999	504	495	98.2	64,675	105	94	89.5
Estate	7,505	74	74	100.0	10,180	18	18	100.0
All sectors	89,392	682	673	98.7	94,419	142	131	92.3

Source: W.M.L.S. Aponso, *A Study of the Extent of Under-Registration of Births and Deaths in Ceylon* (Colombo, Department of Census and Statistics, 1971).

which were. There is no evidence that any bias was introduced by the selection of the first quarter for the sample check."^{6/}

3. Survey to determine the extent of completeness of birth and death registration, 1967

Another survey to assess the completeness of birth and death registration was undertaken in 1967.^{7/} As in the 1953 survey, the primary sampling units were census blocks formed at the 1963 census. The 1967 survey, however, covered estate areas too, un-

Unlike in the 1953 survey, the information regarding unmatched events were not verified by re-visits to the households concerned so that an unmatched event would imply that:

- (a) The event was not registered; or
- (b) The particulars recorded by the field investigators were incorrect; or
- (c) The search was not correctly made at the local Registrar's office.

The report on the survey emphasizes that the study was an exercise in matching the events. This does not however detract from the usefulness of the survey results. In fact, if more events had been matched as a result of verifying the information after re-visits, the percentage completeness would have been higher. In view of this the percen-

^{6/} I. Kannangara, *op.cit.* p. 17.

^{7/} W.M.L.S. Aponso, *A Study of the Extent of Under-Registration of Births and Deaths in Ceylon* (Colombo, Department of Census and Statistics, 1971).

tage completeness figures yielded by the survey may be regarded as lower limits of the completeness of registration.

C. ACCURACY OF AGE-SEX DATA

The accuracy of the age-sex data obtained in a census is affected by errors of various kinds.^{8/} As observed by the 1921 census superintendent:

"It has long been a matter of common knowledge that the returns of the age of the population of Ceylon are liable to very considerable errors. A very slight experience of the mis-statements of age made by witnesses in courts, or by servants and others, is sufficient to throw considerable doubt on the ability of many among the population of Ceylon to report their ages with any great degree of accuracy. These doubts are confirmed by a more extensive knowledge of the country; the ordinary villager has generally only a vague idea of his age, probably knowing the age of the cultivation on his land more accurately than his own, and sometimes estimating the latter from the former, while ignorance of age is prevalent even among the better educated classes in the towns, cases being common in which the date of birth is unknown, the number of completed years incorrectly returned and so on."^{9/}

It is very rarely the sex is likely to be incorrectly reported in a census enumeration, but errors in the sex ratio of the population could arise as a result of the enumeration being more nearly complete for one sex than the other. This could also apply to sex ratios in the various ages or age groups of a population.

Errors in the age distribution of a population could arise from either mis-statements of age or on account of differences in the extent of under-enumeration of persons in the different age groups. Age mis-statements can arise as a result of ignorance of age and the date of birth, negligence in reckoning the precise age, misunderstanding of the question relating to age or deliberate mis-statement. Thus it is essential to have some idea of the extent and types of errors so that any misleading conclusion

^{8/} For detailed discussion on this aspect, see Henry S. Shryock, Jacob S. Siegel and Associates, *The Methods and Materials of Demography*, vol. I. (Washington D.C., U.S. Department of Commerce, Bureau of the Census, 1971), pp. 203-204.

^{9/} L.J.B. Turner, *Report on the Census of Ceylon 1921*, vol. I, part II (Colombo, Government Printer 1923) pp. 15-16.

from the data may be avoided. An analysis of the errors may also be useful in evaluating the reliability of the data and for effecting any possible adjustments.

1. Accuracy of the age data by single years of age

The distribution of population by single years of age as obtained in the various censuses from 1946 to 1971 is shown in table 6 of annex III. An examination of the data shows unusually large numbers reported at certain ages and marked deficiencies at others. This is clearly brought out in figure 1.

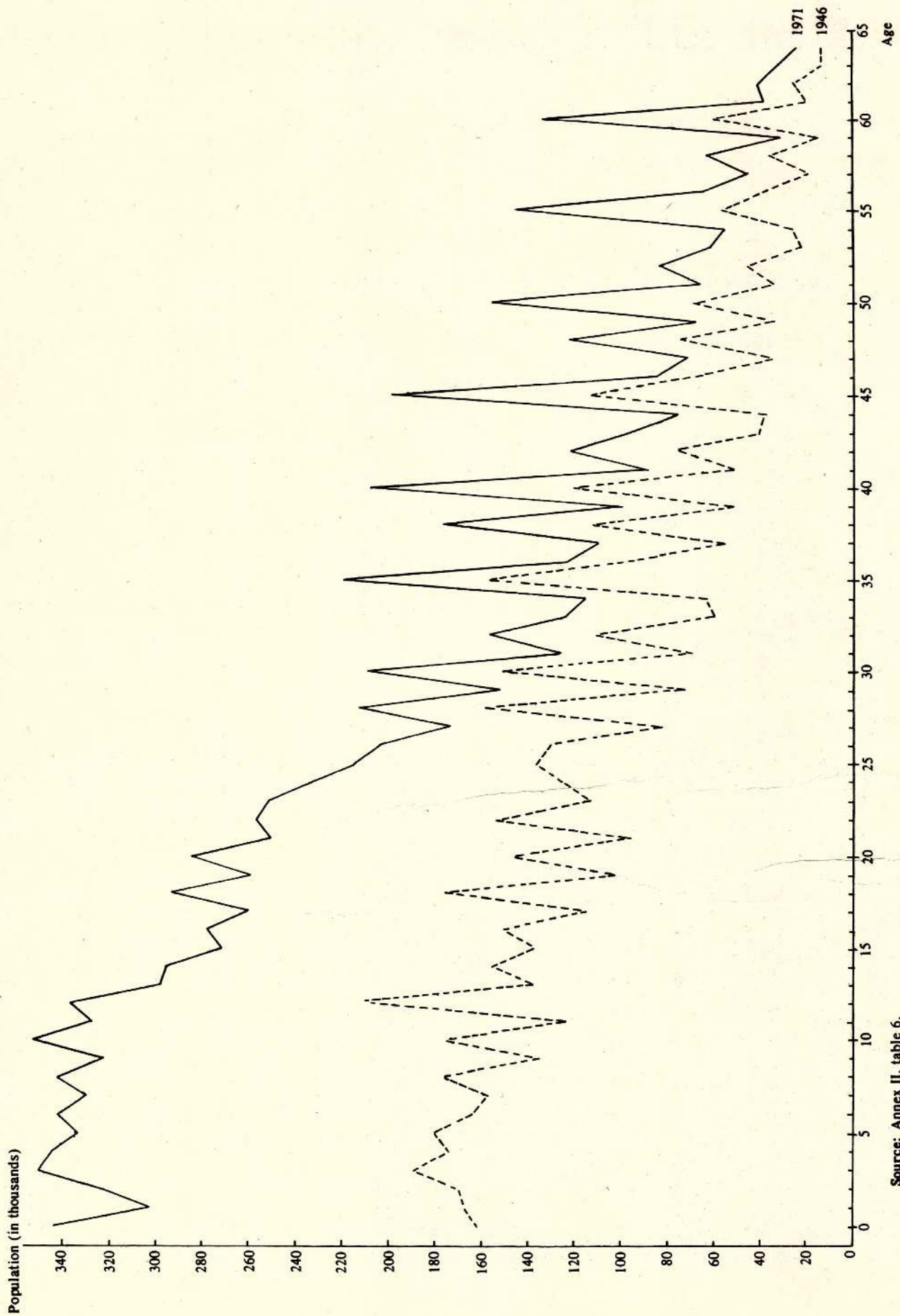
An index of the extent of the preference for the two digits 0 and 5 could be obtained by expressing the sum of the numbers at ages ending with 5 and 0 between ages 25 and 60 (both inclusive) as a percentage of one-fifth the sum of the numbers at all ages between 23 and 62 (both inclusive). An index value of 100 represents no concentration while a value of 500 would mean that all ages were recorded as ending in 0 or 5. Intermediate values would represent varying degrees of concentration. This index, called the Whipple's Index, computed from the data of the 1946, 1953, 1963 and 1971 censuses is shown in table 4.

It will be seen that for both sexes combined the index for 1946 is 150.6 which is lower than the indices for 1953 as well as 1963.

This shows that at the 1946 census the degree of concentration at ages ending in 0 and 5 was lower than at both the 1953 and 1963 censuses. The 1971 census has the lowest degree of concentration.

It will also be noted that the males show a slightly lesser degree of concentration than females. Also Whipple's Index computed separately for the urban and rural sectors in 1971 shows that the degree of concentration is lower in urban areas.

A somewhat better index of digit preference is the Myer's Index which reflects the preferences or dislikes for each of the 10 digits from 0 to 9. Since with advancing terminal digits of age the successive sums of numbers recorded at ages ending in each of these digits will tend to decrease, Myer's Index is computed from a "blended" sum which gives due weightage to each digit. The blended totals for each of the 10 digits should be very nearly 10 per cent of the grand total if there were no errors in the reporting of ages arising from preferences and repulsions. For each digit, the extent of the deviation from 10 per cent would indicate a measure of the extent of attraction or repulsion for that digit. The sum of the deviations irrespective of the sign is Myer's



Source: Annex II, table 6.

Figure 1. Population for Sri Lanka by single year of age, 1946 and 1971

Table 4. Whipple's Index of preference for digits 0 and 5, Sri Lanka, censuses of 1946-1971

Census year		Both Sexes	Male	Female
1946		150.6	143.9	158.9
1953		188.9	176.7	203.8
1963		178.6	167.5	191.3
1971	Total	146.5	137.3	156.8
	Urban	133.8	122.3	148.8
	Rural	150.7	142.7	159.1

Table 5. Myer's Index of digital preference for digits 0 to 9, Sri Lanka, censuses of 1946-1971

Terminal digit	1946		1953		1963		1971	
	Male	Female	Male	Female	Male	Female	Male	Female
0	+4.42	+5.17	+6.56	+9.24	+5.85	+8.85	+3.67	+5.20
1	-2.05	-2.90	-4.15	-4.71	-3.19	-3.68	-1.27	-1.99
2	+2.82	+1.61	+1.72	+0.83	-0.34	-0.10	+0.20	-0.35
3	-1.96	-2.92	-2.03	-2.96	-0.48	-0.86	-0.95	-1.48
4	-1.04	-1.82	-2.78	-3.15	-2.31	-2.57	-1.45	-1.91
5	+5.33	+4.31	+6.69	+8.00	+5.70	+7.44	+3.45	+4.58
6	+2.08	+0.45	-1.21	-1.47	-1.56	-1.63	-0.94	-1.07
7	-1.94	-3.57	-3.23	-3.67	-2.34	-2.44	-1.83	-2.15
8	+4.33	+3.16	+2.41	+2.42	+1.09	-1.73	+0.98	+1.33
9	-2.54	-3.49	-3.98	-4.53	-3.11	-3.28	-1.87	-2.19
Myer's Index	28.51	29.40	34.76	40.98	25.97	32.58	16.61	22.25

Source: Computed from data of the Population Censuses held in 1946, 1953, 1963 and 1971.

Index which provides a measure of the extent of digital preference in the data as a whole.

Table 5 shows the index of preference for each digit at the censuses of 1946 through 1971 for each sex separately. The digit 0 shows the highest degree of preference followed by digit 5 at both the 1963 and 1971 censuses. In the 1946 and 1953 censuses, however, while the females shows a maximum preference for digit 0, males show a higher preference for 5. Other digits which showed preferences were 8 and 2.^{10/} But in the case of these digits, the ex-

tent of preference had diminished considerably and, in a few instances (e.g. females in 1963 and 1971), have become digits which have been avoided. The extent of preference for the digits 0 and 5 too have diminished.

The over-all index too has declined although, as in case of Whipple's Index, the 1946 index for both males and females are lower than the corresponding 1953 indexes. The 1963 index for females is also greater than the 1946 index for females.

The smaller degree of digital preference at the 1946 census may have been due to the special instructions given to enumerators regarding the reporting of age. In the words of the superintendent of census "They were warned that in many cases persons would report their ages in round numbers, like 30 or 45 or 'about 30' or 'about 45,' when that was not the exact age, and that therefore when an age ending in 0 or 5 years was reported, they should ascertain whether it was the exact age. Every effort was to be made to find out the correct age of each person, by comparing ages of members of a family whose rela-

^{10/} A similar index was computed by Selvaratnam for the data of the 1953 census of population. In order to find out the pattern of digit preference, the number of persons returned at each of the ages ending in 0, 1, 2, 3, 4, 5, 6, 7, 8 and 9, between the ages 13 and 62 (both inclusive) were totalled separately for both males and females and the total expressed as percentage of total males and females between the age 13 and 62 (both inclusive). It was found that in 1953 there was a tendency both among males and females to state their ages in digits ending 0, 5, 8 or 2 with the digits 0 and 5 most commonly preferred. See S. Selvaratnam, *Population Projections for Ceylon, 1956-1981*, (Colombo, National Planning Council, 1959), pp. 11-12.

tive ages might be known or by reference to some important public event, or even to the age of some tree which might be described as the person's *tambi* or 'brother' " ^{11/} Although similar directions were contained in the instructions to enumerators in the subsequent censuses, greater emphasis on this may have been given to the enumerators at the 1946 census in the training classes.

Table 6 shows Myer's Indexes for males and females separately at the censuses of 1946 to 1971. The index computed separately for the urban and rural areas as at the 1971 census, also given in the table, shows that the extent of digital preference is lower for both sexes in the urban areas. This could also be explained by the higher literacy rate in urban areas, among the population aged 10 years and above.

Table 6. Myer's Index of over-all digital preferences, Sri Lanka, censuses 1946-1971

Census year		Male	Female
1946		28.51	29.40
1953		34.76	40.98
1963		25.97	32.58
1971	Total	16.61	22.25
	Urban	12.86	18.87
	Rural	17.81	22.25

It may on the whole be concluded that digital preference has diminished considerably in the most recent censuses due primarily to the improvement in literacy that has occurred after 1946. There is now a greater awareness among the population, especially among the younger generation of their exact ages. The higher literacy rate of males would account for the lower degree of digital preference among males.

2. Accuracy of age distribution in quinquennial age groups

It has been noted in the earlier section that single year age data is subject to errors due to digit preference. However, the errors in the data grouped in age intervals, say quinquennial age groups, will be minimal since heaping at certain digits will be offset by the deficits at adjacent ages. An age-accuracy index has been devised by the United Nations Secretariat to test the accuracy of age distri-

^{11/} A.G. Ranasinha, *Census of Ceylon 1946, vol. I, part I: General Report* (Colombo, Department of Census and Statistics, 1950), p. 209.

butions grouped in age intervals.^{12/} The method consists of (a) determining a sex-ratio score which is the average irrespective of sign of successive differences in the sex ratios between one age group and the next, (b) calculation of an age ratio score for each sex which is obtained by computing age ratios for each sex and averaging their deviations from 100 irrespective of sign, (c) computing the index which is obtained as three times the sex-ratio score added to the two age-ratio scores.

The sex-ratio scores, age-ratio scores for each sex and the age-accuracy index computed for the quinquennial age distribution of selected censuses from 1891 are given in table 7. Despite its limitations, the index shows a continuous decline from a high of 174 in 1891 to 25.6 in 1971.^{13/} Since a high score indicates greater inaccuracy in the age distribution than does a low score, it may be concluded that there has been a considerable improvement in the accuracy of the data by age groups and sex.

Table 7. Age accuracy index by the United Nations secretariat method, Sri Lanka, censuses of 1891, 1921, 1946, 1953, 1963 and 1971

Census	Sex ratio score	Age ratio score		Age accuracy index (Joint score)
		Male	Female	
1891	32.0	29.4	49.0	174.4
1921	22.0	14.1	17.4	97.5
1946	9.6	12.2	11.3	52.3
1953	4.4	8.8	11.0	33.0
1963	4.2	7.3	8.4	28.3
1971	4.1	5.4	7.9	25.6

D. ACCURACY TESTS BASED ON INTERRELATION BETWEEN CENSUS AND REGISTRATION DATA

1. Under-enumeration of children under five years at the censuses

Under-enumeration of infants and children under five years of age has been observed in the censuses of many countries and Sri Lanka is no exception. The extent of such under-enumeration may be deter-

^{12/} United Nations, "Accuracy tests for census age distributions tabulated in five-year and ten-year groups," *Population Bulletin* No. 2, October 1952, New York 1953.

^{13/} An important limitation of this index is that it does not allow for irregularities in certain age groups resulting from real disturbances caused by temporary birth deficits or migratory movements.

Table 8. Completeness of enumeration of children aged 0, 1, 2, 3 and 4 at the Sri Lanka censuses of 1946, 1953, 1963 and 1971.

Census year	Age	Male			Female		
		Number enumerated at census	Number estimated from birth and death statistics	Percentage of completeness of enumeration	Number enumerated at census	Number estimated from birth and death statistics	Percentage of completeness of enumeration
1946	0	81,343	109,259	74.4	79,334	106,987	74.2
	1	85,174	99,713	85.4	82,281	98,148	83.8
	2	86,428	103,512	83.5	83,785	99,434	84.3
	3	95,535	91,419	104.5	93,605	88,482	105.8
	4	88,952	87,498	101.7	85,002	83,858	101.4
Total	0-4	437,432	491,401	89.0	424,007	476,909	88.9
1953	0	131,090	149,214	87.9	130,710	146,556	89.2
	1	98,051	144,019	68.1	95,486	141,416	67.5
	2	126,174	138,039	91.4	121,726	134,239	90.7
	3	131,356	129,131	101.7	130,472	124,891	104.5
	4	122,349	124,059	98.6	121,415	119,984	101.2
Total	0-4	609,020	684,462	89.0	599,809	667,086	89.9
1963	0	173,020	178,654	96.9	169,770	173,434	97.9
	1	142,551	175,409	81.3	137,215	170,523	80.5
	2	166,328	171,044	97.2	162,631	166,488	97.7
	3	168,576	167,484	100.7	166,370	162,721	102.2
	4	160,800	159,758	100.7	155,742	154,710	100.7
Total	0-4	811,275	852,349	95.2	791,728	827,876	95.6
1971	0	174,825	185,813	94.2	169,291	179,451	94.3
	1	154,710	177,485	87.3	148,354	172,409	86.1
	2	164,137	178,381	92.0	158,900	173,847	91.4
	3	177,102	180,313	98.2	173,351	175,252	98.9
	4	174,689	173,710	100.7	169,319	169,550	99.9
Total	0-4	845,463	895,702	94.5	819,215	870,509	94.1

mined by comparing the population enumerated at each of the ages 0, 1, 2, 3 and 4 at the census with the number of surviving children estimated from the births of the five-year period preceding the census and the deaths attributable to this cohort of births.^{14/} A comparison of such estimated figures and the enumerated figures for Sri Lanka as a whole is made in table 8 for the censuses of 1946, 1953, 1963 and 1971.

It will be seen from table 8 that enumeration of infants under 1 year, which was about 75 per cent complete in 1946 improved to about 89 per cent in 1953 and to about 98 per cent in 1963. In 1971, the percentage completeness of enumeration of infants appears to have dropped to about 94. At the 1953, 1963 and 1971 censuses, enumeration was least complete at age 1, but the extent of completeness has improved with each census.

^{14/} It is assumed in this analysis that birth and death registrations are complete and that migration of children aged under five years is negligible.

The under-enumeration of children in the age group 0-4 as a whole, which was about 11 per cent in both 1946 and 1953, declined to 5 per cent in 1963 and rose slightly to 6 per cent in 1971. It is probable that the extent of under-enumeration in 1971 would be actually less if account was taken of migration out of the country. During the five years preceding the date of the 1971 census, the extent of out-migration was 87,000 compared with 45,000 during the five years preceding the 1963 census. It is almost certain that some at least of the migrants may have been children under 5 years and this could have affected the results.

It will also be noted that in the earlier censuses, the enumerated figures exceed the estimated figures at ages 3 and 4. This may be due to the fact that while the census count at these ages was accurate, the registration of births was defective. It is also possible that there would have been age misstatement in that persons aged 2 years may have been reported as 3 years old. However, it is shown

elsewhere that some degree of under-registration of births exists and the figures presented in table 8 shows that the census figures are deficient when viewed in relation to the registered vital statistics. The remarkably close results for males and females lends confidence to the validity of the estimates.

the number enumerated at the census with the number of survivors aged 5-9 estimated from the registered births during the five-year period ending 9 October 1966 and the deaths occurring in this cohort, the relative accuracy of the two figures compared may be inferred. This comparison is shown in table 9.

Table 9. Comparison of 5-9 age group estimated from registered births and deaths with the population of the same age enumerated at the censuses of 1963 and 1971

	8 July 1963		9 October 1971	
	Male	Female	Male	Female
1. Registered births during the five-year period preceding date of the census	822,669	794,676	934,057	901,469
2. Deaths attributable to this cohort up to census date	98,509	93,022	82,311	74,517
3. Estimated number of survivors as on census date	724,160	701,654	851,746	826,952
4. Number enumerated at census	730,716	716,559	846,831	824,085
5. Discrepancy (4) - (3)	6,556	14,905	-4,915	-2,867
6. Discrepancy as percentage of estimated number	0.91	2.12	-0.58	-0.35

It is also possible that some children under 5 years may have been included in the 5-9 age group due to over-statement of age. An examination of table 8 shows that the estimated and reported numbers at ages 3 and 4 are quite close to each other indicating that the numbers at these ages have been correctly enumerated. Hence it is unlikely that children aged 3 or 4 have been reported as 5 or higher. It is also unlikely that children aged 2 could be reported as 5 or higher. Moreover it is shown in the next section that the number of children aged 5-9 enumerated in the census is consistent with the number as estimated from the vital statistics. Hence the deficiency in the census figures relative to the vital statistics has to be attributed mainly to under-enumeration of children particularly those aged 0, 1 and 3 years.

2. Comparison of enumerated population aged 5-9 with the survivors of the corresponding cohort of births

The population aged 5-9 at the census would be the survivors of the births that occurred between exactly five and ten years before the census date. For example, the population aged 5-9 years on 9 October 1971 would be the survivors of the births that occurred during the five-year period, 10 October 1961 - 9 October 1966. Thus, by comparing

It is evident from table 9 that at the 1963 census the enumerated numbers slightly exceeded the estimated numbers indicating possibly a slight under-registration of births relative to the census figures. In the case of the 1971 census the enumerated figures were slightly lower but the difference was quite small. This shows that 5-9 age group had been much more reliably enumerated than the 0-4 age group at the censuses of 1963 and 1971 and shows no deficiency in relation to the registered births and deaths.

3. Under-registration of deaths

An estimate of the number of deaths during the intercensal period may be obtained by comparing the population aged x years and above at one census with the population aged $x+n$ years and above at the second census, where n is the interval in years between the two censuses, with due allowance being made for migration. The registered deaths attributable to the cohort aged x and over at the first census could be compared with the estimated number of deaths to evaluate the completeness of death registration.

For purposes of application of this method, the population aged 12 years and over as enumerated at the census of 8 July 1963 has been compared with the estimated population aged 20 years and over

as on 8 July 1971. ^{15/} Adjustments were also made to take account of over-statement of the numbers reported at age 12 in 1963 and 20 in 1971. The averages of the numbers reported as 11, 12, and 13 years of age was taken as the correct number aged 12 and one-half of the reported excess was regarded as over-statement of age. A similar adjustment was made for age 20 in 1971.

During the period 9 July 1963 - 8 July 1971 there was a net out-migration of 109,500 persons. In the absence of statistics of migration by age and sex, it was assumed that the migrants have the same sex-age distribution as the total population and on this basis 60 per cent of the migrants during this period was estimated as persons 12 and over in 1963.

The calculations are summarized below:

Enumerated population aged 12 and over on 8 July 1963	6,944,085
Estimated population aged 20 and over on 8 July 1971	6,344,554
Decrease of the cohort due to deaths and migration	599,531
Decrease attributed to migration (60 per cent of total migration)	65,700
Estimated number of deaths	533,831
Registered deaths	480,349
Estimate of deaths not registered	53,482
Percentage of deaths registered	90.0

In order to eliminate the effect of the migration factor a similar calculation has been done in respect of the Sinhalese who are an indigenous ethnic group among whom migration may be considered negligible. Unfortunately the age distribution of deaths among the Sinhalese are not available although the total deaths of Sinhalese is available. Hence in this calculation it is assumed that the proportion of deaths attributable to the cohort of the Sinhalese population aged 12 and over in 1963 is the same as in the case of the entire population.

^{15/} It will be noted that the census was taken on 9 October 1971. The total population as on 8 July 1971 was estimated from the census totals using the vital statistics and migration data for the period 8 July to 9 October 1971. The population aged 20 years and over on 8 July 1971 was estimated by assuming that their proportion to the total population on 8 July was the same as on 9 October 1971.

The calculations are indicated below:

Enumerated Sinhalese population aged 12 and over on 8 July 1963	4,918,201
Estimated Sinhalese population aged 20 and over on 8 July 1971	4,577,509
Estimated deaths (decrease of cohort due to deaths)	340,692
Registered deaths	306,192
Estimate of deaths not registered	34,500
Percentage of deaths registered	89.9

This calculation shows 90 per cent completeness of death registration among the Sinhalese during the period 1963-1971. This estimate agrees closely with the first estimate obtained above for the total population. However, both estimates are dependent on the accuracy of the population aged 12 and over at the 1963 census and the population aged 20 and over at the 1971 census. Even a small error in one of these could affect considerably the estimate of the percentage of deaths registered.

However, the above estimate can be taken as a probable order of magnitude of the error in death registration and lends confidence to the figure of 94.5 per cent completeness of death registration yielded by the 1967 Vital Statistics Survey.

4. Consistency of census totals and vital statistics

Between two censuses the change in the total population occurs as a result of births, deaths and movements into or out of the country. Accordingly, the consistency between the totals at two successive censuses, the birth and death registration statistics, and the migration data relating to the intercensal period can be evaluated using the following relation:

$$P_1 = P_0 - B - D + M$$

where P_1 - Population at the second census
 P_0 - Population at the first census
 B - Births during the intercensal period
 D - Deaths during the intercensal period
 M - Net balance of migration, i.e. excess of immigrants into the country over emigrants.

If all the data are perfectly accurate, then the equation must balance exactly. As perfect accuracy in all the components of the equation is rarely attained in practice, some unaccounted residual is bound to remain. A large residual may indicate an

Table 10. Balancing equation components for total population, 1921

Census year	Population at later census	Birth	Death	Migration balance	Increase accounted for	Intercensal increase.	Residual
Sinhalese population							
1901 - 1911	2,715,420	1,044,013	699,622	-	344,391	384,613	+40,222
1911 - 1921	3,016,154	1,137,801	822,130	-	315,671	300,734	-14,937
1921 - 1946	4,620,507	3,584,013	2,108,486	-	1,475,527	1,604,353	+128,826
1946 - 1953	5,616,705	1,442,418	472,513	-	969,905	996,198	+26,293
1953 - 1963	7,512,915	2,488,651	594,077	-	1,894,574	1,896,210	+1,636
1963 - 1971	9,131,241	2,158,731	503,657	-	1,655,074	1,618,326	-36,748
Total population							
1921 - 1931	5,306,871	1,938,418	1,277,814	+135,834	796,438	808,266	+11,828
1931 - 1946	6,657,339	3,233,313	1,939,313	+8,812	1,302,812	1,350,468	+47,656
1946 - 1953	8,097,895	2,053,420	700,814	+64,796	1,417,402	1,440,556	+23,154
1953 - 1963	10,582,064	3,517,929	912,976	-124,103	2,480,850	2,484,169	+3,319
1963 - 1971	12,689,897	3,066,461	777,835	-34,753	2,253,873	2,107,833	-146,040

error in one or more components. Even a small residual does not mean that all the components are fairly accurate because compensating errors might be present in the various components. For instance incompleteness of census enumerations may be compensated for by under-registration of births or deaths or of both.

The balancing equation components for various intercensal periods in respect of the total population as well as the Sinhalese population of Sri Lanka are presented in table 10. The Sinhalese are an indigenous ethnic group comprising of 70 per cent of the total population of Sri Lanka. The number of emigrants among them is very small, if any at all, and hence the migration component can be ignored for this group. The balancing equations for the Sinhalese are given for all intercensal periods commencing in 1901. However, as the 1931 census was only a head count and the Sinhalese population at this census is not available the equation is given for the period 1921-1946. Since reliable migration data are not available prior to 1921 the balancing equations technique cannot be applied to the earlier intercensal periods for the total population. In fact prior to 1921, migration has been estimated as the difference between the intercensal increase and the balance of births and deaths. Hence in regard to the total population, balancing equation are given for 1921-1931 and subsequent intercensal periods only.

In all the intercensal periods shown, except the 1921-1946 period, the residuals for the Sinhalese population have been quite small. Hence it may be inferred that a fair degree of consistency exists between the census totals and the registered birth and death statistics. As pointed out earlier, this does not mean that all the figures are accurate because compensating errors may exist. In fact direct checks on vital registration described earlier have shown the existence of some under-registration of births and deaths. However from the balancing equations it is possible to infer to what extent the census totals are deficient or accurate in relation to the vital statistics.

The positive residual of 40,222 in 1901-1911 indicates that the vital statistics do not account for an increase of 40,222 persons as shown by the censuses. This may be due to relatively greater under-enumeration at the 1901 census than the 1911 census and/or under-registration of births and deaths during the period. (The possibility of the 1901 census being correct and the 1911 census being over-enumerated is not likely)

The negative residual in 1911-1921 followed by the large positive residual of 128,826 is almost certainly due to relatively greater under-enumeration at the 1921 census. It is also possible that there has been some deficiency in the recorded birth and death statistics in relation to the increase in population as shown by the censuses.

The positive residual of 26,293 in the period 1946-1953 shows that the vital statistics were less accurate than the intercensal increase as reflected by the census. In the 1953-1963 period, the residual is so small as to be negligible and becomes negative in 1963-1971. This means that in the last intercensal period, the vital statistics were more accurate than the intercensal increase shown by the census. This is attributable to the improvement in completeness of birth and death registration as shown by the vital statistics survey of 1967. For the total population, the migration component is seen to be quite small compared with the natural increase. The pattern of the residuals for the total population follows that of the Sinhalese population except for the 1921-1946 period in which the residual for the total population is $11,828 + 47,656 = 59,484$ compared with 128,826 for the Sinhalese. This could be due to some emigrants not being recorded in the statistics or to differential under-enumeration or under-registration of births and deaths as between the Sinhalese and non-Sinhalese. However, the difference is quite small and the similarity of the pattern in the residuals for the total population and the Sinhalese population indicates that the migration figures are reasonably accurate or, at least, not subject to serious error.

5. Evaluation of census totals on the basis of births and deaths corrected for under-registration

The 1953 Vital Statistics Completeness Survey showed 11.9 per cent under-registration of births and 11.4 per cent under-registration of deaths. The 1967 Survey showed under-registration of births and deaths to be 1.3 and 5.5 per cent respectively. On the assumption of a gradual decline in the extent of

under-registration from 1953, it may be reasonable to assume that the average under-registration of births and deaths during the various intercensal periods to be as follows:

Intercensal period	Average percentage under-registration	
	Birth	Death
1946 - 1953	12	12
1953 - 1963	8	10
1963 - 1971	1.5	5.5

The registered births and deaths during the intercensal periods can be corrected on the above basis and then used in conjunction with the census totals to examine the probable accuracy of the census totals.

For purposes of the present evaluation, it has been assumed that the total population as recorded at the 1971 census is correct. The population as at the census dates of 1963, 1953 and 1946 has therefore been estimated by subtracting from the 1971 totals the increase accounted for by the registered vital statistics adjusted for under-registration and the migration data. On the basis of these calculations given in table 11, it will be observed that there has been an over-enumeration at the censuses of 1946, 1953 and 1963, the extent of over-enumeration being higher at each previous census. In other words, the 1963 census shows an over-enumeration of 1.4 per cent, the 1953 census an over-enumeration of 4.3 per cent and the 1946 census an over-enumeration of 7.6 per cent. Such a trend of over-enumeration can-

Table 11. Estimated intercensal increase on the basis of corrected births and deaths, Sri Lanka, 1946-1971

(thousands)

	Intercensal period		
	1946-1953	1953-1963	1963-1971
(1) Population at first census	6,657	8,098	10,582
(2) Population at second census	8,098	10,582	12,690
(3) Registered births during intercensal period	2,053	3,518	3,066
(4) Registered deaths during intercensal period	701	913	777
(5) Correction factor for births	1.12	1.08	1.015
(6) Correction factor for deaths	1.12	1.10	1.055
(7) Corrected births	2,299	3,799	3,112
(8) Corrected deaths	785	1,004	821
(9) Net migration during intercensal period	+65	-124	-35
(10) Estimated intercensal increase (7)-(8)+(9)	1,579	2,671	2,256

Table 12. Estimated under- or over-enumeration on the assumption that (a) 1946 enumeration is complete and (b) 1971 enumeration is complete

Census	Enumerated population (thousands)	Estimated population if 1946 enumeration is taken as accurate (thousands)	Percentage under-enumeration	Estimated population if 1971 enumeration is taken as correct (thousand)	Percentage over-enumeration
1946	6,657	6,657	-	6,184	+7.6
1953	8,098	8,236	-1.7	7,763	+4.3
1963	10,582	10,907	-3.0	10,434	+1.4
1971	12,690	13,163	-3.6	12,690	-

not be justified and hence the assumption of a 100 per cent accuracy in the 1971 census total cannot be accepted as correct.

If, however, it is assumed that the total population as enumerated at the 1946 census is correct, then it would be possible to estimate the population at the successive censuses on the basis of the vital statistics adjusted for under-registration and the migration data. The resulting estimates given in table 12 indicate that the censuses subsequent to 1946 were all under-enumerated, the extent of under-enumeration increasing with each successive census, viz., 1.7 per cent in 1953, 3.0 per cent in 1963 and 3.6 per cent in 1971. These results too cannot be accepted since the assumption that the enumeration at the 1946 census was correct is really not valid.

6. Estimates of under-enumeration at the earlier censuses

Sarkar developed a method of testing the census data for under-enumeration by using sex ratios and growth rates by age groups and using an iterating process of correction.^{16/} Using this method he has estimated under-enumeration by sex for each of the censuses from 1871 to 1946 inclusive. Sarkar's estimates of under-enumeration are presented in the

^{16/} N.K. Sarkar, *The Demography of Ceylon* (Colombo, Ceylon Government Press, 1957), pp. 38-63.

following table:

Census year	Percentage under-enumeration		
	Both sexes	Male	Female
1871	15.28	12.08	18.67
1881	9.59	6.57	12.80
1891	9.49	7.55	11.56
1901	11.54	9.10	14.15
1911	12.46	10.60	14.46
1921	15.25	13.36	17.27
1946	6.53	4.75	8.46

It may be observed that according to Sarkar's estimates, under-enumeration of females was considerably higher than under-enumeration of males at all the censuses from 1871 to 1946. The extent of under-enumeration in 1921 seems to have been of about the same order as in 1871 with the censuses in the intervening period subject to smaller extents of under-enumeration. The percentage under-enumeration for the population as a whole fell to just under 10 per cent in both 1881 and 1891 but increased in the subsequent censuses until the 1921 census. The 1946 census, however, taken after a period of 25 years since the previous full census in 1921 shows a much smaller degree of under-enumeration of only 6.53 per cent. As noted earlier, the 1931 census was only a head count and hence no estimate of under-enumeration using this method could be made.

ANNEX III

STATISTICAL TABLES

Table 1. Estimated population, number of registered marriages, births and deaths and crude birth rates, crude death rates and infant mortality rates, Sri Lanka, 1867-1975

Year	Population	Marriage	Birth			Death			Birth rate	Death rate	Infant mortality rate	Maternal mortality rate
			Male	Female	Total	Male	Female	Total				
1867	2,328,622	4,486	12,461	10,872	23,333	14,792	12,510	27,302	10.0	11.7	-	-
1868	2,354,878	6,782	24,751	22,345	47,096	30,867	28,574	59,441	20.0	25.2	-	-
1869	2,363,328	9,647	27,954	24,871	52,825	25,490	22,533	48,023	22.4	20.3	-	-
1870	2,382,042	14,807	32,899	30,628	63,527	22,475	19,763	42,238	26.7	17.8	-	-
1871	2,417,402	32,014	35,340	33,516	68,856	24,382	22,421	46,803	28.5	19.4	-	-
1872	2,451,276	17,688	36,287	33,286	69,573	27,444	25,893	53,337	28.4	21.8	-	-
1873	2,461,894	22,108	36,446	33,256	69,702	26,266	22,783	49,049	28.3	19.9	-	-
1874	2,516,453	23,248	38,961	35,684	74,645	27,380	24,843	52,223	29.7	20.7	-	-
1875	2,530,720	13,239	37,062	34,040	71,102	29,585	26,029	55,614	28.1	22.0	-	-
1876	2,573,305	12,780	40,546	37,014	77,560	32,632	29,948	62,580	30.1	24.3	-	-
1877	2,669,556	21,460	37,497	34,032	71,529	46,560	38,221	84,781	26.8	31.7	-	-
1878	2,741,078	12,406	33,313	30,023	63,336	41,862	33,804	75,666	23.1	27.6	-	-
1879	2,772,363	12,307	36,354	33,175	69,529	31,214	26,516	57,730	25.1	20.8	-	-
1880	2,758,785	13,650	37,972	34,346	72,318	26,408	24,167	50,575	26.2	18.3	128	-
1881	2,755,558	12,087	39,193	35,601	74,794	38,624	36,388	75,012	27.1	27.2	170	-
1882	2,773,389	13,214	38,782	35,260	74,042	28,919	25,753	54,672	26.7	19.7	138	-
1883	2,781,711	15,894	43,317	38,923	82,240	28,151	25,529	53,680	29.6	19.3	136	-
1884	2,793,689	13,770	45,552	41,855	87,407	32,097	30,301	62,398	31.3	22.3	157	-
1885	2,815,166	10,723	41,521	37,713	79,234	42,693	39,215	81,908	28.1	29.1	189	-
1886	2,830,359	20,214	39,956	36,880	76,836	35,368	31,673	67,041	27.1	23.7	153	-
1887	2,855,216	17,171	48,716	44,507	93,223	35,615	32,881	68,496	32.7	24.0	152	-
1888	2,901,262	14,638	47,910	44,379	92,289	40,624	36,100	76,724	31.8	26.4	167	-
1889	2,938,977	12,791	42,489	38,976	81,465	44,495	39,350	83,845	27.7	28.5	174	-
1890	2,980,245	15,437	49,744	45,362	95,106	36,162	32,438	68,600	31.9	23.0	146	-
1891	3,021,579	15,272	50,141	46,252	96,393	44,658	41,985	86,643	31.9	28.7	170	-
1892	3,088,405	17,049	48,718	44,515	93,233	44,337	40,600	84,937	30.2	27.5	162	-
1893	3,121,093	17,657	50,731	47,069	97,800	47,756	44,666	92,422	31.3	29.6	177	-
1894	3,144,561	23,191	54,151	50,150	104,301	45,088	42,696	87,784	33.2	27.9	165	-
1895	3,193,821	31,023	53,577	48,903	101,480	45,421	42,880	88,301	31.8	27.6	169	-
1896	3,240,501	20,089	53,753	50,101	103,854	42,110	38,788	81,898	32.0	25.3	158	-
1897	3,315,768	22,242	64,413	60,606	125,019	40,306	38,232	78,538	37.7	23.7	140	-
1898	3,395,519	24,681	67,645	63,975	131,620	46,149	44,107	90,256	38.8	26.6	169	-
1899	3,429,745	33,063	67,923	64,267	132,190	52,905	52,078	104,983	38.5	30.6	197	-
1900	3,520,574	28,687	70,002	66,049	136,051	51,086	49,787	100,873	38.6	28.7	178	-
1901	3,582,697	24,197	68,888	65,364	134,252	50,977	47,836	98,813	37.5	27.6	170	-
1902	3,629,986	28,388	72,928	68,965	141,893	50,901	48,779	99,680	38.5	27.5	173	-
1903	3,703,615	24,074	76,046	71,981	148,027	48,915	47,169	96,084	40.0	25.9	164	-
1904	3,767,826	22,581	74,627	70,626	145,253	47,397	46,543	93,940	38.5	24.9	174	-
1905	3,901,471	21,775	77,041	73,744	150,785	54,936	153,224	108,160	38.7	27.7	176	-
1906	3,883,168	18,568	72,639	69,208	141,847	69,808	66,463	136,271	36.5	35.1	198	-
1907	3,885,967	19,586	66,812	63,591	130,403	61,826	57,551	119,377	33.6	30.7	186	-
1908	3,923,369	21,615	82,289	78,424	160,713	59,968	58,014	117,982	41.0	30.1	183	-
1909	3,969,629	20,752	75,912	72,979	148,891	62,661	60,308	122,969	37.5	31.0	202	-
1910	4,035,178	22,723	80,536	77,018	157,554	56,052	54,143	110,195	39.0	27.3	176	-

Table 1. (Continued)

Year	Population	Marriage	Birth			Death			Birth rate	Death rate	Infant mortality rate	Maternal mortality rate
			Male	Female	Total	Male	Female	Total				
1911	4,120,813	22,104	79,682	76,716	156,398	70,880	72,500	143,380	38.0	34.8	218	-
1912	4,151,251	22,480	70,806	67,497	138,303	68,528	65,855	134,383	33.3	32.4	215	-
1913	4,220,436	25,401	83,112	79,715	162,827	60,781	59,227	120,008	38.6	28.4	189	-
1914	4,251,032	24,160	82,653	79,524	162,177	68,819	68,012	136,831	38.1	32.2	213	-
1915	4,355,015	30,011	82,591	78,359	160,960	55,793	54,025	109,818	37.0	25.2	171	-
1916	4,482,809	25,768	89,648	85,282	174,930	61,150	59,012	120,162	39.0	26.8	184	-
1917	4,589,635	26,080	93,784	90,191	183,975	57,812	55,577	113,389	40.1	24.7	174	-
1918	4,677,257	22,974	93,399	89,985	183,384	73,921	75,486	149,407	39.2	31.9	188	-
1919	4,480,140	19,682	82,463	78,940	161,403	84,144	84,179	168,323	36.0	37.6	223	-
1920	4,485,940	22,720	83,556	80,163	163,719	68,277	64,678	132,955	36.5	29.6	182	-
1921	4,521,762	23,986	93,519	90,398	183,917	71,081	69,668	140,749	40.7	31.2	192	21.0
1922	4,603,034	25,135	91,821	88,035	179,856	64,009	62,811	126,820	39.1	27.5	188	20.3
1923	4,684,306	24,166	92,405	89,032	181,437	71,577	70,314	141,891	38.7	30.3	212	21.6
1924	4,765,578	27,972	91,199	87,668	178,867	62,439	60,519	122,958	37.5	25.8	186	19.2
1925	4,846,850	32,194	98,706	94,555	193,261	60,002	57,541	117,543	39.9	24.3	172	18.5
1926	4,928,122	29,752	105,209	101,679	206,888	62,899	61,985	124,884	42.0	25.3	174	19.0
1927	5,009,394	31,528	104,950	100,519	205,469	56,781	56,222	113,003	41.0	22.6	160	17.0
1928	5,090,666	31,141	108,840	104,468	213,308	66,556	65,778	132,334	41.9	26.0	177	19.2
1929	5,171,938	29,944	100,851	97,154	198,005	67,938	67,336	135,274	38.3	26.1	187	20.4
1930	5,253,210	26,580	104,338	100,768	205,106	66,907	66,801	133,708	39.0	25.4	175	21.4
1931	5,326,000	25,701	101,399	97,771	199,170	58,858	58,594	117,452	37.4	22.1	158	20.8
1932	5,389,000	26,561	101,529	97,841	199,370	55,941	54,708	110,649	37.0	20.5	162	19.2
1933	5,419,000	27,180	107,054	101,978	209,032	57,894	56,796	114,690	38.6	21.2	157	18.6
1934	5,560,000	29,809	105,298	101,214	206,512	63,255	63,814	127,069	37.2	22.9	173	20.1
1935	5,608,000	24,982	98,209	94,546	192,755	101,039	103,784	204,823	34.4	36.5	263	26.5
1936	5,642,000	28,328	97,879	94,181	192,060	63,025	60,014	123,039	34.1	21.8	166	21.6
1937	5,725,000	34,758	110,228	105,844	216,072	63,335	60,875	124,210	37.7	21.7	158	19.9
1938	5,826,000	35,466	105,903	102,486	208,389	62,080	60,219	122,299	35.9	21.0	161	20.1
1939	5,916,000	32,589	107,908	104,203	212,111	65,243	63,368	128,611	36.0	21.8	166	18.2
1940	5,972,000	33,466	108,313	104,667	212,980	62,733	60,005	122,738	35.8	20.6	149	16.1
1941	6,178,000	36,484	112,055	107,809	219,864	58,173	54,830	113,003	35.6	18.3	129	15.3
1942	6,179,000	48,522	112,346	108,718	221,064	58,745	53,299	112,044	35.8	18.1	120	14.4
1943	6,296,000	50,191	126,343	122,477	248,820	68,654	62,407	131,061	39.5	20.8	132	13.3
1944	6,442,000	46,938	117,950	114,877	232,827	69,805	64,180	133,985	36.1	20.8	135	13.7
1945	6,650,000	44,325	121,378	117,116	238,494	72,965	69,966	142,931	35.9	21.5	140	16.5
1946	6,854,000	42,997	130,782	126,104	256,886	68,957	66,980	135,937	37.4	19.8	141	15.5
1947	7,037,000	42,374	137,802	133,389	271,191	50,440	48,104	98,544	38.6	14.0	101	10.6
1948	7,244,000	44,718	146,322	141,373	287,695	47,848	45,863	93,711	39.7	13.0	92	8.3
1949	7,455,000	45,663	148,341	142,850	291,191	47,303	44,586	91,889	39.1	12.4	87	6.5
1950	7,678,000	51,053	155,310	149,325	304,635	48,938	46,204	95,142	39.7	12.6	82	5.6
1951	7,876,000	53,613	159,424	154,238	313,662	50,788	49,284	100,072	39.8	12.9	82	5.8
1952	8,074,000	52,927	159,104	154,428	313,532	48,549	46,749	95,298	38.8	12.0	78	5.8
1953	8,290,000	51,603	163,888	157,329	321,217	45,474	43,529	89,003	38.7	10.9	71	4.9
1954	8,520,000	50,703	154,334	149,560	303,894	44,443	42,351	86,794	35.7	10.4	72	4.6
1955	8,723,000	52,652	165,667	159,871	325,538	48,505	45,863	94,368	37.3	11.0	71	4.1
1956	8,929,000	55,963	165,485	159,582	325,067	45,002	42,559	87,561	36.4	9.8	67	3.8
1957	9,165,000	54,961	169,681	164,454	334,135	47,796	44,963	92,759	36.5	10.1	68	3.7
1958	9,388,000	57,356	170,868	164,822	335,690	47,095	43,720	90,815	35.8	9.7	64	3.9
1959	9,625,000	61,300	181,418	174,918	356,336	45,972	41,999	87,971	37.0	9.1	58	3.4
1960	9,896,000	61,768	183,799	177,903	361,702	44,654	40,264	84,918	36.6	8.6	57	3.0

Table 1. (Continued)

Year	Population	Marriage	Birth			Death			Birth rate	Death rate	Infant mortality rate	Maternal mortality rate
			Male	Female	Total	Male	Female	Total				
1961	10,168,000	61,089	184,984	178,693	363,677	43,022	38,631	81,653	35.8	8.0	52	2.6
1962	10,443,000	61,493	188,938	181,824	370,762	47,060	41,868	88,928	35.5	8.5	53	3.0
1963	10,646,000	62,103	186,484	179,358	365,844	48,645	43,028	91,673	34.1	8.5	56	2.4
1964	10,903,000	67,897	183,721	177,856	361,577	50,990	44,628	95,618	33.2	8.8	57	2.8
1965	11,164,000	65,444	187,757	181,680	369,437	49,732	41,996	91,728	33.1	8.2	53	2.4
1966	11,439,000	68,441	187,796	181,357	369,153	51,179	43,240	94,419	32.3	8.3	54	2.2
1967	11,703,000	76,024	187,575	181,956	369,531	48,610	39,267	87,877	31.6	7.5	48	1.7
1968	11,992,000	82,233	195,601	188,577	384,178	52,739	42,164	94,903	32.0	7.9	50	1.8
1969	12,252,000	79,613	189,370	183,404	372,774	55,405	44,436	99,841	30.4	8.1	53	1.5
1970	12,516,000	84,605	187,535	180,366	367,901	52,692	41,455	94,147	29.4	7.5	48	1.2
1971	12,699,000	86,051	195,397	187,083	382,480	54,571	42,638	97,374	30.1	7.7	47	1.2
1972	12,951,000	90,094	196,115	187,951	384,066	58,442	45,476	104,080	29.7	8.0	46	1.2
1973	13,130,000	92,448	187,185	179,001	366,186	57,316	43,834	101,150	27.8	7.7	46	1.2
1974	13,393,000	91,730	186,072	179,613	365,685	69,650	49,475	119,125	27.3	8.9	49	-
1975	13,603,000	93,029	189,863	183,275	373,138	-	-	-	27.3	8.5	-	-

Source: Reports of the Registrar — General on Vital Statistics.

Table 2. Deaths of children under 1 year by sex, 1947-1966

Year	Number of deaths	
	Male	Female
1947	14,676	12,711
1948	14,274	12,233
1949	13,812	11,529
1950	13,752	11,097
1951	14,187	11,517
1952	13,645	10,938
1953	12,626	10,243
1954	12,083	9,807
1955	12,892	10,368
1956	11,967	9,650
1957	12,400	10,161
1958	11,886	9,761
1959	11,302	9,198
1960	11,321	9,228
1961	10,342	8,599
1962	10,800	8,767
1963	11,331	9,100
1964	11,394	9,170
1965	10,810	8,846
1966	11,093	8,906

Table 3. Food balance sheet for Sri Lanka average, 1968-1970

Commodity	Production	Net trade	Available supply	Gross food supply	Net food supply	Per capita supply				
						Kg/Year	Grams/Day	Calories/Day	Protein/Grams/Day	Fat Grams/Day
thousand metric tons										
Cereals										
Rice	1,466.41	562.59	1,917.21	1,826.51	1,242.02	101.35	277.68	997.87	19.75	3.06
Wheat flour		378.12	389.62	384.49	384.49	31.42	86.10	313.41	9.38	0.95
Other grains	32.60	4.58	37.18	35.34	31.80	2.59	7.04	24.40	0.58	0.22
Roots and Tubers										
Potatoes	25.64	0.16	25.80	20.63	20.63	1.68	4.60	3.22	0.08	0.01
Manioc	395.03	-	395.03	276.52	276.52	22.62	61.99	67.57	0.56	0.13
Sweet potatoes and Yams	71.46	-	71.46	50.02	50.02	4.08	11.20	10.87	0.12	0.03
Sugar	8.26	260.92	272.97	272.81	272.81	22.27	61.03	236.12	0.17	-
Pulses and nuts										
pulses	5.40	70.50	75.90	73.46	73.46	5.99	16.43	56.69	4.74	0.34
Coconut (shelled)	789.99	-2.77	787.22	309.82	309.82	25.24	69.15	279.38	2.77	27.66
Vegetables	682.25	59.66	741.91	573.60	506.94	41.33	113.23	35.10	1.70	0.23
Fruits	129.40	11.41	140.81	120.29	120.29	9.81	26.89	14.79	0.19	0.05
Meat										
Beef	15.75	-	15.75	15.75	15.75	1.29	3.53	4.92	0.56	0.28
Poultry	2.82	-	2.82	2.82	2.82	0.23	0.63	0.81	0.08	0.05
Eggs	23.77	-	23.77	23.34	23.34	1.90	5.22	7.52	0.57	0.54
Fish										
Fresh fish	127.85	-	127.85	78.09	78.09	6.40	17.53	10.87	1.54	0.47
Dried and salted	4.25	36.10	40.35	40.35	40.35	3.30	9.04	40.32	5.42	1.90
Milk										
Cow	105.33	-	105.33	102.79	102.79	8.40	23.02	14.90	0.80	0.80
Buffalo	31.14	-	31.14	30.59	30.59	2.50	6.85	6.92	0.27	0.51
Oil and fat										
Coconut oil	115.60	-59.39	56.21	45.24	45.24	3.69	10.10	89.34	-	10.11
Total								2,234.98	49.14	48.53

Source: Department of Census and Statistics, *Statistical Abstracts of Ceylon* and unpublished data.

Table 4. Food balance sheet for Sri Lanka average, 1971-1973

Commodity	Production	Net trade	Available supply	Gross food supply	Net food supply	Per capita supply				
						Kg./ Year	Grams/ Day	Calories/ Day	Protein/ Grams/ Day	Fat Grams/ Day
thousands metric tons										
Cereals										
Rice	1,340.22	473.09	1,900.21	1,810.15	1,231.18	94.85	259.68	904.40	17.25	1.04
Wheat flour	-	392.55	399.77	394.55	394.55	30.29	82.99	288.80	9.12	0.74
Other grains	32.39	0.72	33.11	30.08	27.37	2.11	5.77	19.34	0.52	0.14
Roots and tubers										
Potatoes	28.57	-	28.57	21.04	21.04	1.62	4.43	4.30	0.07	0.02
Manioc	436.20	-	436.20	305.34	305.34	23.42	64.18	100.76	0.57	0.12
Sweet Potatoes and Yams	68.50	-	68.50	49.95	49.95	3.83	10.51	12.62	0.12	0.03
Sugar	11.73	219.06	240.63	240.63	240.63	18.66	50.76	196.46	-	-
Pulses and nuts										
Pulses	6.18	23.90	30.08	28.96	28.96	2.24	6.16	21.17	1.48	0.05
Coconut (shelled)	862.59	-2.50	860.09	400.75	400.75	31.74	84.50	375.18	3.73	35.15
Vegetables	673.32	9.38	682.70	467.16	467.16	35.97	98.55	54.11	3.07	0.22
Fruits	152.99	10.45	163.44	138.93	138.93	10.69	29.29	22.63	0.26	0.03
Meat										
Beef	16.78	-	16.78	16.78	16.78	1.29	3.54	4.04	0.80	0.09
Poultry	3.41	-	3.41	3.41	3.41	0.26	0.72	0.78	0.18	0.01
Eggs	28.87	-	28.87	28.36	28.36	2.15	5.97	10.33	0.79	0.79
Fish										
Fresh fish	95.89	-	95.89	59.48	59.48	4.57	12.53	16.29	2.49	0.63
Dried and salted	4.94	35.42	40.36	40.36	40.36	3.10	8.50	17.51	3.63	0.44
Milk										
Cow	153.89	-	153.89	145.70	145.70	11.18	30.64	20.53	0.98	1.25
Buffalo	32.30	-	32.30	31.00	31.00	2.39	6.55	6.61	0.26	0.49
Oil and fat										
Coconut oil	112.97	-53.81	59.16	47.70	47.70	3.68	10.08	90.72	-	10.08
Total								2,185.35	46.05	51.95

Source: Same as for table 3.

Table 5. Population, gross production of paddy, and imports of rice, wheat-flour, sugar, pulses, fish and milk products, 1948-1974

Year	Population (thousands)	Gross paddy production (thousand bushels)	Rice imports (thousand tons)	Wheat flour imports (thousand tons)	Sugar imports (thousand tons)	Pulses imports (thousand cwt)	Fish imports (thousand cwt)	Milk Product imports (thousand pounds)
1948	7,244	18,700	409	169	104	319.2	492.3	14,804.7
1949	7,455	23,100	397	157	126	371.8	544.5	17,932.6
1950	7,678	22,000	490	166	112	506.3	556.1	16,139.1
1951	7,876	22,000	396	214	143	541.6	660.4	22,334.6
1952	8,074	28,900	399	208	128	578.9	682.3	20,704.2
1953	8,290	21,900	404	287	144	472.3	649.1	19,972.9
1954	8,520	31,100	396	200	138	558.4	605.6	20,364.8
1955	8,723	35,700	379	215	136	792.0	727.0	28,064.0
1956	8,929	26,400	484	182	186	930.0	812.0	27,619.0
1957	9,165	31,280	515	192	124	1,067.0	770.0	42,089.0
1958	9,388	36,600	475	211	43	1,199.0	967.0	35,609.0
1959	9,625	36,400	574	254	172	1,093.0	858.0	53,954.0
1960	9,896	43,000	520	165	188	824.0	983.0	47,082.0
1961	10,168	43,199	462	170	200	1,343.0	621.0	41,059.0
1962	10,443	48,069	404	173	167	1,810.0	620.0	49,652.0
1963	10,625	49,154	397	137	141	1,173.0	707.0	48,529.0
1964	10,965	50,506	648	308	221	1,345.0	832.0	54,657.0
1965	11,240	36,252	276	211	160	1,067.0	670.0	48,481.0
1966	11,520	45,787	682	236	307	1,069.0	1,200.0	50,250.0
1967	11,800	54,917	349	505	243	1,094.0	667.0	43,523.0
1968	11,964	64,593	364	422	242	1,159.0	753.0	39,442.0
1969	12,260	65,860	304	409	265	1,376.0	802.0	25,022.0
1970	12,514	77,447	472	419	279	1,394.0	835.0	33,157.0
1971	12,699	66,895	290	318	287	795.0	758.0	45,723.0
1972	13,020	62,901	294	301	223	1,732.0	654.0	14,683.0
1973	13,249	62,900	335	396	193	465.0	771.0	24,008.0
1974	13,393	76,798	293	402	67	-	-	-

Sources: Department of Census and Statistics, Ceylon Customs Returns.

Table 6. Population of Sri Lanka by single year of age and sex, 1946, 1953, 1963 and 1971

Age	March 19, 1946		March 20, 1953		1963		October 9, 1971		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
All ages	6,657,339	3,532,218	3,125,121	8,097,895	4,268,730	3,829,165	10,590,060	5,502,850	5,087,210
0-4	160,677	81,343	79,334	261,800	131,090	130,710	336,650	170,800	165,850
5	167,455	85,174	82,281	193,537	98,051	95,486	274,910	141,950	132,960
6	170,213	86,428	83,785	247,900	126,174	121,726	325,440	165,550	159,890
7	189,140	95,535	93,605	261,828	131,356	130,472	330,680	167,930	162,750
8	173,954	88,952	85,002	243,764	122,349	121,415	331,460	169,330	162,130
9	179,687	93,007	86,680	262,693	135,619	127,074	313,480	157,610	155,870
10-14	164,286	84,432	79,854	222,991	113,350	109,641	291,670	149,160	142,510
15	156,954	78,920	78,034	207,760	104,781	102,979	288,760	144,570	144,190
16	175,689	88,813	86,876	219,466	110,712	108,754	303,210	152,360	150,850
17	134,747	66,660	68,087	173,004	85,560	87,444	263,570	132,510	131,060
18	174,636	87,693	86,943	227,192	115,037	112,155	294,420	148,960	145,460
19	124,108	60,046	64,062	154,342	76,640	77,702	249,790	127,590	122,200
20-24	213,476	112,471	101,005	225,813	119,887	105,926	297,330	155,050	142,280
25	138,238	71,149	67,089	155,135	80,113	75,022	262,360	133,740	128,620
26	155,184	83,261	71,923	157,704	83,062	74,642	228,320	116,520	111,800
27	136,642	75,275	61,367	143,615	77,375	66,240	224,870	117,200	107,670
28	150,338	80,556	69,782	147,825	76,116	71,709	211,480	107,250	104,230
29	115,315	63,283	52,032	119,378	60,326	59,052	191,010	95,560	95,450
30-34	175,132	91,123	84,009	179,696	92,160	87,536	219,720	110,850	108,870
35	103,187	54,230	48,957	113,330	58,455	54,875	175,570	89,990	85,580
36	145,322	69,096	76,226	179,074	85,920	93,154	212,790	103,030	109,760
37	95,837	49,181	46,656	102,081	53,904	48,177	153,860	78,400	75,460
38	162,972	83,238	79,734	198,155	101,405	96,750	187,810	93,160	94,650
39	112,588	60,284	52,304	144,751	77,241	67,510	176,050	88,820	87,230
40-44	124,852	66,048	58,804	143,411	76,695	66,716	154,010	76,860	77,150
45	135,519	67,669	67,850	186,890	91,280	95,610	184,860	88,930	95,930
46	130,044	69,522	60,522	151,160	80,501	70,659	153,110	78,330	74,780
47	82,415	46,649	35,766	105,739	58,634	47,105	129,740	67,840	61,900
48	157,642	83,272	74,370	190,723	98,680	92,043	179,770	87,940	91,830
49	71,898	40,141	31,757	74,359	42,110	32,249	100,330	53,240	47,090
50-54	149,779	76,568	73,211	212,072	105,667	106,405	228,380	109,690	118,690
55	68,511	39,411	29,100	56,866	33,759	23,107	85,910	48,230	37,680
56	109,775	62,057	47,718	124,711	71,409	53,302	145,630	78,550	67,080
57	59,123	34,107	25,016	69,601	41,105	28,496	119,930	66,410	53,520
58	62,699	34,334	28,365	57,535	33,363	24,172	90,950	51,460	39,490
59	125,625	67,666	57,959	125,625	67,666	57,959	125,625	67,666	57,959
60	156,014	80,942	75,072	156,014	80,942	75,072	156,014	80,942	75,072
61	124,318	65,342	58,976	124,318	65,342	58,976	124,318	65,342	58,976
62	115,304	61,776	53,528	115,304	61,776	53,528	115,304	61,776	53,528

Table 6. (Continued)

Age	1946			1953			1963			1971		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
35-39	155,613	84,380	71,233	220,536	114,203	106,333	247,150	122,520	124,630	218,892	105,865	113,027
35	93,760	51,829	41,931	80,938	44,484	36,454	97,740	53,520	44,220	122,798	62,978	59,820
36	55,310	32,595	22,715	59,961	34,364	25,597	87,290	48,060	39,230	108,686	57,149	51,537
37	112,423	62,859	49,564	126,296	70,388	55,908	147,070	76,110	70,960	176,057	88,138	87,919
38	51,176	29,392	21,784	47,859	28,699	19,160	70,030	39,370	30,660	99,018	52,754	46,264
40-44	119,521	64,351	55,170	178,421	93,350	85,071	204,470	101,460	103,010	207,164	101,740	105,474
40	50,682	29,802	20,880	36,835	22,386	14,449	52,070	31,350	20,720	88,223	49,568	38,655
41	74,911	44,042	30,869	80,077	48,519	31,558	91,140	53,220	37,920	121,088	67,431	53,657
42	39,718	23,166	16,552	44,280	27,516	16,764	74,230	43,630	30,600	94,375	53,049	41,326
43	37,400	21,004	16,396	32,427	18,794	13,633	48,130	28,640	19,490	75,369	42,555	32,814
44												
45-49	112,056	62,557	49,499	167,133	89,841	77,292	188,320	97,420	90,900	198,148	99,524	98,624
45	66,816	40,027	26,789	47,356	28,084	19,272	55,280	33,280	22,000	84,458	46,285	38,173
46	34,119	20,554	13,565	37,031	22,633	14,398	53,090	31,720	21,370	71,227	40,226	31,001
47	73,525	41,211	32,314	85,982	49,987	35,995	102,670	57,420	45,250	122,486	64,148	58,338
48	33,048	19,075	13,973	32,814	20,812	12,002	45,230	27,460	17,770	68,489	39,455	29,034
49												
50-54	67,942	33,390	34,552	125,262	62,953	62,309	157,980	76,620	81,360	154,611	73,038	81,573
50	34,168	18,727	15,441	31,790	19,796	11,994	37,040	23,450	13,590	64,761	37,029	27,732
51	45,163	24,782	20,381	59,664	37,552	22,112	62,110	37,900	24,210	82,572	47,419	35,153
52	22,416	12,910	9,506	36,417	24,308	12,109	53,580	32,830	20,750	61,373	36,824	24,549
53	26,442	14,995	11,447	25,021	15,055	9,966	34,750	21,640	13,110	54,708	32,724	21,984
54												
55-59	55,959	30,516	25,443	95,390	52,001	43,389	129,800	69,360	60,440	144,994	73,795	71,199
55	38,425	22,886	15,539	31,914	19,456	12,458	40,460	25,380	15,080	65,425	37,157	28,268
56	18,795	12,063	6,732	17,470	10,862	6,608	29,370	18,750	10,620	45,432	27,386	18,046
57	34,620	20,207	14,422	32,214	19,278	12,936	48,410	28,580	19,830	62,434	34,952	27,482
58	15,342	9,026	6,316	11,637	7,347	4,290	22,080	13,990	8,090	31,203	18,893	12,310
59												
60-64	53,762	30,475	28,287	96,434	49,110	47,324	134,690	71,150	63,540	132,987	67,450	65,537
60	20,027	11,574	8,453	12,934	7,509	5,425	20,160	12,780	7,380	37,957	23,318	14,639
61	25,322	14,348	10,974	21,173	13,139	8,034	34,990	22,330	12,660	41,054	25,178	15,876
62	12,947	7,388	5,559	13,181	8,353	4,828	36,620	23,730	12,890	32,120	20,052	12,068
63	13,390	7,383	6,007	9,726	5,847	3,879	17,460	10,730	6,730	23,924	14,602	9,322
64												
65+	229,498	124,776	104,722	283,821	152,218	131,603	378,330	206,230	172,100	538,590	292,430	246,160
Unknown												

Source: A.G. Ranasinha, *Census of Ceylon 1946, vol. I, part II, Statistical Digest* (Colombo, Department of Census of Statistics, 1950); N.M. Idaikadar, *Census of Ceylon 1953, vol. II, (part II), Age* (Colombo, Department of Census and Statistics, 1957); Technical Working Group, *Population Projections for Ceylon 1963-1978* (Colombo, Department of National Planning, 1967), (mimeo.); Government of Sri Lanka, *Census of Population 1971, vol. II, All Island Tables, part I, General Characteristics of the Population* (Colombo, Department of Census and Statistics, 1975).

BRWAR PRINTING
LIMITED PARTNERSHIP 
18 SAMSEN RD. BANGKOK THAILAND
TEL. 2820-064-5, 2817-679

- No.24** *Role of Surveys and Studies for Family Planning Programme Management and Development – Report of a Regional Seminar* (E/CN.11/1225): 1976
- No.25** *Report and Selected Papers of the Expert Group Meeting on Training in Family Planning Programme Administration* (E/CN.11/1226): 1976
- No.26** *Report and Papers of the Expert Group Meeting on Social and Psychological Aspects of Fertility Behaviour* (E/CN.11/1231): 1974
- No.27** *Report and Selected Papers of the Regional Project on Pre-testing and Evaluation of Educational Materials Used in Family Planning Programmes* (E/CN.11/1159): 1975
- No.28** *Population Strategy in Asia – Report, Declaration and Selected Papers of the Second Asian Population Conference, November 1972* (E/CN.11/1152): 1975
- No.29 *Report of the Comparative Study on the Administration of Family Planning Programmes in the ESCAP Region: Organizational Determinants of Performances in Family Planning Services in Selected ESCAP Countries* (ST/ESCAP/16): 1977
- No.30 *Report of the Comparative Study on the Input-Output Relationships in Family Planning Programmes in Selected Countries of the ESCAP Region* (under preparation)
- No.31 *Report of the Multinational Study in Methodologies for Setting Family Planning Targets in the ESCAP Region* (ST/ESCAP/14): 1977
- No.32** *Guidelines for Preparing Subnational Population Projections* (E/CN.11/1230): 1975
- No.33** *Report of the Expert Group Meeting on Population Projections* (E/CN.11/1250): 1976
- No.34 *Report and Selected Papers of the Expert Group Meeting on Translation of Population Materials* (ST/ESCAP/13): 1977
- No.35 *Population Aspects of Manpower and Employment*
A: A Regional Overview, 1976 (mimeographed)
B: Comparative Study of Five Countries (under preparation)
- No.36 *Report of the Expert Group Meeting on Organizational Aspects of Integrating Family Planning with Development Programmes* (ST/ESCAP/38)
- No.37 *Report on Evaluation of the Role of Population Factors in the Planning Process through the Application of Development Models* (under preparation)
- No.38 *Report of the Expert Group Meeting on Migration and Human Settlements* (ST/ESCAP/46)
- No.39 *Report of Expert Group Meeting on Population and Development Planning* (under preparation)

B. Country Monograph Series

- No.1** *Population of Hong Kong* (E/CN.11/1120): 1974

- No.2 *Population of the Republic of Korea* (E/CN.11/1241): 1975
- No.3 *Population of Thailand* (ST/ESCAP/18): 1976
- No.4 **Population of Sri Lanka** (ST/ESCAP/30): 1976
- No.5 *Population of the Philippines* (under preparation)
- No.6 *Population of Japan* (under preparation)
- No.7 *Population of Nepal* (under preparation)
- No.8 *Population of Malaysia* (under preparation)
- No.9 *Population of Bangladesh* (under preparation)
- No.10 *South Pacific Series* (under preparation)

D. The Second Asian Population Conference, Tokyo, 1972

- ** Official report (refer APSS NO.28)
Available documents

C. Miscellaneous publications

- 1.** *Report of the Expert Working Group on Problems of Internal Migration and Urbanization, and Selected Papers* (SA/Dem/EGIM/L.22): 1967
- 2.** *Projections of Populations of Subnational Areas – Report of a Working Group* (E/CN.11/897): 1969
- 3.** *Directory of Key Personnel and Periodicals in the Field of Population in the ECAFE Region* (E/CN.11/898; United Nations publication, Sales No. E.70.II F.14): 1970

E. Asian Population Programme News

- ** A quarterly regional newsletter, published since 1971. Issue to date comprise Vol. 1, Nos. 1, 2, 3; Vol. 2, Nos. 1, and 2 and 3 (combined); Vol. 3, Nos. 1 and 2 (combined), Nos. 3 and 4 (combined); Vol. 4, Nos. 1, 2 and 3 (combined), No. 4; Vol. 5, Nos. 1, 2, 3, and 4 (combined); Vol. 6, Nos. 1, 2, 3 and 4 (under preparation) and occasional special issues.

F. Population Headliners

A monthly mimeographed news-sheet. Circulation is limited to ESCAP Population Correspondents and Member Government decision-makers.

G. ADOPT (Asian and World-wide Documents On Population Topics)

A monthly listing of publications with in-depth subject analysis for population libraries and reference centres in the ESCAP region. Available to institutions, professionals, libraries and reference centres on request.

HOW TO OBTAIN ESCAP PUBLICATIONS

ESCAP publications for sale may be obtained from:

- (1) ESCAP secretariat, United Nations Building, Rajdamn Avenue, Bangkok 2, Thailand
- (2) Sales Section, United Nations, New York, N.Y. 10017, USA
- (3) Sales Section, European Office of the United Nations, Geneva, Switzerland

ESCAP free publications may be obtained only from ESCAP at address (1) above.

