

Housing Development in Sri Lanka 1971-1981

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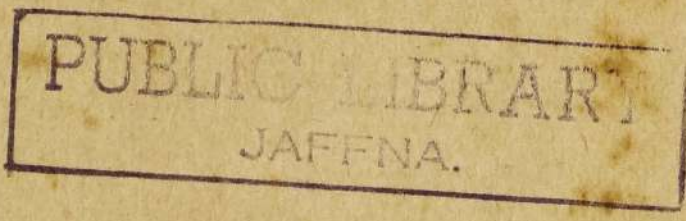
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PREFACE

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INTRODUCTION

This study was undertaken in response to a proposal made jointly by the Ministry of Local Government, Housing and Construction and USAID for a comprehensive analytical survey of the developments and policy changes in the housing sector during the intercensal period 1971-1981. It was conceived initially as a sequel to the study *Housing in Sri Lanka* published by the Marga Institute in 1976. The earlier study was based on the housing data that were made available in the censuses conducted up to 1971. The data on housing collected in the census of 1981 offered scope for a detailed analysis which would update the earlier study.

The present Housing Study, like the preceding one has attempted to assemble in one comprehensive volume the main statistical data and the large body of information and knowledge on the current housing situation and the state programmes and policies in the housing sector. In doing so it provides the reader with a detailed survey of housing development over a period of ten years up to the beginning of the eighties. The study evaluates the current trends and the development effort in the housing sector and identifies in each component of housing, the policies and strategies that are required to deal with the housing needs which have high priority.

The housing sector in national development

As brought out in the previous study, housing in Sri Lanka, forms part of a process of socio-economic change and development which is somewhat unusual for a low-income country.

The importance given to housing was consistent with the broad development approach of all governments in the post-independence period. The national efforts gave high priority to the satisfaction of some of the basic needs of the low-income population—food health, education, shelter and access to productive assets such as land. A system of food rationing at subsidised prices, the delivery

of free health services by the state, free education from the primary to the tertiary level and the distribution of developed agricultural land to the landless poor were some of the key elements in the country's development strategy. It is, therefore, not surprising that when development priorities came to be perceived and defined in this manner, housing should have received an important place.

The earlier study examines some of the special characteristics of this pattern of development and their impact on housing during the period 1946-1971. Chapter 1 of the present study confines itself to an introductory overview of the socio-economic trends during the decade of the seventies, which is the period relevant in the study.

In the first half of the seventies the rates of economic growth declined steeply and were among the lowest since Independence. Domestic savings and capital formation fell correspondingly. What is noteworthy is that despite this decline, house construction during the intercensal period proceeded at a relatively steady pace.

The period after 1977 saw the major economic reforms which led to the liberalisation of the economy, a significant augmentation of the flow of external resources and a massive increase in investment. The rate of inflation rose sharply, led by the construction sector. The economic conditions resulting from liberalisation, the increase in supplies and the government's own priorities which selected housing as a lead programme in its development strategy, led to a spurt in housing investment, particularly in the urban sector. Chapter 1 comments briefly on some of these issues.

Current housing situation and future needs

Chapters 2 and 3 analyse in detail the changes in the housing situation which occurred between 1971 and 1981. During the period, the supply of new housing units and the growth of stock outpaced the growth of the population in the rural and urban sectors. The composition of the housing stock itself underwent significant qualitative change. The proportion of permanent houses in the total stock showed a substantial increase during this period. The share of one-room and two-room housing units declined. The

average number of rooms per house increased. These changes by themselves indicate the positive trends in housing.

But, as has been pointed out in the analysis, they tell us only a small part of the entire story about housing investment. The analysis draws attention to the complex and heterogeneous character of the process of capital formation in housing. Investments are constantly undertaken by households to upgrade the structure of the houses and convert them from semi-permanent to permanent, to extend and expand their units and make various adjustments within the household to cope with housing needs. These investments are even more important in satisfying housing needs than the mere addition of new housing units to the stock. The increase in the average number of rooms per house may in fact amount to a substantial addition to the housing stock through arrangements for sharing of house units. Renovations and improvements to existing houses which are taking place continuously are a different form of replacing the depreciated stock. This seldom enters into our estimates of replacement needs. These aspects of housing investment have great relevance for the determination of housing policy. They indicate the extent to which a programme such as the ongoing Million Houses Programme could be more effective in both improving and adding to the housing stock, than costly programmes for new housing schemes.

The analysis also draws attention to certain other aspects of housing which are a cause for concern. On the current trends and the present rates of transformation and upgrading of the housing stock, it would take an inordinately long time to replace semi-permanent housing with permanent structures and provide all housing units with basic amenities such as toilets. On the basis of this analysis, the study develops two simple tools to measure the rate of transformation and the improvement in housing quality. These would be of use to policy-makers in monitoring and evaluating housing development and setting realistic targets towards which long-term housing policies and housing investment should be directed.

The priorities which emerge from this analysis come out relatively clearly. The one-room homes still comprise the large proportion of the total housing stock. The trends, however, indicate

that the share of one-room housing units is declining at a moderate pace and that housing demand is shifting to larger units, with two and three rooms. These all belong to the low-income and lower middle income categories in both urban and rural sectors. The national housing strategy has, therefore, to focus on this component of housing and the shifts in demand both quantitative and qualitative taking place in this range of dwelling units. Within this range there are pockets of urgent housing needs both among the urban and rural poor, such as the slum and shanty population in the urban sector, the resident workforce in the plantations, and the bottom two deciles of rural households. The study goes on to examine the implications which these priorities have both for upgrading of the housing stock as well as meeting the demand for new housing in these categories.

Against this analysis of the current housing situation, Chapter 4 provides three alternative projections of future housing needs for four five-year periods up to the year 2001. They are based on three sets of assumptions pertaining to replacements, reduction of over-crowding, and net family formation. The projections do not significantly differ from those which had been made by the Ministry of Housing and other agencies which have studied future housing demand in Sri Lanka. The methodology adopted, however, is somewhat different. The projections for new housing are based on estimates of net family formation. This is likely to be more reliable as a basis for estimating new housing needs than what has been frequently used for preparing such estimates. The projections also take account of relevant variables such as sharing of houses, renovations and upgrading, all of which have an impact on the estimates of replacement, the demand for new housing and the resource needs of the housing sector. These projections are subsequently examined in relation to requirements and availability of financial resources in Chapter 8.

Conflicting objectives of State policies

Chapter 6 deals with the government housing programmes and policies and the role the State has played in housing development. The State's programmes and policies reach out to all aspects of

housing development. The State regulates the growth and development of the urban infrastructure. It legislates for the regulation of rents, the protection of tenants and the limits on the ownership of housing property. It has a promotional role in housing and provides incentives for housing investment. It undertakes construction of housing units as well as finances construction, and is both a landlord and house developer.

Within the total framework of government policy, however, efforts were directed at two conflicting objectives—one relating to the welfare of tenants and the protection of their rights leading to the regulation of rental housing, and the other to the promotion of housing investment and housing development to cater to the increasing demand for new houses.

The policies followed by the State had two inevitable consequences.. On the one hand, they left almost no room for the rental housing sector to play a role in meeting new demand. In the private sector, therefore, the housing investments were left mainly to owner-occupants. On the other hand, it threw a fairly heavy burden on the State to undertake direct investments and expand the housing stock. As might be expected, the latter was a costly alternative. The study goes on to examine the current responses to this dilemma and points out that some of the initiatives that have been taken to satisfy the diverse and heterogeneous nature of housing needs, such as the Million Houses Programme, will to some extent help to resolve some of the contradictions in past policies.

Priorities in urban housing

The analysis, however, raises some issues of a more fundamental nature regarding the housing strategy. They first concern the problems of urban housing, particularly those of the Greater Colombo Area. The study argues that there is need for a comprehensive reappraisal of urban housing policies. Neither the model of housing development based on slum clearance and release of costly urban land for urban renewal and new development, nor the model which centres on an improvement of sub-standard urban housing in their present locations is adequate to meet the complex problems of

urban transformation which must inevitably take place with urbanisation and industrial growth. The international debate on urban housing issues has tended to veer between one or other of these models, the upgrading model gaining in popularity in recent times. Some of the negative implications of this approach are considered in the study and alternative approaches are explored. The changes in housing policy which have taken place recently, while they are in the right direction, do not address themselves adequately to the urgent problem of urban middle class housing.

The Million Houses Programme, which attempts to correct the imbalance in state investment programmes on housing, has as yet concentrated mainly on the rural sector. Demographic changes that can be foreseen in the eighties and the nineties, however, draw attention to another set of priorities. The unique character of the rural-urban balance in Sri Lanka was partly the outcome of the rural-to-rural migration which was planned and promoted by massive investments of the state on new agricultural settlements. As the available land resources become exhausted and as the development of the largest land settlement scheme, the Mahaweli, draws to a close in the late eighties, the rate of rural-to-rural migration is bound to fall and pressure for rural-to-urban migration is likely to increase correspondingly. It would, therefore, be prudent to plan for an increasing rate of urbanisation in the late eighties and nineties and examine how urban development policies as well as policies specifically concerned with urban housing need to take account of these changes.

Chapter 5 which presents the findings of a field survey of household behaviour in regard to housing, reveals a level of housing aspirations which lends support to this conclusion. Despite the low incidence of mobility and change of location, household preferences indicate that the pressure on existing urban areas could mount steeply in the near future. To avoid this urban development strategies would have to spread urban amenities widely in the rural and less urbanised areas. The field survey provides several other insights which have relevance for housing policy. It examines a cross-section of households, including a sample selected from government schemes which include samples from Government projects, and analyses the way in which households adjust to and cope with their housing needs.

Key resources for housing

Chapters 7, 8 and 9 deal with some of the key resources needed for housing—land, finance and the capacity in the construction industry in terms of materials and manpower. The study examines the requirements of land for housing, both in the urban and rural sectors and briefly surveys the existing situation for the management of land, particularly in the urban sector. It stresses the urgent need for an integrated land policy in regard to urban development and housing and goes on to make a number of specific recommendations in regard to institutional arrangements and policies.

The analysis on housing finance draws attention to several critical issues. It questions the validity of some of the current assumptions regarding the expenditures incurred on housing by households and their capacity to undertake housing investments which are generally derived from available national surveys. According to these surveys, hardly any households in the middle and low-income categories, could either afford to pay a reasonable rent for a house appropriate to their income category, or service a loan for investment on such a house, at current costs. These conclusions, however, are at total variance with the actual data on house construction.

Special characteristics of capital formation in housing

There is no doubt that substantial investments in housing are continuously taking place at all income levels. There has been a significant increase in the housing stock in those categories of housing which belong to the low income groups—the one-room and two-room houses. There has been a considerable volume of upgrading. The flow of resources which is evidently taking place from households of all income groups clearly contradicts the current assumptions regarding affordability. The study goes on to examine the incremental process of capital formation in housing which appears to facilitate these flows. It would seem that housing investment takes place effectively in small increments to satisfy the felt housing needs of a household. Households appear to make savings specific to housing from what they might have normally consumed if they perceive the opportunity for building, improving or acquiring

their own home. An understanding of this process is vital for any relevant and effective housing strategy which reaches out to support this investment effort.

The chapter also provides a brief assessment of financing needs for the future derived from the projections in Chapter 4. It offers a method of comparing present capacity with future needs by using 1980 as the base year and taking the mix of housing investment for that year as an index of capacity. This enables us to estimate the rates at which housing investment would need to grow both to meet the requirements of new housing as well as leave surpluses for the upgrading and improvement of the existing stock. These projections are based on the assumption that the economy would maintain rates of growth in the region of 5%, and the proportion of GDP invested in housing will remain relatively constant, given the fact that the current proportion itself is above the average for a low-income country. The projections suggest that the resources that are likely to flow into the housing sector, if managed within a well-designed housing strategy, are likely to be adequate to cope with the growing needs.

The construction industry and the informal component in housing

The analysis of the construction industry in Chapter 9 deals with the special features of that part of the industry concerned with house construction—a segment which might be described as the informal component of the construction industry. The data at the macro-level suggest that the construction sector has sufficient capacity to maintain a steady growth in the supply of housing. However, there has to be a major effort for improving the productivity and quality of the informal sector responsible for house construction. In regard to the housing unit itself, a great deal could be done to cut down costs, improve designs, enhance the quality of the low-cost housing unit and to introduce new materials. Much of this can, however, only be implemented by improving the managerial and other skills in the informal construction sector which is responsible for the bulk of house construction. In both these areas,

the chapter delineates a programme of research and extension which would be helpful in upgrading the informal sector in house construction.

Conclusion

The final chapter is a selective summary of the main conclusions and recommendations of the study. The conclusions are not presented in a form which offers firm and final solutions to the problems that are discussed. What the study attempts to do is to uncover and define the complex character of the housing developments in Sri Lanka and examine the main problems that they pose. In doing so it explores the various options that are available, analyses their implications and points to the essential elements of a comprehensive housing strategy. It also indicates the areas in which policy-makers and administrators would need to have further information and knowledge to guide them in their choice of options and translate them into policies and programmes which are ready for implementation.

The study, in keeping with its objectives, addresses a mixed audience of scholars, policy-makers and administrators concerned with housing. Its method of analysis and presentation of issues attempt to include and reach all of them. In the process it is inevitable that each of these groups may find some parts of the study more relevant than others. This remains one of the inevitable hazards in a study of this nature. The complete product includes a large volume of detailed work which has gone into several documents which were prepared as working papers for the preparation of the final report. These are available for reference at the Institute and will be subsequently published in mimeographed form.

The publication of this study on Sri Lankan housing is also timely as it appears during a period of preparation for the International Year of Shelter for the Homeless in 1987.

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CHAPTER I

THE SOCIO-ECONOMIC BACKGROUND

The Sri Lankan economy entered the 1970s after having achieved a reasonable rate of economic growth in the second half of the 60s. During this period Sri Lanka was able to mobilise a considerable amount of development assistance, which increased the share of capital formation to about 18% of GDP. As a result it had accumulated a foreign debt of approximately Rs. 1,800 million, nearly 90% of its total export income at the time, and was running a sizeable balance of payments deficit on its current account which was in the region of Rs. 300 million or 15% of its export earnings in 1970.

The economic trends from 1970-1977

In terms of economic performance the 1970s could be divided into two distinct periods. The first period, from 1970 to 1977 was one in which the regulated economy in Sri Lanka was struggling in an international environment which was becoming increasingly adverse. The steep increases in energy prices produced a crisis of almost unmanageable proportions in the balance of payments, which resulted in a severe contraction of investment and growth. Rates of economic growth during 1970 to 1977 were the lowest in three decades. The average annual rate of growth of GDP-in real terms was 2.9%. Savings as a share of GDP continued to decline from 15.8% in 1970 to 12.5% in 1973, and 8.1% in 1975. The gross fixed domestic capital formation declined from 17.3% in 1970 to an average of 14.2% in the 1971-77 period.

Table 1 presents the main economic data for the period 1971 to 1981.

The energy crisis and the setback to the economy

The various external shocks to the economy were aggravated by a number of internal problems. The widespread political upheavals in 1971 caused a serious setback to the economy. The rate of growth of G.N.P. for that year was only 0.1 %. Several crop failures compounded the problems of the balance of payments. Paddy output which had reached the peak of 77.4 million bushels in 1970 had declined to approximately 62.9 in 1973. The increase in energy prices during the first half of the 1970s had imposed severe constraints on the import budget. The import of petroleum products increased ten-fold from Rs. 26 million in 1971 to Rs. 295 million in 1973. Its share in the import budget rose from approximately 3 % to nearly 20 % during this period. There was a steep all-round increase in import prices, and the import price index with 1969 as the base year, rose from 140 in 1970 to 209 in 1973. The situation relating to external payments was further aggravated as the principal commodity for export, tea, did not share in the commodity boom that most other export commodities of developing countries experienced in the years 1974 and 1975.

Sri Lanka was able to steer its economy through this crisis mainly on account of the substantial flows of external aid which it received during this period, which was around an annual average of approximately 125 million dollars. Despite these resource flows, the growth rate of GDP which was around 4.5 % and 3.5 % in the years 1973 and 1974, dropped to 2.8 % in 1975 and 3 % in 1976. The decline in investment and savings was continuing to retard growth. Operating within the resource constraints that prevailed and the policies that were being pursued, the economy was not capable of recovering its momentum.

The Land Reform and redistribution of housing assets

Alongside the economic stresses, the period 1970 to 1977 witnessed social changes of a far-reaching nature which altered the structure of wealth and income. The Government implemented an extensive programme of land reform which limited the ownership of land in plantation crops to 50 acres and subsequently transferred the plantations which were owned by foreign companies to the

State. In the field of housing, the Government enacted legislation which placed a ceiling on the ownership of housing property, as a result of which a large number of rented premises were transferred to their occupants. The main impact of the Land Reform was on the plantation sector, which was a vital component of the country's export economy. The initial problems of management which followed the transfer of these lands to the state had the effect of lowering productivity and output. This was reflected in the lower volume of exports. The drop in output of these export commodities came at a time when the economy was already feeling the full impact of the international economic crisis owing to the steep increase in the energy prices.

Both measures—the Land Reform and the Ceiling on Housing Property—had significant consequences for the housing situation in the country. With the transfer of large plantations to the state, the management of the living conditions of the resident workforce including housing, became the responsibility of the State. The reforms led to far-reaching policy changes which included a programme of housing improvement in the estate sector. Legislation placing a ceiling on ownership of housing radically changed the structure of ownership in the housing sector. On the one hand, together with the disincentives of rent control, it severely restricted the scope of house construction for renting and placed the main burden of housing investment on owner-occupants. On the other, it led to a large-scale redistribution of housing assets and created a large group of new owners of housing assets with the incentive to invest in improvements and additions and with sound collateral for loans. This applied mainly to the middle class household which benefited under the legislation. These major policy initiatives are discussed in greater detail in the chapters which provide an analysis of the relevant aspects of housing.

New sources of foreign exchange

There were, however, several other developments in the economy which have to enter into our evaluation of the trends during the period 1970-77 - see Table 4. First, new sources of foreign exchange earnings, though small in value, were beginning to emerge.

These included earnings from export of gems, exports in manufactures and from tourism. Tourism began to expand steadily, from 46,247 arrivals in 1970 to 153,665 in 1977. For the first time, there was also a net flow of private remittances from abroad. In 1975, it amounted to Rs. 19 million and had increased to Rs. 122 million by 1977. The invisibles in the balance of payments were beginning to assume increasing importance. The migration of labour to West Asia was also commencing at the end of this period.

Both tourism and the private remittances of income earned abroad, were having an impact on housing investment. Tourism affects housing in a variety of ways. It provides new opportunities to householders to offer accommodation and lodgings and this increases the fungibility of housing assets and reduces the burden of the housing investment. As would be seen later in the study, private remittances have become an important source of finance for housing investments. At the same time, the outflow to West Asia contained a significant number of construction workers and this was creating shortages of skilled grades, pushing up wages and raising construction costs, which inevitably inflated the costs of house construction.

Positive changes in the demographic situation

A positive feature during this period were the changes that were taking place in the demographic situation. The birth rates were declining. It had dropped from an average of 34.3 during the five-year period 1961-1965 to 28.7 for the period 1971-1974. Population growth had declined to an annual rate of around 1.7%. The rapid expansion of the workforce had passed its peak. The age group 20-29 which is relevant for household formation and the demand for housing, was also growing at a slower pace than before.

Change of direction after 1977

The new government which came into office in July 1977 initiated a number of far-reaching reforms in economic policy which gave a new direction to the economy. The main thrust in this policy package was towards the liberalisation of the economy

and the removal of controls and regulations, thus enabling the market to function more efficiently in the allocation of resources. The regulatory system was dismantled and exchange controls and import quotas removed for almost all import items, with a few exceptions as in the case of private cars. The rupee was devalued substantially and allowed to float against a basket of currencies. The administered prices for a range of important commodities such as petroleum, and food items were corrected, and the element of subsidy in many, such as transport substantially reduced. In the new pricing policy, domestic prices were allowed to reflect the movement of international prices.

These policies of liberalisation were supported by a major effort at the mobilisation of external resources and a much higher level of investment in the economy. The total disbursements of aid increased substantially during this period, from US\$ 203.9 million in 1977 to US\$ 385.2 million in 1981. In the Private Sector, higher financial savings were mobilised by increases in deposit interest rates. A favourable investment climate and substantial tax concessions provided incentives, and mobilised a higher level of foreign and domestic private investment. While the essential elements of the social welfare system, such as free health and free education, were retained and in certain instances strengthened, the Government modified certain parts of the system and made it more discriminatory to ensure that the benefits of the system accrued to those who were genuinely in need. As a result, the food subsidy was replaced with a food stamp scheme, for which households below certain incomes became eligible. State subsidies, however, continued to cover a range of essential items including infant milk foods, public transport, kerosene and fertilisers. The net effect of these changes, however, has been significant in reducing the burden of subsidies on the economy and releasing resources for development. The subsidies which amounted to 9.6 % of GDP in 1977 were absorbing only 3.4 % in 1981.

In the first phase of implementation of this policy package the economy responded with great vigour. Table 1 provides some of the key statistics dealing with the economic performance of the country during the period 1977 to 1982. The liberalisation of the economy combined with the substantial increase in the flow of

external resources and the unprecedented public sector investment programme, resulted in high rates of economic growth in 1978 and 1979. The overall rate of growth of GDP for the period 1978-1982 has been relatively high, maintaining an annual average of 6.2%. The sectors which recorded the highest growth have been paddy production, services and construction. Therefore the Rural Sector also shared in the economic expansion, and the real incomes of rural households on the whole should have risen correspondingly. These were also areas which responded quickly to the changes in relative prices and the elimination of import quotas. As against these relative successes, the outcome has been disappointing in several other important sectors, particularly the plantation sector and the manufacturing sector.

Reduction in the rate of unemployment

There was a considerable reduction in the rate of unemployment. According to data available in the surveys conducted in 1978-79 and 1981-82, the rate had been reduced from about 24% of the labour force in 1973 to 14.8% in 1978-79 and 11.7% in 1981-82. The increase in fixed investment was exceptionally high. It rose from around 14% to 15% of GDP in the period 1970-77 to an average of about 29% between 1978 and 1983. These higher levels of investment, however, resulted in serious problems both for the Government budget and for the balance of payments. The liberalisation of imports on the one hand and the massive investment programme on the other, generated a volume of domestic demand which produced both widening gaps in the balance of payments and large deficits in the Government budget. The overall budget deficit rose from 5.8% of GDP in 1977 to approximately 23% of GDP in 1980. Since then it has been reduced but yet remained around 14% of GDP in 1982. These budgets were mainly financed by foreign resources, the major share of which came in the form of concessional assistance. The Government also resorted to a fairly high level of commercial borrowing in foreign capital markets. Even so, these resources were not adequate to bridge the deficits and in the early period the Government had recourse to a large volume of Central Bank borrowing. It was equivalent to 10.7% of GDP in 1980, and 4.6% in 1981. There has been progressive

improvement in budgetary management in the recent past and borrowing has been reduced from 3.7 % of GDP in 1982 to 0.2 % in 1983.-

The increased rate of inflation

The removal of subsidies and the correction of administered prices, the devaluation of the rupee, the liberalisation of the economy and the transmission of inflationary pressures from the international economy and the large budget deficits which fuelled domestic demand, all combined to produce a rate of inflation which was unprecedented for Sri Lanka. During the period 1970-1977, the major changes in the international price structure, resulted in a rate of inflation which averaged approximately 10 %. In the period 1978 to 1982, the rates of inflation rose steeply. In certain years (1980) it exceeded 30 %. The average for the period 1979 to 1982 was in the region of 15 %.²

The rate of inflation was particularly high in the construction industry. The trends in the industry are analysed in Chapter 7. As will be seen in the analysis, the developments in the construction industry and the rise in prices and wages in this sector, had its inevitable effects on the costs of house construction. At the same time, the inflationary conditions resulted in steep increases in land values. The escalation was closely linked with the expansion of the economy consequent on liberalisation. There was a visible growth in the commercial sector with resulting demand for space and new buildings. The flow of foreign investment and the large influx of foreign personnel, also increased the demand for rental buildings and residential units.

Social impact of changes

The success with which Sri Lanka broke out of the constraints of low investment and low growth in the period after 1977 has been all the more remarkable because it was achieved during a period of unprecedented recession in the world economy, which had led to the contraction of world trade for the first time in the post-war period.

As stated earlier, the Sri Lankan economy was fortunate that it was able to mobilise a volume of external resources much more than in the past despite the unfavourable international environment. This made it possible to increase the proportion of investment very substantially while maintaining current levels of consumption and even slightly improving on them. Income inequalities appear to have grown during this period according to the data available from recent surveys vide Table 6. At the same time, the data show that the average incomes of the lowest income deciles also appear to have increased in real terms. This taken together with the welfare package of free health services, free education, food stamps and subsidies on a range of essential items, meant that the system as a whole was able to cushion the population against the worst effects of the global recession. The key social indicators continued to improve during this period. Crude death rates fell for the first time below 7 and stood at 6.4 in 1980. Infant mortality declined from 42 in 1977 to 34 in 1980. Vide Table 5.

We shall see later that the period 1977-1980 also witnessed a substantial increase in house construction and that for the intercensal period 1971-1981, there have been modest but steady improvements in the quality of housing.

Medium-term prospects

In the uncertain international environment, it is difficult to make any reliable forecast of economic growth over the next five years. The Government programme of investment forecasts a rate of growth of 5.8 % for the economy for the period of 1984-89. The sectors that are expected to contribute substantially to this growth include paddy and domestic agriculture which together would grow at approximately 4.0 %. The construction sector is expected to grow at approximately 7.3 % a year, and the manufacturing sector, other than tea, rubber and coconut processing, at 8.6 %. The trade deficits and the balance of payments are projected to continue at high levels. The dependence on high levels of aid, therefore, will persist into the second half of the 80s. Meanwhile, the major investments with relatively long periods of gestation, made during the 1977-83 period, will begin yielding returns and are likely to help in sustaining

a fairly high rate of economic growth. At the same time the pressures generated by the inordinately high level of investment are likely to ease and the capital outlay as a proportion of GDP will correspondingly drop, leaving room for a more even pace of development with less reliance on external borrowings.

The changes in the international environment appear to be favourable in the medium-term, with lower prices for oil and higher prices for tea. As against this, major imbalances in the Sri Lankan economy which emerged in the sixties and seventies have persisted and grown in intensity. No vigorous expansion of export earnings from current sources is in sight. Meanwhile, the debt service burden has continued to grow. A scenario of stable growth would therefore depend on several factors. These would include sound macro-economic management, a substantial improvement in the productivity of important parts of the existing capital stock such as Public Sector industry and the plantation sector, and an international environment which will be conducive to the flow of external resources at levels comparable with what is currently available.

TABLE 1
ECONOMIC INDICATORS FOR SRI LANKA 1971 TO 1981

Economic Indicators—Years	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
1. GNP Constant (1970) Factor Cost Price .. (Rs. Million)	13,034	13,474	13,995	14,449	14,837	15,258	15,934	17,329	18,430	19,456	20,257
2. Growth Rates of GNP at Constant (1970) Prices	0.5	3.4	4.0	3.5	2.7	3.0	4.3	8.2	6.2	5.6	4.1
3. Per Capita GNP Constant (1970) Prices ..	1,026	1,040	1,071	1,088	1,099	1,112	1,143	1,221	1,274	1,320	1,352
4. GDP at Constant (1970) Prices ..	13,209	13,631	14,138	14,585	14,987	15,431	16,078	17,401	18,501	19,575	20,706
5. Growth Rates of GDP at Constant (1970) Prices	0.2	3.2	3.7	3.2	2.5	3.0	4.2	8.2	6.3	5.8	5.8
6. Growth Rate of Real National Income at Constant (1970) Prices	0.1	1.9	2.7	2.1	0.1	3.8	7.5	7.9	3.1	3.7	3.3
7. Growth Rates of GNP per Capita at Constant (1970) Prices	-0.1	1.4	2.9	2.1	1.1	1.4	2.6	6.3	4.2	3.6	2.4
8. Gross Domestic Fixed Capital Formation/GDP (%) at Market Prices	15.2	14.5	13.5	12.5	13.9	15.2	13.8	20.0	25.3	31.3	27.4
9. Gross Domestic Savings/GDP at Market Prices (%)	—	—	12.5	8.2	8.1	13.9	18.1	15.3	13.8	11.2	11.7
10. Colombo Consumer Price Index (1952=100)	141.9	150.8	165.4	185.8	198.3	200.7	203.2	227.8	252.3	318.2	375.4

Central Bank of Ceylon—Review of the Economy, 1981.

TABLE 2
BALANCE OF PAYMENTS, 1970-1981
(Rs. Million)

Item	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980*	1981
1. Merchandise ..	-316	-287	-255	-299	-1,263	-1,421	-710	+350	-2,393	-7,288	-16,312	-15,614
Exports (f.o.b.) ..	2,016	1,931	1898	2,345	3,400	3,913	4,707	6,640	13,207	15,282	17,603	20,507
Imports (c.i.f.) ..	-2,332	-2,218	-2,153	-2,644	-4,663	-5,334	-5,417	-6,290	-15,600	-22,570	-33,915	-36,121
2. Services ..	-103	-14	-15	+53	-76	+89	+112	+304	+119	+739	+859	+235
Receipts ..	237	314	308	388	444	565	643	923	1,942	2,992	4,605	5,937
Payments ..	340	328	323	335	368	476	531	619	1,823	2,253	3,746	5,702
3. Goods and Services Balance (1 + 2) ..	-419	-301	-270	-246	-1,187	-1,332	-598	+654	-2,274	-6,549	-15,453	15,379
4. Transfers ..	69	85	74	85	280	560	548	612	1,242	2,993	4,541	7,036
Private ..	-6	-20	-26	2	2	19	56	122	342	754	2,260	3,918
Official ..	75	105	100	83	282	541	492	490	900	2,239	2,281	3,118
5. Current Account Balance (3 + 4) ..	-350	-216	-196	-161	-907	-772	-50	+1,266	-1,032	-3,556	-10,912	-8,343
6. **Non-Monetary Capital ..	335	417	254	432	553	404	591	326	2,600	3,306	6,585	7,691
7. Valuation Adjustments ..	-	-	-	-	-	-	-	1,680	344	18	+964	-39
8. Errors and Omissions ..	-29	6	+17	+17	-8	-32	-10	+41	-50	+820	+136	33
9. SDR Allocation ..	78	63	62	-	-	-	-	-	-	241	258	252
10. Overall Balance ..	-34	258	137	288	-362	-400	531	3,313	1,861	793	-2,967	406

* Provisional

** Includes long-term and short-term capital flows to public and private sectors, net of amortization.

Source: Central Bank of Ceylon—Review of the Economy 1981.

TABLE 3
DEMOGRAPHIC CHANGES IN SRI LANKA—1953-1981

	1953	1963	1971	1981
Total population (in thousand)	8,098	10,583	12,762	14,850
The rate of growth of population during each period/annum (%)	..	2.5	2.1	1.8
Percentage of population below 25 years of age (%)	57.7	59.4	59.6	59.7
Percentage of population between the 20-29 age group (%)	18.2	15.4	17.5	20.9
The rate of growth of population of age group 20-29 years of age	..	1.0	3.9	3.4
Percentage of urban population	15.3	19.1	22.4	21.5

Sources : Ministry of Plan Implementation—Socio-Economic Indicators of Sri Lanka, 1983.
 Department of Census and Statistics—Statistical Abstract of Sri Lanka.

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TABLE 4
**FOREIGN EXCHANGE EARNINGS FROM REMITTANCES, TOURISM
 AND THE EXPORT OF GEMS**

	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
Private transfers (remittances) (Rs. million)	20.4	23.6	44.7	54.3	60.0	109.0	189.7	609.8	935.4	2,518.0
Net private transfers (Rs. million)	-19.9	-26.3	+1.5	- 1.7	+19.2	+55.7	+122.4	+342.1	+753.9	+2,260.0
Tourist receipts (Rs. million)	20.3	43.8	79.5	107.1	157.1	237.8	363.1	870.0	1,188.0	1,830.3
Export earnings from precious and semi-precious stones (Rs. million)	3.4	12.0	140.8	108.7	180.2	261.4	297.9	531.0	490.1	663.7

Source: Ceylon Chamber of Commerce—Annual Reviews of Business and Trade.
 Central Bank of Ceylon—Annual Reviews of the Economy.



TABLE 5
SOCIAL INDICATORS FOR SRI LANKA—1953—1981

Social Indicator	1953	1963	1971	1981
Population (in Thousands)	8,098.6	10,582.0	12,689.0	14,850.0
Crude Birth Rate (per 1000 population)	39.4	34.1	30.0	28.0
Crude Death Rate (per 1000 population)	10.9	8.5	7.7	6.4
Infant Mortality (aged 0-1 years per 1000 live births)	71	56	45	34.0 (1980)
Life Expectancy at Birth (year)	58	63.5	65.25	69.0
Literacy (percentage)	69.0	76.9	78.5	86.5
Unemployment (as % of labour force)	16.6	13.8	24.0	14.75

Sources: Department of Census and Statistics—Statistical Abstract of Ceylon, 1955, 1965, 1977.

Central Bank of Ceylon—Sri Lanka Socio-Economic Data, 1983

Central Bank of Ceylon—Report on Consumer Finances and Socio-Economic Survey
1953, 1963 and 1978/79

World Bank—World Development Report 1983.

TABLE 6
INCOME DISTRIBUTION, 1953-1978/79

(Percentage of Total Income received by each
decile of Ranked Spending Units)

Decile				1953	1963	1973	1978/79
Lowest	..	..	..	1.90	1.50	2.79	2.12
Second	..	..	..	3.30	3.95	4.38	3.61
Third	..	..	..	4.10	4.00	5.60	4.65
Fourth	..	..	..	5.20	5.21	6.52	5.68
Fifth	..	..	..	6.40	6.27	7.45	6.59
Sixth	..	..	..	6.90	7.54	8.75	7.69
Seventh	..	..	..	8.30	9.00	9.91	8.57
Eighth	..	..	..	10.10	11.22	11.65	11.22
Ninth	..	..	..	13.20	15.54	14.92	14.03
Highest	..	..	..	40.60	36.77	28.03	35.84
GINI Co-efficient of Income Distribution				0.46	0.45	0.35	0.44

Source : Central Bank of Ceylon—Report on Consumer Finances and Socio-Economic Survey, 1978/79.

REFERENCES : Chapter 1

1. Central Bank of Ceylon. *Annual Report, 1983.*
2. Central Bank of Ceylon, *Annual Reports, 1970, 1980, 1983.*

CHAPTER 2

THE NATIONAL HOUSING STOCK CHANGES AND TRENDS

Introduction

This chapter examines the broad magnitudes of change of the national housing stock. Its primary aim is to indicate the direction and pace of change of available housing. The chapter begins with a definitional framework of the housing service. It conveys the complexity of the bundle of services described as housing.

In order to examine the trends and changes, the convenient decade of 1971-1981 is used. Data on the housing stock as well as its features are available from published census reports. However, this period contains two different sub-periods, where the broad economic outlook and the policy package directed at housing underwent a noticeable change. This chapter does not attempt to compare and contrast the effects of the different approaches to the national economy and housing in particular, during the 1971-77 period and the post-1977 period.

The Housing Service—Definitional framework

The current analysis of housing views a house as a durable good which provides a complex flow of services. It has a high cost of supply relative to most other goods, is a heterogeneous product and has the important property of being fixed in location. A house is also a store of wealth with asset-like properties. Its importance is derived primarily from its function as a home, providing a base for nurturing a family within its physical structure. The bundle of different component services or characteristics which a house provides can be divided into two categories or groups. The first is related to the physical structure and its associated amenities. The

other is related to the accessibility which a house provides to employment and a multitude of services among which are health, education, marketing facilities and recreation.

Structure and amenities

The term 'shelter', which applies to one of the most important aspects of the housing service, is a component of the first group. The physical structure, its configuration, organisation of space into rooms or specialised use of space, the materials of construction and the age of the structure define the quantity and quality of shelter. The floor area and number of rooms is a broad measure of the potential quantity of shelter service that a particular house can provide. The materials of the floor, walls and roof, together with the age of the house indicate the potential quality of the shelter service.

Besides shelter there are other services directly related to a house. The yard or site area associated with a house offers the opportunity for a variety of household activities—additions to an existing dwelling, construction of another, location of the water source for the house, a site for waste disposal and a home garden. The toilet facilities, water service and source of lighting available to a house complete the first group of services. The type of amenity such as a water-seal toilet or protected well, defines the quality of the available service and is an integral part of the total bundle of services derived from a house.

Access features of housing

The second group of services is related to its specific location, the access it provides to potential or actual work sites and an array of goods and services needed by the occupants of a house. Worksite location together with a transport system is an important factor determining the patterns of residential location. A house has, therefore, an associated set of employment and income opportunities. Clearly, this set is not the same for widely dissimilar groups of occupants at the same location.

Certain characteristics of the neighbourhood or environment of a house imply different levels of satisfaction associated with the total flow of housing services. These include access to roads street lighting, drainage and social characteristics like ethnicity and economic class of the occupants of the neighbouring houses.

The occupants

The occupants of a house are collectively termed a household. However, a small proportion of the houses are occupied by more than one household. Each household generally comprises one or more family units. Although single-family households predominate in Sri Lanka, a significant proportion of the occupants are multi-family households. The practice of extended families living in one house has an important bearing on the nature of demand for housing.

Housing as an activity

A house is perhaps the largest single investment made by a household. Depending on the materials of construction of the initial unit, this investment implies maintenance, improvement and upgrading activity spread over time. The volume of activity in terms of financial and material resources and labour, depends on the quality and size of the structure already in place. Meanwhile, changes in the composition and size of the household and its income and tastes, change the demand for various aspects of the bundle of housing services. Housing, as an activity, is therefore not confined to the building of new homes, but includes repair, maintenance and upgrading through additions and improvements of existing homes as well.

The implications of different tenorial forms

Although the flow of services from a house cannot be directly associated with its form of tenure, the manner in which the flow is maintained and augmented through repair and upgrading is affected by tenure. The duration of occupancy of a home may be a reflection of its occupants' unwillingness to move or alternatively, a preference for a particular location. The long periods of occupancy also may

reflect the high transaction costs in moving from one house to another. The legal environment related to housing in Sri Lanka has discouraged the supply of rental housing, which makes the process of searching and moving or changing houses very costly. The period of occupancy and tenure interact, especially in the case of owner occupants, to stimulate upgrading and addition to existing houses. Given ownership, long occupancy implies the growth of the household size and in a situation where the housing market does not adjust quickly to accommodate new families, upgrading and additions to existing structures become a viable option for a significant proportion of the households. Meanwhile regulations which discourage the supply of rental housing may also cause a deterioration of the rental stock through neglect and lack of maintenance.

Data on some components of the bundle of housing services are not readily obtained at the aggregate level. Usually the available data pertain to the first group of housing services, that is shelter and associated amenities. Worksite location and accessibility to services such as health, education and transport are usually beyond the scope of censuses and large-scale surveys.

The aggregate data obtained from census reports mask important features associated with some aspects of the housing service. In addition, it is difficult to disentangle the complex process through which the housing stock is improved and replaced from such data. At the upper income level a garage may be converted to a bedroom, homes may be subdivided and additional accommodation created. In the rural sector, a colonist in an agricultural settlement living in a government type-plan home would construct a lean-to extension to use as a kitchen while the designated kitchen is used as a bedroom. Information about neighbourhoods is not obtained from aggregate data-gathering exercises. Access to amenities may not capture features like inconvenience owing to location, irregularity of service as in the case of pipe-borne water. As a result important characteristics of the quality of service may be missed. For instance, a house with access to a shared well may have a more convenient, regular supply than one which obtains water from a mains supply that is subject to daytime water-cuts.

Information on the type and extent of home improvement, what type of households undertake them, how such activity is organised

and financed has to be gathered through specific studies designed to investigate the process of home improvement. Knowledge about this process is invaluable, and leads to a better understanding of the transformation of the housing stock and how resources are mobilised and used for this purpose.

Growth of Housing Stock and Population between 1971 and 1981

According to the Census of Population and Housing, by March 1981 the national housing stock was over 2.9 million units. Nearly 4 % of the stock was vacant at the time of the census. The total occupied housing stock was 2.8 million units. The population of the country was 14.8 million persons, implying a ratio of population to occupied housing of about 5.3 persons. Between 1971 and 1981 the vacancy rate fell from 6.9 % to 3.9 % of the total stock. This may be partly accounted for by possible seasonal variations in the occupation of housing. The 1971 census was conducted in October, the 1981 in March. During the period 1963-1971 (intercensal) the population had grown faster than the occupied housing stock; an average annual rate of 2.3 % compared with a rate of 15 %.* This resulted in the average occupancy rate increasing from 5.4 persons in 1963 to 5.7 persons in 1971. In the intercensal period that followed the housing stock and its occupied component grew faster than the population and the average number of occupants per house declined. The ratio of population to occupied housing fell from 5.7 in 1971 to 5.3 in 1981.¹ Clearly, the performance during the 1971-81 period was superior to that of the previous one.

* The percentage increase of population and occupied housing from 1963 to 1971 was 19.9% and 12.5% respectively.

1. The average number of occupants per house for the occupied housing stock would be somewhat smaller than the figure presented here if the population in living quarters other than houses was excluded. For the year 1971, the census recorded about 321,000 persons occupying boarding houses, hotels and a variety of lodgings. This corresponds to about 2.5% of the total population. The number of occupants per housing unit (occupied housing only) will be reduced to 5.6 if this factor is taken into account. In 1981, the average number of occupants falls to 5.2 persons.

TABLE 1
GROWTH OF POPULATION AND HOUSING, 1971-81

Year	Population (millions)	Occupied Housing Stock (millions)	Total Stock (millions)
1971	12.690	2.217	2.382
1981	14.850	2.811	2.926
% increase	17.04	26.8	22.8
Average annual rate of growth (%)	1.68	2.55	2.20

Source : Department of Census and Statistics, 1982 (1).

Changes in selected aspects of housing services

Broad measures of both the quantity and quality aspects of the flow of services of the existing stock of housing can be obtained from the stock data. The characteristics of the stock, the floor area or size, materials used, amenities and various locational features associated with a house, are measures of the volume of services that can be derived from it.

Floor area

The 1981 census data do not include information on floor area. According to the data available for 1971 (census data), one out of every ten houses in Sri Lanka had a floor area of less than 100 square feet. Nearly three quarters of all homes, 72 %, had less than 500 square feet of floor area.* The average Sri Lankan home in 1971 was indeed modest in size with average floor area of about 500 square feet. Combined with the occupancy of 5.7 persons, it is evident that the 1971 per capita space was less than 80 square feet per person. Given the decline in average occupancy, even if the size of the average home remained the same, by 1981 per capita space would have increased. A reduction in the proportion of smaller homes is expected. When survey data from the Labour Force and Socio-Economic Survey of 1980/81** are examined, it is observed that the proportion of households that occupied homes of

* Nearly one out of every three homes was between 100 and 250 square feet. Therefore, the median floor area would have been nearly 400 sq. ft.

** Department of Census and Statistics.

less than 100 square feet was only 5.2 per cent. The proportion of homes with this floor areas is not expected to be very different. Therefore, by 1981, the floor space of the average Sri Lankan home is expected to have increased.

Number of rooms

Shelter, however, is not only a matter of floor space. The quality of the shelter and its organisation within the housing unit are expected to play an important role in determining the quality of the shelter service. The average number of rooms increased during the 1971-81 period from 2.24 in 1971 to 2.47 in 1981. This implies an increase in the average for new homes as well as an increase for existing homes through expansion and upgrading.

In order to assess this outcome, the 1981 stock can be considered in terms of 1971 equivalents, that is, the 1981 stock can be transformed to one with the same average number of rooms as the stock of 1971. The result is that the net additions and improvements to the stock are equal to 882,000 homes of 1971 average size, although the actual additions to stock amounted to only 594,000 homes. If we assume that the replacements had the same number of rooms, then the addition to the stock has an *average* of 3.33 rooms per unit. It is difficult to conceive of the component of additions having a significantly higher average than the existing stock. This increase in the average number of rooms, therefore could not have been due exclusively to the larger homes added to the stock during the period 1971-81.

The major portion of the increase in the average number of rooms is expected to have come from net additions and replacements. Additions to existing homes are expected to be primarily a phenomenon associated with those built with durable materials. During the 1971-81 period the proportion of homes, with one or two rooms had decreased from 68% to 63% of the occupied stock. This was almost entirely due to a reduction of one-roomed homes. The increase in the average number of rooms for the entire nation and the different sectors is apparent from the figures in Tables 2 and 3. However, it is necessary to keep in mind that a significant proportion of the stock did not have a stated number of rooms in 1971.

In 1981, close to two-thirds, 63.1 %, of the occupied houses had at most two rooms. Therefore, it is most likely that a large proportion of the demand for new housing will continue to be for units with one or two rooms. However, it should be noted that during the 1971-81 period, the proportion of the occupied stock with more than four rooms had increased. A part of this increase would have been the result of the addition of rooms to existing houses.

TABLE 2
DISTRIBUTION OF THE OCCUPIED HOUSING STOCK BY NUMBER OF ROOMS AND SECTOR, 1971

Proportion in Percentages

<i>Number of Rooms</i>	<i>Urban</i>	<i>Sector Rural</i>	<i>Estate</i>	<i>Total</i>
1	34.6	29.6	74.2	35.3
2	29.4	35.4	17.3	32.5
3	16.7	19.3	4.1	17.2
4	9.6	9.0	2.0	8.3
5 or more	9.7	6.7	2.4	6.7
All	100.0	100.0	100.0	100.0
Unspecified +	8.6	3.7	4.4	4.7
Average Number of Rooms	2.39	2.32	1.44	2.24

Source : Department of Census and Statistics, 1973 (2).

Note : The proportions relate only to the stock with number of rooms specified.

+ This is the percentage of occupied homes without a specified number of rooms.

TABLE 3
DISTRIBUTION OF THE OCCUPIED HOUSING STOCK BY NUMBER OF ROOMS AND SECTOR, 1981

(Proportion in Percentages)

<i>Number of Rooms</i>	<i>Urban</i>	<i>Sector Rural</i>	<i>Estate</i>	<i>Total</i>
1	30.8	28.0	56.8	30.8
2	29.2	33.3	29.6	32.3
3	18.4	18.7	7.7	17.8
4	10.6	10.5	3.1	9.9
5 or more	11.0	9.5	2.8	9.2
All	100.0	100.0	100.0	100.0
Average Number of Rooms	2.6	2.5	1.7	2.47

Source : Department of Census and Statistics, 1982 (1).

Structural classification

The materials with which a house is constructed affect the quality of the shelter service it provides. The occupied housing stock in Sri Lanka is broadly classified into three groups; permanent, semi-permanent and improvised, according to the materials of the floor, walls and roof.* By 1981, over two out of every five homes in Sri Lanka, 41.7%, was classified as a permanent one. However, more than half, 51.8%, still remained semi-permanent homes. Between 1971 and 1981 the number of permanent homes had increased by nearly 50%. The average annual rate at which permanent homes were added to the national stock had increased substantially from 3.1% during 1963-71 to 4.3% during 1971-81.

The major part of the increase in permanent homes had taken place in the rural sector. Clearly those government policies and investment programmes with a rural focus, are expected to have played a dominant role in promoting rural housing.

The semi-permanent stock increased by 14.6% during the 1971-81 period—an average annual growth rate of less than 1.5%. Meanwhile the stock of improvised homes increased by 12.3%—an average annual rate of 1.2%. Nearly all of the increase in improvised homes took place in the rural sector.

The change in the composition of the occupied housing stock during the 1971-81 period was due to the significant differences in the growth rates of the component parts. The growth rate of permanent housing was more than double that of both the semi-permanent and improvised occupied stock. *If the average annual rates of growth of the component parts of the occupied stock, observed during the 1971-81 period are maintained into the future, within eight years the proportion of permanent housing would exceed that of the semi-permanent stock.*

The actual growth would depend on the pattern of demand for housing which includes household income and its growth, the pattern of household formation, the nature of housing finance and

* Permanent houses are those with cement or wooden floor, cement/clay brick, cabook stone or wattle and daub walls; and clay tile, asbestos or metal sheet roofs. Houses with palm-thatched walls or those with wood or mud floor; wood walls and palm-thatched roof are classified as improvised and the rest as semi-permanent. (For a complete description of the classification see Housing Tables, Department of Census and Statistics, 1982, p. 16).



TABLE 4

DISTRIBUTION OF THE OCCUPIED HOUSING STOCK BY SECTOR AND TYPE, 1971 AND 1981

Sector	Housing Type	1971		1981	
		Number ('000s)	%	Number ('000s)	%
Urban	Permanent	264.8	62.9	346.6	68.0
	Semi-permanent	118.4	28.1	124.0	24.4
	Improvised	38.0	9.0	38.8	7.6
	Total	421.2	100.0	509.4	100.0
Rural	Permanent	492.7	31.6	776.4	37.2
	Semi-permanent	950.2	61.0	1,168.6	56.1
	Improvised	115.8	7.4	139.5	6.7
	Total	1,558.7	100.0	2,084.5	100.0
Estate	Permanent	28.5	12.0	51.0	23.4
	Semi-permanent	202.6	85.3	164.8	75.8
	Improvised	6.5	2.7	1.8	0.8
	Total	237.6	100.0	217.6	100.0
All Sectors	Permanent	786.0	35.4	1,173.9	41.8
	Semi-permanent	1,271.2	57.3	1,457.3	51.8
	Improvised	160.3	7.3	180.1	8.4
	Total	2,217.5	100.0	2,811.4	100.0

Source : Department of Census and Statistics, 1982 (1).

Note : Figures may not add because of rounding to the first decimal place.

the factors which affect housing supply. The changes in the composition of the stock would be the result not only of the net additions but also the upgrading of the existing stock and the type of replacements to the stock that would take place over time.

Materials of construction

Changes in the proportions of houses of different structural type were the effect of changes in the materials used for floor, walls and roof in the national stock. The distribution of houses according to the principal material of the floor had changed over the period 1971-81. The use of cement as a floor material had increased. The number of houses with such floors were almost equal to those with mud floors, 49.5%, compared, with 49.7% respectively. During the 1971-81 period cement-floored houses had increased by 42.2% while houses with mud floors had increased by only one-third as much, 14.4%. This differential increase resulted in the proportion of houses with cement floors increasing by 5.4% while those with mud floors fell by the same proportion.

A larger proportion of urban houses, 80.2 %, had cement floors ; compared with only half, 49.7 %, of rural homes and a quarter, 24.9 %, of estate homes. Non-urban homes moved rapidly towards cement floors during the 1971-81 period.

Between 1971 and 1981 the distribution of homes by principal wall material did not change very much. More than two-fifths, 44 % of Sri Lankan homes had wattle and daub walls. The proportion of such homes had fallen by 2 percentage points. Meanwhile, there was an increase of a similar magnitude in the proportion of homes with brick, stone or cabook walls. Homes with such durable wall materials increased by 36 %, a much larger increase than homes with mud walls, 20.9 %. However, homes with walls of palm-thatch also increased in number by 28.3 % and maintained their proportion of the national stock of 5 %. Wood as a wall material seemed to be losing ground and fell from 4.6 % to 3.4 % of the national stock.

In 1981, nearly one out of every ten urban homes, 9.8 % was made with wooden walls. Meanwhile, only 3 % of the rural homes used this material. Rural households may find wattle and daub cheaper than wood, while in the urban sector, wattle and daub may not be easily available.

Nearly three out of every five homes, 56.1 %, had a roof made with durable material; asbestos cement sheets, metal sheets or clay tile. Yet, the number of homes with a palm thatch roof remained large. Two out of every five homes had a palm thatch roof and the proportion had not changed during the 1971-81 period. Therefore, it is evident that palm thatch is a vital roofing material and will continue to be so into the future. However, asbestos sheets and clay tile were being used at a faster pace.

The movement towards durable roofing materials in the urban sector, indicated by the changed proportion of the stock in this category during 1971-81, was small. The stock with asbestos roofing increased much more rapidly than the other categories *When the 1981 occupied stock for the rural and estate sectors, taken jointly, is compared with that of 1971, the change in the proportion towards tile and asbestos sheets is observed to be more pronounced than in the urban sector.*

Amenities

Access to drinking water

The distribution of homes according to the source of drinking water had not changed much. The proportion of homes which depend on unprotected wells, rivers, tanks, etc., remained over one-fifth of the total, 27.8 %. The majority of such dwellings are in the rural sector. More than half the homes, 52.3 %, obtained drinking water from a protected well*, one-fifth, 20.8 %, from an unprotected well, less than one-fifth, 17.3 %, had access to piped water, while the remainder, 7.0 %, obtained water from a river or tank. In 1971, the proportion of homes which had access to piped water was somewhat higher than in 1981, 20.1 % compared with 17.3 %. During this period the proportion of homes which obtained drinking water from a well, increased from 68.8 % to 73.1 %.

In terms of absolute numbers, however, homes with access to pipe-borne drinking water increased by 9.2 %, while those with access to wells increased by 34.7 %. Homes depending on other sources declined in absolute number. Within the general category of homes with access to piped water is the sub-category of homes with the service within the home premises. In 1981 only 8 % (out of a total of 17.3 %) of the total housing stock fell into this sub-category. The absolute number of units with piped water within the premises had declined by as much as 17.9 %. This was due primarily to the reduction (of 49.5 %) in the number of homes with piped water on the premises, in the estate sector. This sector had the largest share of homes with piped water on the premises in 1971, 46.6 %. However, by 1981, its share had fallen to 27.9 %.

The number of homes with an unspecified source of water increased in all sectors. The increase in such homes was very sharp in the estate sector, from 2.5 % of the 1971 stock to 8.7 % of the reduced 1981 stock.

When the numerical changes in the type of toilet facility are examined, very large changes are observed in the different categories for the entire occupied stock as well as in the component

* The term "protected" as used in the census refers to wells with a protecting wall, and not to covered wells.

sectors. The type of change is such that it is quite possible that the categories may have been incorrectly specified during either the 1971 census or the 1981 census. Therefore, the comparison of the 1971 and 1981 data should be treated with caution.

More than half, 52.7 %, of the urban occupied stock in 1981 was served by flush or water-seal toilets. The corresponding proportion for both the rural and estate sectors was much smaller in comparison, 19.6 % and 29.1 % respectively. In the rural sector, more than one out of every three occupied units had no toilet, while 43.5 % had access to a pit toilet. The proportion without toilets was not as high, both in the urban and estate sectors—16.4 % and 28.1 % respectively.

The high proportion of homes without toilets was spread over the different structural types (permanent, semi-permanent and improvised). This inadequacy was not acute for the improvised stock where 73.2 % were without toilets. However, as much as 10.2 % of the permanent and 42.4 % of the semi-permanent houses were without toilet facilities.

Principal type of lighting

Kerosene lamps remained the principal means of lighting homes in 1981. More than four fifths of the homes, 82.4 %, used kerosene lamps. Meanwhile nearly 15 % were lit with electricity. Although the proportion lit with electricity was small, there had been a noticeable shift since 1971 when less than 10 % of the houses had electric power. The number of houses with electric power had more than doubled; it increased by 110 %, while homes lit with kerosene increased by only 16.6 %.

The majority of the homes lit with electricity were permanent structures—95.2 %; and located in the urban sector—56 %. It is useful to note that one of the factors which determine the urban status of an area is the access it has to electricity. Although various rural electrification schemes are bound to have had an impact on the access of rural houses to electricity, the very high proportion of houses without electricity in this sector will still dominate the aggregate data.

Tenure of occupied housing

By 1981, more than two-thirds of the housing stock was owner-occupied. The proportion had increased by 6.1 percentage points since 1971. Rented or leased homes accounted for 10.1 % of the 1981 stock, a slight decrease from 1971. In the urban sector, the proportion of rented houses was much higher than in the other sectors 28.6 %, compared with 6.5 % and 1.3 % for the rural and estate sectors respectively. The proportion in the urban sector had fallen steeply from 41 % in 1971. The majority of the estate sector houses, 79.0 %, are occupied free of rent, but the proportions had fallen from 88.7 % in 1971.

Rate of occupancy

During the 1971-81 period, the proportion of the stock with eight or more occupants decreased from about one-quarter to under one-fifth for the entire country, and the average occupancy rate fell from 5.6 to 5.2. This was the effect of the difference between population growth and housing growth during this period. The absolute number of houses with eight or more occupants decreased by 10.2 %. Therefore, the growth of housing is expected to have resulted in a substantial reduction in crowding.

In 1981, more than two-fifths, 43.3 %, of the nation's stock were occupied by at most four persons; the corresponding proportion in 1971 was 37.6 %. The number of houses with such occupancy increased by 46 % during this time.

The average number of occupants differ for houses of different structure classifications. Permanent houses have a higher occupancy rate than the others. This pattern was maintained during the 1971-81 period. In the non-estate sector, the difference in the average occupancy rate is much larger than in the estate sector. Sectorally, the occupancy rate is higher for the urban sector, and in terms of structural type it is higher for the permanent type. This is directly linked with the higher average number of rooms, 2.6 for the urban sector, compared with 2.5 and 1.7 for rural and estate sectors respectively—3.3 for permanent homes, compared with 1.9 and 1.4 for semi-permanent and improvised houses.

Multi-household occupancy

The proportion of the housing stock occupied by more than one household, fell from 7.6 % in 1971 to 4.8 % in 1981. In general such households would include more than one nuclear family. A group of persons who cook together is considered a household for census purposes. (See Department of Census and Statistics 1978, Appendix 2, p. 22-24). On the basis of this definition it is most likely that in the Sri Lanka context, the majority of the houses which are shared are those that are not formally separated into more than one living unit but accommodate separate households together. Meanwhile, a household might consist of more than one family.

In the urban sector, the proportion of houses occupied by more than one household was larger than in the rural or estate sectors. In 1981, 7.5 % of the urban houses were shared, the proportion declining by 1.5 % since 1971. In the rural sector this category was only 4.6 %. In the 1971-1981 period it had declined by 2.9 %. The sharp decline in the estate population helped reduce sharing by 5.4 %, and by 1981 only 2.1 % of all estate houses were shared. In all three sectors more than four-fifths of the shared houses were occupied by two households.

Vacancy rate

At any given point in time, a portion of the housing stock remains vacant or unoccupied. Houses will be vacant, among other reasons, during repairs, while awaiting sale or rental or owing to seasonal occupation. The vacancy rate is the proportion of the stock which is unoccupied at a particular time and is an indicator of the balance between demand and supply of houses. The vacancy rate for the total stock of housing decreased from 6.9 % in 1971 to 3.9 % in 1981.

Because the housing stock consists of houses of different structural types with different amenities at various locations, there is no single housing market but many markets. Identifying the markets clearly and examining their structure is beyond the scope of this discussion. However, for analytical convenience it is assumed that the different sectors, urban, rural and estate and the three

structural types of housing define separate housing markets. In 1971, of a total of 164,000 vacant houses, 38.0 % were seasonally unoccupied while only 14.9 % were for sale or rent. Four out of every five vacant houses were in the rural sector. The number of houses available for sale or rent was a small proportion, 1.5 % of all owner-occupied or rented houses. Even if all the houses under repair are assumed to be available for sale or rent, the vacancy rate would not be more than 2.5 % for the stock of houses of these two tenorial forms.

The number of houses which were vacant at the time of the 1981 census was 114,000 for all structural types, a decline from the 1971 level. Information on the reasons for being vacant was not available for 1981. If it is assumed that the proportions of vacant stock according to the reasons for vacancy did not change during the 1971-81 period, the vacancy rate would have fallen in most housing markets.

In 1981, two out of every three vacant houses were not classified according to the structural type. The vacancy rate for the classified experienced a sharp decline during the 1971-81 period. If all the unclassified houses are included in the semi-permanent category of vacant houses, the 1981 rate for this category is lower than the 1971 rate. This pattern is however reversed if the unclassified houses are considered permanent houses.

The vacancy rate and its changes have to be considered within the particular context of Sri Lanka. The major portion of occupied housing stock is owner-occupied. Such housing is constructed through a direct arrangement between the owner and a small contractor in the case of permanent houses and built with self-help labour in other cases.

Private developers supply only a small part of owner-occupied houses. The period of occupancy may average between 15 to 20 years for owner-occupied houses of various structural types. A large part of the owner-occupied stock circulates within family groupings without entering the market for sale or rent. For all these reasons the rate of vacancies for owner-occupied houses is bound to be quite low.

The small vacancy rate and its decline during the 1971-81 period implies a tightening of specific housing markets, particularly

the market for rented houses. A low vacancy rate in rental markets implies longer waiting time and perhaps rising rental prices in spite of rent controls. The decline in the vacancy rate for particular types of rental houses may imply a change in the search behaviour of renters. Because the renter and owner-occupied housing markets are interrelated, the difficulty of finding suitable rental units (a low vacancy rate implies limited choice) may result in households doubling up, extended families occupying a single home which in turn may strengthen the incentive to build a house.

The low vacancy rates in different markets may also be the result of high opportunity costs associated with vacancy. Nevertheless, vacancy rates are the result of the manner in which supply and demand for particular housing services interact in different markets. A decline in the vacancy rates implies an increased opportunity cost as a result of demand growing at a faster rate than the supply.

The decline in the overall vacancy rate by itself is however, not particularly significant. During the 1971-81 period, the proportion of owner-occupied houses in the total occupied stock increased. There has been a considerable contraction of the rental market. This was due to transfer of ownership through legislative means, and the increase in the rate at which owner-occupied houses were being added to the stock.

Estimating upgrading of the stock

The census report for the years 1971 and 1981 provide information about the size and composition of the housing stock for those two years. Comparison of the two stocks and their associated characteristics indicate the changes that occurred during this period. The changes are the outcome of a complex process of housing activity. The numerical increase in the stock, is the result of the net effect of new construction and losses to the stock owing to demolition. The characteristics of the stock in terms of structural features and associated amenities change as a result of new construction, upgrading and improvement, while units are withdrawn from the stock.

How the different components of the housing stock get upgraded, improve and replaced, what this process is and how it takes

place warrants careful enquiry. It may very well be that old permanent houses are not usually replaced with completely new houses of the same classification but are repaired and modified over time. In the case of semi-permanent houses, especially the wattle and daub houses, deterioration over time may necessitate complete reconstruction. If an old permanent house is repaired and upgraded it may still be recorded as an old house, while in the case of a semi-permanent house the extent and type of the repairs may result in it being recorded as a new one.

The upgrading and improvement which is not clearly reflected in the aggregate data may amount to a substantial volume of incremental housing investment. The way in which households maintain, adjust and improve the services obtained from a home, as income and the number of occupants increases, needs careful study. Maintenance of the stock already in place helps keep the flow of housing services constant, while improvements and upgrading increase this flow. Repairs, improvements and upgrading are important factors which regulate the flow of services from a housing stock. The processes which result in the change are not directly observed. However, a careful analysis of the aggregate data provides an indication of the processes which lead to the change in the stock. The following discussion relates to the occupied stock.

The total stock and changes during 1971-81

During the census period 1971-81, the total stock of homes increased by nearly 594 thousand units¹. When the 1981 stock is examined, it is observed that the volume constructed before 1971 that remained was 1.74 million units. Therefore by 1981, over 300 thousand units of the 1971 stock, were retired from the stock owing to various reasons.

If the calendar time between the two censuses is taken to be 9.5 years, this would mean that an annual average of over 31,000 housing units were retired from the 1971 stock during this period.

1. However, over 122,000 units of the 1981 stock had an unstated vintage. If it is assumed that this entire volume was also of pre-1971 vintage, by 1981 then about 1.86 million of the 1971 stock remained. However, the 1971 stock contained units constructed up to the time of the census which was taken in October of that year. If it is assumed that the 1971 construction was equal to the annual average of the houses constructed between 1971-81, an estimate of at most another 50,000 units would have to be added to the total of 1.86 million units in order to arrive at the estimated volume of units constructed prior to the 1971 census (held in October) which remained in the national stock by the time of the census of 1981.

The implied average annual rate of retirement of the 1971 stock is therefore about 1.5 %.¹

If the entire stock of unstated vintage given in the 1981 census, i.e., 122,000 units is assumed to have been constructed after 1971, then the volume of units constructed before then and remaining in 1981 would be smaller and the average annual rate of retirement or depletion higher than 2.2 %.

TABLE 5
THE TOTAL STOCK AND CHANGES DURING 1971-81
(in thousands)

	1971 Stock	1981 Stock	Stock Change 1971-81	Cons- truc- tion*	1971 Stock Standing in 1981	Deple- tion Stock by 1981
No. of Units	2,217.5	2,811.4	593.9	895.6	1,915.8	301.7

Source : Computed from Department of Census and Statistics : *Housing Tables : Based on a ten per cent sample*, June 1982.

* The 122,286 units with unstated vintage in 1981 are assumed to have been constructed before 1971. The 1971 stock included 9 months of that calendar year. To arrive at the estimate of the stock of 1971 which remained in 1981, 50,000 units assumed to be the number of units built up to the census in 1971, are added to the stock of vintage 1970 or before in 1981.

Change in the composition of the stock

The stock is divided into three broad structural categories, permanent, semi-permanent and improvised, according to the principal materials with which the floor, walls and roof of the individual units are constructed. The rate of depreciation for the three components would be different. The replacements needed for the stock would change as the composition of the stock changes over time. Meanwhile, the composition of the stock would change due to the rates of replacement, construction and upgrading.

Particular types of structural improvements result in units being upgraded from one category to another. For example, a brick walled, clay tiled unit with a mud floor, would change from a semi-permanent to a permanent unit, when the floor is changed to cement. Although such improvements do not result in a change in the total stock, they change its composition. A careful examination of the stock and its composition for the years 1971 and 1981, and the construction which took place during this period, enable us to set

1. The rate would be higher if the 1971 construction was lower than 50,000 units and if a part of the stock of unstated vintage in 1981 was in fact constructed before 1971.

limits to particular types of housing activity. The data enables the assessment of only those processes which result in a change in the number of housing units.

Between 1971 and 1981, the permanent component of the housing stock increased by 388,000 units. This accounted for about two-thirds of the change in total stock. However, the estimated construction during this period was only about 240,000 permanent units.

Meanwhile in 1981, the stock of permanent houses stated to have been built before 1971 was about 933,000 units; larger than the stock which was in place in 1971. This means that at least 147,000 units entered the permanent category through upgrading. It is most probable that this was the result of semi-permanent units being upgraded to the permanent category. If there were withdrawals from the stock of permanent houses, the volume of upgrading would have been larger.

TABLE 6
CHANGES IN THE COMPONENTS OF THE HOUSING STOCK 1971-81

	1971 Stock	1981 Stock	Stock Change 1971-81	Construc- tion	1971 Stock Standing in 1981	Depletion of 1971 Stock by 1981
P ..	785.9	1,174.0	388.1	240.6	933.4	147.5
SP ..	1,271.2	1,457.3	186.1	531.3	926.0	-345.2
I ..	160.3	180.1	19.8	123.7	56.3	-104.0
T ..	2,217.4	2,811.4	594.0	895.6	1,915.70	-301.7

Source : (See Table 5)

Notes : P = Permanent; SP = Semi-permanent; I = Improvised; T = Total

Although the total loss of the 1971 semi-permanent stock was about 345,000 units, a substantial number of semi-permanent units built prior to 1971 and now converted to permanent structures, were still in the national stock.

Over 531,000 semi-permanent units are estimated to have been constructed between 1971 and 1981. This accounted for nearly 60% of the total volume of construction during this period. The change in the stock of semi-permanent homes was only about 186,000 units. The volume of units constructed during this period

would have replaced the loss to the stock, owing to upgrading as well as deterioration and demolition. As estimated earlier, the upgrading of semi-permanent houses amounted to approximately 147,000 units. Therefore at least 198,000 semi-permanent houses would have been retired from the 1971 stock by the year 1981. This number would be more if the upgrading of improvised houses into the semi-permanent category is also taken into account. Through a similar reasoning, at most, about 104,000 improvised houses built before 1971 were retired from stock by the census of 1981. This implied that the rate of depletion of the 1971 semi-permanent and improvised stock would have taken place at average annual rates of, at least, 1.8 % and a much higher 10.3 % respectively.

However, if the total loss to the 1971 semi-permanent category of the stock is taken into account, the annual rate of depletion of the semi-permanent stock changes from the estimated figure of 1.8 % to 3.3 %. We could set limits to the estimated changes, in the size of the housing stock and its components, with the aid of simple algebraic expressions. The results are presented here. The reader interested in the method is directed to Appendix I.

TABLE 7
ESTIMATES FOR VOLUMES
OF UPGRADING AND LOSS TO STOCK, 1971-81
(in '000 of units)

	<i>Maximum</i>	<i>Minimum</i>
Upgrading (U)		
Semi-permanent to permanent—Up	448.5	147.5
Improvised to semi-permanent—Usp	104	0
Loss Due to Demolition or Retirement—D		
Permanent—Dp	301.7	0
Semi-permanent—Dsp	301.7	198
Improvised—Di	104	0

Note : (Dp — Dsp) > 198

Another very important type of home improvement is the addition of rooms. This provides increased accommodation without a resulting increase in the number of houses. This is illustrated in the change in the average number of rooms for the urban sector permanent housing stock, which increased from 2.68 in 1971 to 3.05 in 1981. If it is assumed that the 1971 stock had no addition of rooms, and replacements to the stock were 1971 equivalents in

terms of the number of rooms, then it implies that the additions to the stock had an average of 4.23 rooms. This does not seem plausible. What is more likely to have happened is that a significantly large proportion of the houses belonging to the stock in place had rooms added to them.

The volume of upgrading estimated above refers only to particular types of improvement related to the materials of the structure. Besides upgrading which results in a change in the structural classification many other forms of upgrading and improvement take place. Water service, toilets and kitchens are improved, fences are built, the site is improved by excavation or land fill, which all result in better housing services.

Measuring the rate of transformation of the housing stock

The previous section examined a feature of the numerical changes in the stock and its three structural categories. Besides housing activities which increase the stock or change its composition (in terms of the structural categories) there are capital investments in housing which result in improvements to the flow of housing services. Space is added to existing units through expansion, services are upgraded, quality of the structure is improved. These capital investments do not result in a numerical increase of the housing stock. The three clusters of characteristics, structural quality, space and amenities change over time. Each of these clusters can be examined and the rate at which the housing stock transforms relative to the various characteristics derived from the aggregate data. The relative rate of transformation (RRT) becomes a convenient indicator that can be used to monitor the housing stock and its changes over time. In addition to this it also enables the assessment of the time span within which changes in particular characteristics can be effected.

During a given period of time a particular characteristic of the housing stock changes, for example the number of houses with tiles or asbestos roofing. This is the result of new construction, upgrading and retirement from the stock. The rate of growth of the stock with such roofing materials relative to the total is the RRT associated with roofing materials in a particular context of

change. Clearly, the rate of growth of units with tile or asbestos roofing is related to the rate of growth of the total stock. The concept can also be applied to other features of the housing stock in the following manner. One principal assumption of this method is that the relative rates of growth and transformation of the total stock relative to the number of units with particular characteristics remains the same. The derivation of the expressions is in Appendix II.

The time taken N , in years, for the proportion of the stock with characteristic j , (for example permanent housing) to change its present state K_{JT} to an improved state as specified K_{JN} at a relative rate of transformation RRT is given by the expression :

$$N = \frac{\text{Ln} (K_{JN}/K_{JT})}{\text{Ln} (RRT_J + 1)} \dots \dots \dots (s)$$

Ln is the natural logarithm the value of K_{JT} is the proportion of the stock with characteristic j in the initial year t , and is known. K_{JN} is the targetted proportion of the housing stock with the relevant characteristic and RRT_J is derived from the rates of growth of the total stock R_t and the component stock R_j

$$RRT_J + 1 = \frac{1 + R_j}{1 + R_t}$$

If we assume that the rate of growth of the stock with a particular characteristic is independent of the rate of growth of the total stock then N is the time taken for K_{JT} to reach K_{JN} at a particular RRT . Conversely RRT gives the rate necessary to effect a particular transformation within a specified period of time.

Using this method and the expression (S) the RRT and N values are calculated for a few characteristics of the housing stock of Sri Lanka. Based on the calculations presented in Table 8 we note that at the current rates of transformation (average for 1971-81 period) the time taken to effect particular changes would be inordinately long. Clearly the average transformation rates for the 1971-81 period mask possible acceleration during the latter stages. If this were so the time needed for a given transformation may change. For instance it may take 34 years for the proportion of permanent housing units in the total housing stock to increase from the present 41 % to 75 %. if the present trends continue. Similarly

a proportion of 75 % of the housing units with cement floors will take 56 years and a proportion of 50 % with permanent roofing 27 years. In the case of walls, it may take as long as two and a half centuries for three quarters of Sri Lanka's growing housing stock to have brick and cabook (adobe like laterite clay) stone walls.

TABLE 8
RELATIVE RATES OF TRANSFORMATION (RRT) AND N FOR
OCCUPIED STOCK OF SRI LANKA

Characteristics	<i>Kt in</i> 1981	<i>Kn</i>	RRT ¹	<i>N</i>
Permanent structure	0.418	0.5	1.74	10
	0.418	0.75	1.74	34
	0.418	1.0	1.74	51
Brick and cabook walls	0.477	0.75	0.18	248
	0.495	0.75	0.74	56
Cement floor	0.445	0.50	0.43	27
Tile or asbestos roof	0.692	0.75	0.43	19
Two or more rooms	0.267	0.50	2.55	25
Flush or water-seal toilets	0.173	—	— 1.53	—
Piped water ²				

- Note : 1. RRT values are calculated from the rates observed during the 1971-81 period.
2. In the case of piped water the stock with this characteristic grew slower than the total stock resulting in a negative RRT. This means that the share of this unit access to piped water would fall if the 1971-81 trend continues. In fact, in 10 years the share of the total stock with piped water would fall to under 15%. Because of the different *Kt* and RRT values, the time taken to effect similar transformation would be different in the three sectors.

The RRT in the urban sector for the permanent stock is 0.83 %, while in the rural sector it was over double the rate with 1.74 % Nevertheless, (because *Kt* is highest while RRT is lower for the urban sector) it would take about 12 years for the urban stock to be 75 % permanent, while it would take about 40 years for the rural sector to have a similar permanent proportion. Time periods assume that the rate of urbanisation would remain constant at the average rate observed for the 1971-81 period. Through this method, a broad idea of how long it will take to transform the stock at particular relative rates is obtained. The different time spans indicate the nature of the task in order to effect faster transformation.

An Index of Housing Quality for Sri Lanka

The various changes that have occurred in the housing stock and some of its principal features can be examined with the aid of an index. As in the case of all indices, the existing conditions are related to a particular base. Housing quality can be related to three

clusters of housing quality characteristics. They are structural quality, quality of amenities and the quality of housing space. In the case of housing space, the number of rooms per person is considered a measure of a principal aspect of space quality. The organisation of housing space into rooms and the number of persons per room capture the quality of housing while taking into account the effect of crowding. The quality norms considered are listed below :

Structure

Wall materials	..	Cement or clay brick, stone or cabook.
Floor materials	..	Cement
Roof materials	..	Clay tile or asbestos sheets.

Amenities

Water supply	..	Piped water or protected well on premises, with the component of sharing removed.
Toilet facilities	..	Flush or water-seal toilet for exclusive use.

Space

Number of occupants per room	..	The average number of occupants per room as 1.67; that is 3 rooms for a house with 5 occupants.
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The three components, structure, amenities and space are given equal weights and within the amenities category, the different elements are also given equal weights. In order to construct the index, the proportion of units with the specified features are obtained from the data on the stock. The number of occupants per room is also calculated from census data. The index is a percentage based on the specified features. In the case of the structure, the proportion of the stock with all three features occurring simultaneously is calculated. This is done by using the definition of the permanent category and the data on the structural materials given separately. The stock having the specified floor, wall and roof characteristics would necessarily be permanent units. Therefore, the desired proportion can be computed from data on the proportions of the permanent stock with the individual structural characteristics. The index for the stock of a given year is computed in the following manner :

$$HQI = (R_{sm} + R_a + R_{sq}) / 3$$

R_{sm} is the proportion of the stock with cement floor, brick stone or cabook wall, asbestos sheet or clay tile roof

R_a is 1/2 (proportion of stock with piped water or protected well for exclusive use—proportion of stock with flush or water-seal toilets for exclusive use)

R_{sq} is the number of occupants per room for the total stock as a proportion of the ideal value

Applying HQI for 1971 and 1981

The data for the years 1971 and 1981 enable the computation of HQI for a modified set of quality norms. In the case of structural quality, a close approximation to the norm is the proportion of the stock which is permanent, and having the specified wall materials. The definition of the permanent category implies that all three components of the structure are permanent. However, permanent materials include wattle and daub for walls and metal sheets for roofing. The proportion of stock which is permanent and with brick or cabook walls would be almost equivalent to the desired proportion. The component of sharing for water service could not be taken out for the 1981 stock; while in 1971 the distinction between protected and unprotected walls was not possible. Therefore, for 1981, the proportion of the stock with access to piped water or protected wells within the premises and all wells exclusively used was considered. For space, the average number of occupants per room for the permanent urban stock in 1981 was the norm.

TABLE 9
HOUSING QUALITY INDEX FOR TOTAL STOCK
1971 AND 1972

			1971	1981
i. Structure quality index	..	..	29.0	36.3
Amenities—				
Water	..	..	37.91	33.8
Toilet	..	..	14.2	21.3
ii. Amenities quality index	..	..	26.0	27.5
iii. Space index	..	..	64.0	79.4
Housing Quality Index	..	..	39.7	47.7

Source: Computed from Census Data for 1971 and 1981.

Note: 1. Protected and unprotected wells used exclusively were taken instead of protected wells on the premises. The data available precluded the use of a similar category of water service for 1971 and 1981.

Using the index values it is seen that the HQI increased by 20% between 1971 and 1981. The greatest increase was in terms of structural quality, a 25 % rise between 1971 and 1981. An almost similar increase is shown for space quality. The access to amenities did not improve very much according to the index. The higher increase of the structural quality index compared with the increase in the permanent proportion of the stock 25 to 18 % is due to the decline in the proportion of permanent homes with mud walls between 1971 and 1981.

Conclusions

Modest Improvements in the National Housing Stock

During the intercensal period 1971-81 there was both a quantitative and qualitative improvement in the occupied housing stock. The housing stock grew faster than population resulting in a decline in the average number of occupants per house. However, the demand for housing seems to have grown faster than the supply in some housing markets. As a result, the vacancy rate declined sharply for different categories of the stock.

Nearly two out of every three houses added to the stock during this period was a permanent unit. Because such units were added to the occupied stock at a faster rate than semi-permanent ones, the proportion of permanent houses in the total stock increased by over 6 percentage points. If the different types of houses continue to be added to the occupied stock at the same rates observed for the 1971-81 period, within the decade of the eighties, the permanent occupied stock would be larger than the semi-permanent occupied stock.

Housing Improvement Through Upgrading

During 1971-81, the actual construction of semi-permanent houses was more than double that of permanent houses. There is strong evidence that a significant volume of upgrading had taken place and resulted in about 150,000 semi-permanent houses being elevated to the permanent category. A large proportion of the semi-permanent houses which were constructed were replacements for those which had deteriorated beyond repair. The available evidence also suggests that the rate of replacement of permanent housing is

very low compared with semi-permanent housing. This means that the maintenance and upgrading of the permanent stock is much more important than replacements. This is a very different situation from that of semi-permanent housing.

The changes in the stock of occupied housing and its components by structural type had a different impact in the three sectors, urban, rural and estate respectively. The rate of growth of both population and housing units was fastest in the rural sector. The growth of permanent homes was also faster in that sector.

In terms of the aggregate indicators, the 1971-81 period had seen improvement over the previous intercensal period. Houses were being built and occupied at a faster rate, structures classified as permanent were growing more rapidly than other types and occupancy rates had fallen. The increase in the proportion of permanent houses in 1981 compared with 1971, was the result of upgrading and improving the floor, walls and roof materials of existing houses as well as building a greater proportion of houses with more durable materials.

The Physical Environment

The available data indicate that a substantial volume of upgrading of houses had taken place during the 1971-81 period. Besides the upgrading of the materials of the floor, roof or walls that changed the structural classification of a house, addition of rooms, conversion of garages, porches and passages into rooms, improvements to the kitchen, toilet, and interior finish would have taken place. Meanwhile, the average number of rooms per occupied house increased implying increased per capita space and better organisation of space within houses.


Change in Amenities

The services available to a house showed a slight improvement during this period. The access to piped water within the premises declined, primarily because of a steep reduction in the number of homes with such a facility in the estate sector. In the other two sectors there was an increase in the homes with this facility. In the rural sector there was a noticeable shift from rivers and tanks to wells as the primary source of drinking water.

Nearly one out of every three occupied houses did not have access to a toilet. In the rural sector a little more than one-third of the occupied houses had no toilets, while in the urban sector, the corresponding proportion was only half as large. The lack of toilet facilities implies a different inconvenience in the urban sector compared with the rural sector. The high proportion of houses without toilets was the most serious inadequacy of the quality of the residential environment and warrants a concerted effort to provide access to low-cost and appropriately-designed toilets. Given the economies of scale that may result in supply of both water and toilet facilities, public action is desired in this area.

Even though the growth of the occupied stock outpaced population growth, the aggregate data mask the changes that may have taken place in the physical environment of residential settlements. For instance, the increase in the number of shanties, most of them semi-permanent houses, in a squatter settlement is not simply an increase in accommodation or shelter and other housing services. The congestion owing to the increased density may have resulted in a deterioration of the neighbourhood. More noise, more garbage, less vacant space would have accompanied the increased number of houses.

Therefore, the general indicators of improvement in housing have to be viewed in the particular context within which such changes took place. Some aspects of the bundle of housing services improved. The shelter service, both in terms of quantity and in terms of some qualitative aspects had improved. However, the amenities, access features associated with the house and other characteristics of the neighbourhood may not have improved in a similar way.



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CHAPTER 3

CHANGES IN THE SECTORAL HOUSING STOCK

Urbanisation and the Urban Housing Situation

Urbanisation

After the Second World War, urban growth and transformation in Sri Lanka has been relatively slow compared with that of most other developing countries. The share of the urban population in the total, increased from 20.5 % to 22.4 % during the 25-year period from 1946 to 1971, but declined to 21.5 % in 1981.

This slow rate of urbanisation can be attributed to factors such as the massive rural to rural shift of population from the densely-populated Wet Zone to the thinly-populated Dry Zone, the slow growth of urban economic activity and the dispersal of industries to various parts of the country. Other factors were the distribution of civic amenities, a package of subsidies and welfare measures covering nutrition, health, education and transportation which contributed to the lowering of regional disparities within the nation. All these combined to strengthen the retentive capacity of the rural sector, reduced the push effects which accelerate rural to urban migration and produced a rural-urban balance which is unique among developing countries¹.

The statistical picture presented by the various censuses does not completely capture dimensions of the urban situation and the pace of urbanisation in Sri Lanka. This is due to the lack of a clear and workable definition of the term "urban". The administrative and census definition covers all local government units which have been officially recognised as municipal councils and urban councils.

Jones and Selvaratnam point out that one of the consequences of vague definitions is that "clusters of population that would qualify as 'urban' according to definitions based on population

density, occupational structure or some other criteria may simply never have been granted urban status in administrative terms, and are therefore included in the rural population by the census."² To this extent there will be an understatement of urbanisation.

A study conducted by the Marga Institute in 1978³ has highlighted another feature in the pattern of urbanisation in Sri Lanka which demonstrates the inadequacy of the official definition of 'urban'. The improvement in the quality of life in the rural areas because of the dissemination of free and subsidised welfare services and the successive government's policy of decentralised administration has expressed itself, among other things, in a type of urban growth in small units where residents enjoy many of the amenities of urban life, although on a smaller scale than in the officially recognised towns. These units are often excluded from the sector officially classified as urban.

A further complication arises when an attempt is made to determine the trend of urbanisation in the country. The councils created during an intercensal period result in population classified as rural being shifted to the urban sector at the census which follows. This distorts the trend, giving the impression of accelerated urban growth whereas these localities had in fact been undergoing a slow process of urbanisation and acquiring the characteristics of the urban sector over a long period.*

The distribution of the urban population in Sri Lanka in 1981, indicates that more than 75% of the urban population is concentrated in five urban areas. Of these, Colombo and Gampaha contain the major share, accounting for more than half the Island's total urban population. About half the total urban housing stock in the

* The dimensions of the distortion become clear when we look at the 1963 census at which 15 new town councils with populations ranging from 2,000 to 33,000 which were created after 1953 were added on to and enumerated within the urban sector. Similarly, the 1971 census included a total population of about 420,000 in 37 new town councils set up after 1963. Some of these towns were earlier large suburbs of Colombo which for a long time had possessed characteristics of urban communities. Between 1971 and 1981, however only two new town councils were created.

country is in these two districts, Colombo containing by far the largest proportion amounting to nearly 40 %.

A significant feature in the pattern of urbanisation has been the comparatively faster rate of urbanisation in the North Central Dry Zone during the past three decades. With the establishment of new agricultural settlements, this sparsely-populated region began to develop rapidly and new administrative and commercial towns, began to emerge. Some of these have since grown into towns with larger populations than some urban centres in the thickly-populated Wet Zone. For example, Anuradhapura city which in 1953 had a smaller population than the Wet Zone district centres of Kalutara, Badulla and Ratnapura, has today surpassed them in size.

In this pattern of urban growth, the District of Colombo (which included the District of Gampaha up to 1977) maintained a rate of increase close to the national average. Its share in the urban sector has declined marginally during the period 1971 to 1981. Within the urban sector of Colombo and Gampaha there are, however, a few features which need to be underscored. The main urban expansion has been in the Colombo District, to the south west and south of Kelani river. The urbanisation north of the river had been relatively slow. The recent government initiative in locating two industrial Free Trade Zones in the Gampaha District may help to accelerate urbanisation in this region.

In the Colombo District itself, the main city of Colombo grew at a rate significantly less than the national average for the urban sector. Although the city proper did not experience rapid and continued population growth, the suburbs have expanded rapidly. Cheap transportation facilitated this process and a commuter population was formed. The relaxation of the 'residence within a seven-mile radius' rule around this time imposed on public sector employees also contributed to the movement away from the metropolis, and enhanced commuting into the city.

According to the available evidence, urban growth in Sri Lanka seems to be predominantly a feature of small and medium - sized

towns; those with under 10,000 persons and between 10 and 50 thousand persons. They are primarily in the Wet Zone close to Colombo and located inland rather than on the coast. The large towns seem to have reached sizes which suppress further rapid growth. In fact most of the towns (municipal councils) which experienced rapid growth during the 1963-71 period experienced notable reductions in the rate of growth during the 1971-81 period⁴.

The urban expansion which Sri Lanka has experienced has therefore not been dominated by the centripetal pull of a few large urban centres. There has been a dispersion of urban growth which is partly attributable to the combination of development policies and programmes to which we have referred earlier. These characteristics of the urban sector have an important bearing on housing, the revenue base, the provision of public utilities and amenities the planning and development of the urban infrastructure, the demand for land and the structure and designs for housing.

Apart from Colombo District which is predominantly urban (74.3), the urban proportions are highest in Jaffna (32.6), Trincomalee (32.4), Gampaha (27.8) and Batticaloa (24.0) in that order. It is in these districts that the more acute problems of urban planning and housing are likely to manifest themselves. For example, these are among the districts which have the highest components of rental housing and the lowest vacancy rates. They are also the districts in which urban land values have been rapidly escalating.

Changes in Urban Housing

It was observed that during the 1971-81 period there was a modest improvement in some of the characteristics of the occupied housing stock in the urban sector. (See Table 2). The stock increased at an average annual rate of about 2% from 421,155 units in 1971 to 509,459 units in 1981, and the vacancy rate fell from 4.8% to 2.7%. The permanent component grew much faster than the semi-permanent or the improvised components. The faster growth resulted in an increase in the share of permanent houses in the total occupied stock and improvement in the quality of the materials of construction.

TABLE 1

POPULATION OF SRI LANKA BY DISTRICTS AND SECTORS 1981

District	Total	Urban		Rural		Estate	
	No.	No.	%	No.	%	No.	%
Colombo ..	1,698,322	1,261,998	74.3	427,354	25.2	8,970	0.5
Kalutara ..	827,189	176,985	21.4	605,686	73.2	44,518	5.4
Kandy ..	1,126,296	147,436	13.1	848,365	75.3	130,495	11.6
Matale ..	357,441	37,908	10.6	289,050	80.9	30,483	8.5
Nuwara Eliya ..	522,219	37,866	7.3	171,696	32.9	312,657	59.8
Galle ..	814,579	168,120	20.6	625,579	76.8	20,880	2.6
Matara ..	644,231	71,547	11.1	552,607	85.8	20,077	3.1
Hambantota ..	424,102	41,416	9.8	381,205	89.9	1,481	0.3
Jaffna ..	831,112	270,601	32.6	560,476	67.4	35	0.0
Mannar ..	106,940	14,469	13.5	91,759	85.8	712	0.7
Vavuniya ..	95,904	18,511	19.3	77,393	80.7	—	—
Batticaloa ..	330,899	79,565	24.0	251,154	75.9	180	0.1
Amparai ..	388,786	53,603	13.8	335,183	86.2	—	—
Trincomalee ..	256,790	83,262	32.4	169,693	66.1	3,835	1.5
Kurunegala ..	1,212,755	43,898	3.6	1,157,937	95.5	10,920	0.9
Puttalam ..	493,344	61,774	12.5	428,611	86.9	2,959	0.6
Anuradhapura ..	587,822	41,675	7.1	544,649	92.7	1,498	0.2
Polonnaruwa ..	262,753	20,759	7.9	240,110	91.4	1,884	0.7
Badulla ..	642,893	51,478	8.0	430,071	66.9	161,344	25.1
Moneragala ..	279,743	6,048	2.2	265,067	94.8	8,628	3.0
Ratnapura ..	796,468	59,199	7.4	629,700	79.1	107,569	13.5
Kegalle ..	682,411	53,502	7.8	566,694	83.0	62,215	9.2
Gampaha ..	1,389,490	386,057	27.8	1,001,392	72.1	2,041	0.1
Mullaitivu ..	77,512	7,202	9.3	70,240	90.6	70	0.1

Source : Department of Census and Statistics, Census of Population and Housing 1981, Preliminary Release No. 1.

TABLE 2

CHANGES IN URBAN HOUSING STOCK (1971-1981)

	1971	1981
1. Stock	421,155	509,459
Structure	%	%
2. Permanent	62.9	68.0
3. Semi-permanent	28.1	24.3
4. Improvised	9.0	7.6
5. Tiled or asbestos roofs	60.4	64.0
6. Cement floors	78.6	80.2
7. Clay brick or cement walls	62.0	67.7
Amenities		
8. Piped water supply	45.3	46.5
9. Protected wells (within premises)	18.7	27.7
10. Flush and water seal latrines	42.0	54.5
11. No toilets	19.1	16.4
12. Electricity lit	34.5	45.9
Tenure		
13. Owner-occupied	47.7	57.3
14. Rented or leased	41.0	29.6

Source : Department of Census and Statistics, 1973. "1971 Housing Census All Island, Tables", Colombo, Sri Lanka and Department of Census and Statistics, 1982. "Census of Population and Housing, Sri Lanka, 1981. Preliminary Release No. 2".

The average number of rooms of the urban sector housing stock increased from 2.2 in 1971 to 2.6 in 1981. While the proportion of one-room houses fell from 34.6 % to 30.8 % the proportion of houses with three or more rooms increased by the same margin. However in 1981, two-room houses continued to account for 60 % of the urban stock and although the proportion had declined since 1971, it is most likely that a large share of the future urban demand would be for such houses. The decline in the share of one and two-room houses may have resulted from a higher proportion of larger houses in new construction as well as addition of rooms to existing houses.

The urban population grew slower than the occupied stock, resulting in a decline of the occupancy rate from 6.1 persons in 1971 to 5.8 persons in 1981. Combined with the increase in the average number of rooms, this decline implied an increase in the average housing comfort in the urban sector. If it is assumed that the floor area per room remained the same, then the increase in the average number of rooms and the decrease in the rate of occupancy implies an almost 25 % increase in per capita housing space in the urban sector. The increase in the average number of rooms and the decline in the occupancy rate for permanent, semi-permanent and improvised housing was such that per capita space increased by 20 %, 29 % and 23 % for the three respective categories.

Although the urban sector experienced an increase in per capita housing space, it is quite likely that, in particular urban settings, especially the larger urban centres of Colombo, Kandy and Jaffna the residential density increased.

In considering the conditions of occupancy we need to examine the extent of multi-households within a single housing unit. In the urban sector the proportion of housing units shared by more than one household stood at 7.5 % in 1981, a decline from 9.0 % in 1971. However, this was considerably higher than in the rural sector, where the proportion was 4.3 % in 1981. This is to be expected. First, the capacity of the urban sector to satisfy rising demand for new housing units is likely to be less, thereby leading to greater sharing of households and second, urban housing units are on the average larger and therefore better able to accommodate more than one household. If sharing of housing units is taken as an indicator

of unfulfilled housing demand, then we could conclude that the situation in the urban sector had improved during the intercensal period. We should, however, note that sharing of housing units need not always signify unsatisfied demand. Annexes and flats which do not go as separate units as well as large houses may provide accommodation of high quality for more than one household and the arrangements for sharing may be a voluntary choice of the households concerned.

Amenities

Water Supply

The number of occupied houses which obtained piped water for drinking increased by over 20 % during the 1971-81 period. However, the increase in the number which obtained water from taps outside the premises, mainly standpipes, was larger. The access to piped water varied across different urban concentrations. For instance, in the urban sector of Colombo District nearly two-thirds of the occupied stock had access to piped water for drinking. In urban Kandy District the proportion was much larger, 87 %, while in the Gampaha and Jaffna Districts the proportion was only one-fifth. Colombo city which accounted for more than 45 % of the district's urban population, had the major share of houses with access to piped water. However, in the city a significant proportion of households obtained water from communal standpipes.

Toilet Facilities

More than half (52.7 %) of the urban houses in 1981 had access to a flush or water-seal toilet. The proportion had increased since 1971, when it was only 42 %. However, 60 % of the improvised houses, 30.1 % of the semi-permanent and 6.5 % of the permanent houses in the urban sector, had no toilet facilities. Together, they accounted for 16.4 % of all the urban housing units. This is a high proportion for the urban sector; the lack of toilet facilities in densely inhabited areas is a serious health hazard which needs urgent attention. The variation in the access to flush and water-seal toilets was not as great among the urban sectors of Colombo, Gampaha, Kandy and Jaffna Districts as in the case of piped water. About two-thirds of the occupied houses in the Colombo urban sector

had access to flush or water-seal toilets. The corresponding proportion for Gampaha was about half while it was about 40 % for both Kandy and Jaffna. However, the proportion of this type of toilet that was shared by two or more families was higher in urban Colombo than in the other urban areas.

Lighting

There has been a significant increase in the use of electric lighting in urban homes. The number of units using electricity for lighting increased from 34.5 % in 1971 to 45.9 % in 1981. There was a corresponding drop in the number using kerosene from 64.9 % to 51.2 %. Only 4.6 % of the semi-permanent units and 3.0 % of improvised units were electrically lit. These homes predominantly used kerosene (92.4 % by semi-permanent and 93.0 % by improvised units). Among the permanent units 65.5 % in the urban sector have electricity, which is almost double the number for the whole Island (34.0 %). Districtwise, Colombo registers the highest percentage, with 43.7 % of the houses using electricity for lighting.

Tenure

Over a quarter of the urban occupied stock was rented or leased in 1981. The proportion has fallen sharply from 41.0 % in 1971 to 28.6 % primarily owing to the effects of the Ceiling on Housing Property Law. This law set limits on the number of houses a person can own. Successive legislation on rent control continued to discourage the supply of rental housing. A significant feature of rental housing in the urban sector is that the proportions were not very different for the three types of housing—permanent, semi-permanent, and improvised houses. They were 29.3 %, 28.3 % and 22.4 % respectively. The urban sector had a higher proportion of rented houses in total terms and in terms of the three structural types, than the rural sector. The proportion of rented houses is a special feature of the urban sector. However, this market contracted from 172,855 units in 1971 to 145,457 units in 1981. The number of permanent houses which were rented or leased in the urban sector fell by about 16 % during this period. As pointed out in Chapter 2 the major

reason for it was the conversion of rented units into owner-occupied houses owing to legislative changes enacted during the 1971-81 period.

The decline in the proportion of rental houses has a variety of effects on the urban housing situation. Given the nature of the urban sector, it is useful to provide the labour mobility and movement of persons in search of better work or living conditions. A dynamic rental market, (which in most cases implies non-public sector rentals) facilitates such movement. Meanwhile a rental market provides opportunities for productive investment for private individuals or companies. While protecting their capital, they have an incentive to upgrade and maintain.

There would be growing pressure for active rental housing markets in the future and it may be necessary to accommodate such a need. It is not possible simultaneously to have every household in an owner occupied home. At different stages of the life cycle, households may find it advantageous to rent. If the rental market is choked off by legislation arising from short-sighted or misplaced concerns, households are locked into a path of house ownership. Those willing to rent may not find appropriate houses and be forced to double up, or prepare to buy or build sooner than expected. Public rental housing in Sri Lanka and the reduction of rental houses through transfer of ownership has not contributed to more efficient housing.

Changes in the urban housing stock and implied processes

The reasoning developed in Chapter 2 is used here to analyse the underlying process which led to the change in the urban stock. However, the analysis does not take into account the changes in the stock that result from re-classification of the sectors. For example, the urban sector stock increased by a small volume as a result of two new town councils created between 1971 and 1981. The town councils which came into the urban sector by re-classification were part of the rural sector in 1971. Therefore, the stock figures contain the effects of urbanisation.

TABLE 3
THE URBAN STOCK AND CHANGES DURING 1971-81
 (in '000s units)

		1971 stock	1981 stock	Stock change 1971-81	Con- struc- tion*	1971 stock standing in 1981	Depletion of 1971 stock by 1981
P	..	264.8	346.6	81.8	56.9	287.7	+24.9
SP	..	118.4	124.0	5.6	36.9	87.1	-31.3
I	..	38.0	38.8	0.8	21.7	17.1	-20.9
T	..	421.2	509.4	88.2	115.5	393.9	-27.3

Source : See Table 13.

* Figures have been adjusted to the calendar period between the censuses.
 P = Permanent; SP = Semi-permanent; I = Improvised; T = Total

The net annual average rate of decline of the 1971 stock in the urban sector was only 0.7 %. The addition to stock through urbanisation would not have had a significant impact on the rate. In the urban sector, over 90 % of the change in the stock and nearly half the construction which took place during the intercensal period were permanent structures. Using the method described in Chapter 2, the following estimates for upgraded volume and changes in stock owing to deterioration are obtained. At least 25,000 urban houses were upgraded to the permanent category, most likely from the semi-permanent category. Meanwhile, the maximum volume upgraded from the improvised category (most likely to the semi-permanent category) would not have been more than 21,000 houses. The total volume of semi-permanent units retired from the stock would have been at most 27,000 units, a rate of retirement of 2.7 per year. This means that the average life expectancy of an urban semi-permanent house, under conditions which prevailed during the 1971-81 period was about 35 years.

When the performance of the urban sector housing is examined with the aid of the HQI (Housing Quality Index) developed earlier, it is observed that overall quality increased by 22 % and reached 61.7 % of the ideal. The most rapid increase was in the availability of toilet facilities, a 45.8 % increase. However, the level of adequacy remained low, the single most conspicuous inadequacy in the urban sector. The space index which reached a value of 74 % increased by 24 % from 1971.

TABLE 4
HQI FOR URBAN STOCK — 1971-1981

	1971	1981
i. Structure Quality Index ..	56.4	63.6
Amenities		
Water	45.2	53.4
Toilet	28.4	41.4
ii. Amenities Quality Index ..	36.8	47.4
iii. Space Index ..	59.6	74.0
iv. Housing Quality Index ..	50.9	61.7

The city of Colombo and its growth

The city of Colombo and the contiguous towns form the largest metropolitan concentration in Sri Lanka. The way in which the city has grown and how the various issues related to it have been managed, offer insights for preparing to deal with similar situations in other urban areas. Clearly there would be much of Colombo's development, which is unique. However, within this experience, many elements common to all urban growth processes are contained. For example, the development of a network of public services which include health education, transportation and housing is necessary for any urban setting. The needs, costs of provision and maintenance of levels of service change with the size and pace of growth of a city. A thorough multi-dimensional understanding of the growth process and experience of Colombo would be invaluable.

The city of Colombo experienced growth and expansion after the mid-nineteenth century, when the port was developed to facilitate the rapidly growing plantation-based export trade. Between the years 1901 to 1981 the land area of the city increased by over one half (51.5%) while the population increased fivefold (408.5%). As a result the population density of the city more than quadrupled (336.4%).

During this century the population of the city had not increased more rapidly than the national population. The average annual growth rate of the city population for the period 1901-1981 was 1.85 per cent while the corresponding rate for the entire country was 1.8 per cent.

In the Colombo region most of the new housing has been increasingly located in the suburbs of the city. Meanwhile the proportion of slums and shanties within the city has in all probability increased. The problems of Colombo city should not therefore be perceived entirely in terms of the model of the primate city of the developing world caught in the rural-to-urban migration. The perceptions based on that model, prompted urban planners and sociologists to move away from earlier approaches which advocated slum clearance and relocation of shanties to programs which supported the urban poor in their present settlements through upgrading and improvement. While such programmes certainly have a great deal of relevance for Colombo city, its particular urban characteristics may call for initiatives which modify and adapt these approaches.

An approach to the problems of slums and shanties which is based entirely on upgrading and the retention of this housing stock in its present locations may not be adequate to respond to the long-term needs of urban development in the city.

The number of housing units in the city increased from 75,614 in 1971 to 84,330 in 1981, a 11.8% increase. In 1971 (the latest year for which detailed census figures on housing are available) there were 54,816 permanent houses (72.5%), 17,332 semi-permanent (22.9%) and 3,466 (4.6%) improvised units in the city. Those classified as semi-permanent and improvised would be the shanties and some of the units in the slum tenement gardens.

Slums and Shanties

One of the major housing problems of the country relates to the slums and shanties of Colombo city. (See Marga "*Housing in Sri Lanka*," 1976, p. 77-86 for a description of slums and shanties).

According to the evidence from various unpublished reports, there had been a rapid increase in the number of shanties between 1953 and 1960 (from 1,397 to 13,332) reflecting an almost tenfold increase in seven years. A survey carried out by the Colombo Municipal Council in 1973 estimated the number of shanties at 16,251 and the number of slum tenement houses and tenement gardens at 28, 714, making a total of 44,965 housing units which could be regarded as sub-standard. These were occupied by 54,416

families with a population of 271,667 persons, which was approximately 48 % of the total population of the city at that time. Wards with the largest proportion of slum and shanty dwellers are Borella North (99.9 %), Panchikawatte (99.9 %), Modera (99.8 %), Mahawatte (99.5 %) and New Bazaar (85.2 %). Wards with lowest proportions are Bambalapitiya (0.8 %), Milagiriya (4.8 %), Fort-Pettah (5.5 %), Cinnamon Gardens (6.3 %), and Havelock Town (8.3 %).

The Slum and Shanty Upgrading Unit of the Urban Development Authority estimates that about 125,000 (21.3 % of the Colombo Municipal Council's 1981 Census population of 586 thousand) live in shanties, with an average occupancy rate of between 6 and 7 persons per unit, i.e., about 20,000 units (See Annex II of PADCO report—*Meeting Housing Needs in Sri Lanka. A Strategy for the Future*, October 1982).

After 1977 when the ownership of houses whose rents were below Rs. 25 per month were handed over to the tenants, a large number of slum dwellers became the owners of units which they occupied. This transfer of ownership has prompted many of the occupants to repair and improve the homes which they now own.

The net additions of improvised structures to the urban housing stock during 1971-81 may partly confirm that the expansion of shanty dwellings is slow and under control. It has to be noted, however, that the quality of shanty housing varies widely. Many of them are semi-permanent units with a small proportion being permanent units. The presence of improvised homes in the urban sector may mean that new shanty units are continuing to enter the urban housing stock while the older shanties are being upgraded. A comprehensive survey is required to ascertain the current situation regarding the stock of shanty units as well as the rate of new construction.

Together, the slums and shanties in the city of Colombo account for approximately 53 % of the total housing stock—44,965 units out of a total of 84,530. These figures highlight the magnitude of the problem of sub-standard housing in Colombo City. The problem is compounded by the fact that a large proportion of these units are located on land which is of very high value. Therefore, it is expected that the Slum and Shanty Improvement Programme undertaken by the Urban Development Authority will develop into

a key strategy in the field of urban housing. The programme is discussed in Chapter 6 of this study.

The majority of the employed residents of slums and shanties are wage workers and those employed in the small-scale sector. However, according to available data it is not possible to conclude that they uniformly comprise the urban poor and the disadvantaged. Nearly half the city population is expected to be living in shanties and slums. However, while half the nation's population receives food stamps less than one-fifth (17 per cent) of the city residents obtain such aid. Clearly, a substantial proportion of the households which occupy shanties and slums are not among the nation's most economically underprivileged. This view is confirmed by a Marga Institute Survey conducted in 1982.⁵

This raises two related issues which need careful study. The first relates to the exchange values of these homes under prevailing conditions. Even the shanties cannot be assumed to be of negligible value. Some of the households consolidate and upgrade these dwellings over time thus increasing their value. The upgrading may be related to among other things the security of tenure of the property. Why should a household construct a brick home on public land in the city? Can the costs be capitalised by the benefits obtained by living at that location? This brings us to the second issue, location. The market value of these seemingly substandard houses, is in part due to the access features of their locations. From a house at a particular location, household members gain access to employment, education, health and other services. The substitution between characteristics of the location and characteristics of the home, especially size and quality of the structure are revealed in a specific locational pattern. Some households would prefer access to house quality. Meanwhile other households are in the process of adjustment, with higher income they may expect to locate at a different site. (See chapter 5 for survey evidence.)

Improvements, in the provision of amenities and transport and growth of employment-generating centres have an impact on the household choice of location. The remedies for improving the housing conditions of the urban poor are therefore not necessarily the same as those for the slum and shanty households in general. The issues of location and value, have to be taken into account for

planning new or alternative housing, for those in slums and shanties which are on land of high economic value.

Mix of housing units

This brings us to the composition of the rest of the urban housing stock in the city of Colombo. When the large component of slums and shanties is excluded, the balance stock consists of a mix of housing units occupied by the middle and upper income groups. They include single houses, annexes, flats and apartment buildings. According to the 1981 census, flats and annexes comprised 16% of the permanent housing stock in the urban sector. Of this, almost all the apartment buildings, and a considerable proportion of the annexes are likely to be located in the city of Colombo and its suburbs. Urban growth and the resulting pressure on land will demand a higher density of construction. The mix in the housing stock in the city of Colombo and its neighbourhood reflects this process.

Multi-storey apartment buildings (walk-up buildings of about five floors) are an important component of housing in Colombo City. The investments in house construction of this type have been undertaken mainly by the State and have been designed primarily as rental housing for middle class and working class households. In the 1970s the construction of apartment-type housing continued, although in terms of the relative share of the State Housing Programme it had lower priority. In the residential mix of urban centres with high density such as Colombo, multi-storey apartment housing must form an essential element. Future urban housing strategies cannot afford to neglect this requirement.

Housing has also been affected by the rapid expansion of the non-residential part of the city. The approvals granted by the Colombo Municipal Council show that the non-residential construction recorded a steep increase in 1978 and 1979 and continued at a slower pace thereafter. The growth of commercial and industrial activities has increased the pressure on available land and buildings. These activities have moved into the traditionally residential areas, in some cases displacing residential units or converting them for non-residential use. The Urban Development Authority has undertaken and promoted the construction of buildings

TABLE 5
APPROVALS OF PLANS FOR NEW CONSTRUCTION BY THE COLOMBO MUNICIPAL COUNCIL

Year	Houses	Flats	Total	Community Buildings	New Industrial Buildings	New School Buildings	New Additions and Alterations	Other Buildings	Total
1972	240	22	262	16	—	—	500	—	778
1973	148	26	174	48	10	—	532	—	764
1974	230	12	242	41	6	—	398	—	687
1975	263	20	283	47	11	4	409	—	754
1976	351	23	374	57	4	2	385	—	822
1977	338	37	375	75	—	5	423	—	878
1978	343	75	418	125	46	12	321	7	929
1979	580	212	792	118	101	24	736	5	1776
1980	272	292	563	67	36	5	456	7	1134
1981	288	242	530	53	4	5	528	15	1170
1982	364	225	589	45	10	3	538	60	1245

Source : Colombo Municipal Council

for commercial and non-residential uses in order to ease the pressure, and contain the expansion in a manner which reduces the effect on the residential component. But these efforts have encountered initial problems. Owing to the comparatively high rentals that new commercial buildings have had to charge to obtain a return on the investment, they have not been able to compete with the existing large residential units which are put to non-residential use.

Housing and home-based enterprises in the urban sector

The profile of urban housing would not be complete without a brief account of another phenomenon which has relevance for the use of resources for housing in the urban sector. This is the growth of home-based economic activity.

The steep rise in land values and construction costs in the recent past has led to a phenomenal increase in rental values in the urban areas, especially in the metropolis. Partly as a response to this situation, residents have taken to small but lucrative home-based enterprises.

Small enterprises are an integral part of the business ecology of most developing countries. They make a significant contribution to employment as well as output. An important feature of the small enterprise is the manner in which entrepreneurs can respond to the various economic constraints they encounter. In the urban sector small enterprises are usually constrained by the availability of commercial space. One particular response, namely the use of residential space for commercial purposes, has been widely observed in the small-scale enterprises of many developing countries. A recent study of the urban informal sector of developing countries, observed the high proportion of such enterprises and noted they could continue to be an important part of the urban economy of these countries in the future.⁷ Therefore, the relationship between these enterprises and the shelter services in the urban sector needs to be carefully assessed.

All enterprises operated from home are neither small in scale nor informal in character. In a recent study of home-based enterprises in Colombo,⁸ a wide variety of enterprises operating from home was observed. These ranged from the ubiquitous retail store

to an export-oriented fishing lure manufacturing enterprise. Renting rooms to lodgers, preparing food for sale, dressmaking and tailoring, small-scale handicrafts, providing private tuition at home, auto-repair shops and metal workshops were also observed. These enterprises were either located in a part of the dwelling or in a separate structure in the garden of the house.

The study restricted itself to the predominantly residential wards of the Greater Colombo area. It is important to keep in mind that a wide variety of commercial activities seem to be initiated in the home in residential areas of Colombo. A large number of these enterprises may not have been detected in the conventional surveys and enumerations of business enterprises, undertaken by State organisations. For instance, the little enterprise located at home which provides food for neighbouring households, although run as a commercial enterprise, may not be registered and therefore not reported in the various censuses. In the 1971 census of population and housing, a proportion of about 5% of the urban households in the Colombo District were reported to have been operating small enterprises. On the basis of the study of the Greater Colombo Area housing and home-based enterprises, (for which the data was obtained by means of a survey of 650 households) it is evident that a much larger proportion of the households have income-generating activities located in the home or the home site.

The household which operates a home-based enterprise was not distinguished by any special household characteristics from its counterpart which did not have a home enterprise. This meant that household size and its age profile did not seem to have an important bearing on whether or not the household had a home enterprise. However, compared with those with businesses a significantly larger proportion of the primary workers in the households without business were employed in the professional, technical, supervisory or clerical grades (61% to 50%). Clearly, the difference is due to the fact that in the home business, the primary worker is most often the owner operator of the business. Nevertheless, even for the secondary worker the pattern was unchanged (65% to 57%). Characteristics associated with the home, that is the floor area of the home, the kind of services available to the home, were also not very different among the two categories of households, those with and without home enterprises respectively.

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Although in an aggregate sense, the households with business and those without were similar in terms of the housing services they enjoyed, the use of space for a home business, either the garden or the home itself, made a significant difference to the actual satisfaction gained from the house and property. This view is strengthened by the data which indicates that the majority of the home-based enterprises share space jointly with the home and do not specialise in commercial space divided within the household. Except in the case of retail stores, which used space exclusively for the business, most of the other home enterprises seemed to operate only during a certain period of the day and the space reverted as living space for the household at other times.

A home-based enterprise clearly makes a substantial saving in terms of the cost of business premises. Most enterprises indicated that they would not exist if they could not operate at their present home-based location. A higher proportion of the households with business had added space to the dwelling during occupancy (23 % compared with 13 % for those without businesses). However, the main reason for adding space in both cases was related to the space needs of the family. The proportion of households expecting to add space within the next five years was higher in the case of households with businesses, 21 % compared with 12 % for those without businesses.

The financing of housing through small-scale enterprises may have an important bearing on housing development. For instance, in the World Bank Dandodra Project in Nairobi, Kenya, the occupants were encouraged to finance expansions to the home by taking in lodgers. As a result of this, the average dwelling was completed within eight months instead of the planned 18 months. Through this process entire dwellings were sublet or sold to richer households. Household enterprises are therefore in some settings seen to lead to a process of transforming the existing housing stock. This is especially true in the case of projects where core houses are provided. A less easily detected activity is the renting of rooms to finance, partly or completely, the costs of housing units. For example, a household which takes out a loan to build a house could rent a part of the house for a limited period and thereby finance the housing payments during that time. The expansion of tourism in Sri Lanka has provided increasing opportunities of this type. The

home enterprise, therefore, has two important features in terms of its relationship to the household on its ability to provide income and employment for the household and the other its relationship to the transformation of the house itself.

The findings of the Marga Institute's survey on housing, conducted in 1982, confirmed the general pattern of home enterprises observed in the study discussed earlier. The survey noted that home enterprises are both an urban and a rural phenomenon. This type of activity is bound to influence the locational choice of households. The specific type of activity undertaken by the urban households were different from those in the rural sector. The urban sector had a higher proportion of service-oriented enterprises than the rural sector. However, the special characteristics of the sample precluded further analysis of these enterprises.

Home enterprises will pose a range of problems as they become more visible in the urban setting. Besides the usual enforceable rules on pollution and waste disposal, there do not seem to be reasons for enacting regulations specially designed for these enterprises. What is required are not special regulations geared to this type of activity but rather the removal of obstacles which may enhance not only employment and income of households but also the improvement of the housing units where the home enterprises are located. The prohibition of renting of rooms or undertaking businesses in certain public housing units may be self-defeating in terms of obtaining the level of return which make such housing programmes replicable. This aspect of sharing the housing capital for both business and residential purposes has been taken into account in a few South-East Asian countries. However, in special cases where spill-over effects result, noise, smoke, voltage fluctuations, movement of people, the presence of a home enterprise could reduce the quality of a residential neighbourhood. On the other hand, it could also benefit a neighbourhood by providing employment and income to households.

Rural Sector Housing

The rural sector can be regarded as having three components, differentiated by various socio-economic characteristics such as levels of economic activity, physical infrastructure and access to

urban amenities. First, there are the traditional villages and the settlements which have grown around them. Second, the more recent agricultural settlements and, third, the territory contiguous to the urban sector.

The traditional villages have received land and subsidies for housing through various village expansion schemes under the Land Development Ordinance of 1935. The settlers in the new agricultural schemes were beneficiaries of a new agricultural infrastructure. They received land for a homestead, and public assistance for housing. The early colonisation schemes in the North Central Province provided publicly-funded housing. The rural residents living close to a large town are in many cases suburbanites. They enjoy services similar to those in the town but are subject to lower property taxes and different building regulations. The economic opportunities they face are often more urban than rural in character.

The continued high volumes of investment in agricultural infrastructure and technology, strengthened the economic base of the peasant smallholding sector. During the 1971-81 period agricultural incomes increased at least as fast as manufacturing wages. The domestic agricultural sector had recorded the highest average rate of growth in output and was a major contributor to the economic growth during this period.

Changes in the Rural Occupied Housing Stock

According to the 1981 Census of Population and Housing, nearly three-quarters of the total population of the country, 72.2 %, lived in the Rural Sector. The rural population had grown at an average annual rate of 2.2 %, from over 8.7 million persons in 1971 to about 10.7 million persons in 1981. The rate of increase was almost twice that of the urban population.

The rural sector housing stock had grown from 1.56 million units in 1971 to 2.08 million units, at an average annual rate of over 3 %. In 1981, the rural housing stock of 2.08 million units comprised houses of different size, structural categories and associated amenities. Over 88 % of the increment to the national occupied stock during the 1971-81 period was in the rural sector, which contained 93 % of the nation's intercensal population increase.

The typical rural house in 1981 was owner-occupied, had less than three rooms and was occupied by five persons. It had a mud or rammed earth floor, wattle and daub walls and palm-thatch roof, a protected well providing water and a pit latrine for a toilet. Kerosene was used for lighting and firewood for cooking. The average house and its related amenities had not changed very much during the 1971-81 period. However, when the data on the housing stock are examined, it is evident that there had been significant changes in the distribution of some of its characteristics. The most notable change occurred in the physical characteristics of the housing stock.

TABLE 6

CHARACTERISTICS OF THE RURAL OCCUPIED HOUSING STOCK AND CHANGES 1971-81

			1971	1981
Total Rural Occupied Stock	..	..	1,558,765	2,084,496
Proportions in Percentages				
I. Structure				
Permanent	..	..	31.6	37.2
Semi-permanent	..	..	61.0	56.1
Improvised	..	..	7.4	6.7
Cement Floor	..	..	39.7	44.7
Brick, stone or cabook walls	..	..	34.6	39.5
Mud walls	..	..	56.8	53.0
Asbestos sheet or tile roof	..	..	37.9	41.7
II. Amenities				
Piped water	..	..	4.8	5.1
Protected well	..	..	N.A.	58.1
Flush or water-seal toilets	..	..	12.1	21.0
No toilets	..	..	41.5	32.1
III. Tenure				
Owner-occupied	..	..	76.9	79.5
Rented	..	..	6.2	6.5
Averages				
IV. Number of rooms	..	..	2.2	2.5
V. Number of occupants	..	..	5.6	5.1

Source : Department of Census and Statistics 1973 and 1981 (9) and (10).

Note : N.A. Not available. In 1971, 84.6% of the rural stock obtained water from protected or unprotected wells; in 1981, the corresponding proportion was 85%.

The permanent component of the rural stock had grown at an average annual rate of 4.9%, more than twice as fast as the semi-permanent and improvised components, which grew at 2.2% and 2.0% respectively. The result was that the proportion of permanent houses in the rural stock increased by 5.6 percentage points, from 31.6% in 1971 to 37.2% in 1981. The proportion of improvised

houses declined by less than one percentage point and was 6.7 % of the stock by 1981. If the rates of growth of the different components of the rural stock, which result from new construction, replacement and upgrading, are maintained into the future, the rural occupied housing stock would have equal proportions of permanent and semi-permanent units before the year 2000. However, at the average rates for 1971-81, it would be nearly 60 years before the entire rural housing stock is transformed into permanent structures.

Features of Transformation

Some of the features underlying this process of transformation have already been discussed. However, it is important to emphasise particular ones. If past rates are maintained, equal proportions of the rural stock would have cement or mud floors before the year 1990. Because less than one per cent of the rural stock had floors other than of cement or mud, it implies that almost half of the rural stock will have cement floors before the end of this decade if the 1971-81 pattern is continued. The transformation of the entire rural stock to one with cement floors may take over 60 years at these rates. Nearly half, 53.0 %, of the rural stock had mud walls in 1981. The proportion with clay or cement bricks, stone or cabook for walls was nearly 40 %. The corresponding proportions in 1971 were 56.8 % and 34.6 % respectively. Clearly, a modest shift away from mud towards brick or cabook had taken place. Mud or wattle and daub houses could be classified as permanent, depending on the material for the floor and roof. During the same period the stock of mud-wall houses grew at an average annual rate of 1.5 %, while the stock with brick (clay or cement) or cabook walls grew at 3.6 %. If these rates of transformation are maintained, the rural stock would have equal proportions of mud-wall and brick or cabook-wall housing by the year 1995

The proportion of the stock with tile or asbestos sheet roofing had increased from 37.9 % in 1971 to 41.7 % in 1981 at an average annual rate of 3.2 %. If these rates continue, before the year 1990, equal proportions of the rural stock would have palm-thatch and asbestos or tile roofing.

When the three structural components of the housing stock are examined, it would appear that the transformation that is taking

place in the materials used for construction would result in a substantially altered rural stock within the course of the next ten to fifteen years. Over half the rural stock would have cement floors, brick or cabook walls and clay tile or asbestos sheets for roofing by the year 1995. However, the assumptions which lead to these conclusions may need some modification. It is possible that the actual transformation that took place after 1978 was much higher than the average for the period 1971-81. If this was the case, a continuation of the post-1978 trends would produce changes in the overall structural feature of the rural sector much sooner.

The average number of rooms in the occupied rural stock recorded a significant increase from 2.23 in 1971 to 2.51 in 1981. The permanent component had an average of 3.5 rooms in 1981, an increase from 3.1 in 1971. The average for the semi-permanent was 2.0 and for the improvised portion it was 1.5. The proportion of one and two-room houses did not change significantly, and accounted for 61.3 % of the stock. A small but not insignificant proportion of the rural stock had an unspecified number of rooms.

The increase in the number of one and two-room rural houses was over half, 57.4 %, of the increase in the stock that occurred between 1971 and 1981. This implies that the major share of the demand for new housing in the rural sector continued to be for one and two-room units. However, when the stock is disaggregated, a somewhat different picture emerges. The demand for permanent houses is accompanied by a demand for more rooms. This is not necessarily a demand for space but rather a demand for specialised space and privacy. Instead of a one-room wattle and daub, palm-thatch mud floor house, a two or three-room unit with cement floors, tile or asbestos-sheet roof and walls of brick or cabook would reflect a major portion of the housing package demanded in the rural sector.

Amenities

Access to drinking water

About 58 % of the rural housing stock was serviced by a protected well in 1981. If the number serviced by unprotected wells is added, the proportion rises to about 85 % of the stock. A little over 5 % of the stock was serviced with piped water. In 1971

only 2.1 % had piped water, while 82 % obtained water from protected or unprotected wells.

The proportion of the rural stock with piped water is small. Over three quarters of it were permanent units. The low densities of settlement that prevail now make a pipe-borne water service provided from a central source uneconomical in most parts of the rural sector. However, it is possible with increasing rural incomes that individual households would invest in small pumps to obtain a more convenient water service. Water service for rural housing would emerge as an important issue as the rural sector transforms itself and as rural incomes and densities increase.

Toilet Facilities

Less than one-fifth of the rural occupied stock was serviced with flush or water-seal toilets in 1981. Between 1971 and 1981, the number of rural houses serviced by flush or water-seal toilets more than doubled, an average annual rate of increase of 8.5%. During the same period, the number of units with access to pit latrines increased by about one-third this rate. If the present growth of rural housing stock and the rate change in toilet facilities are maintained, in about 32 years the entire rural stock would have access to flush or water-seal toilets. However, it is possible that the different types of toilets were not properly identified at one of the census operations. Therefore when pit latrines are included, the growth rate in the number of units with one of the three types of facility becomes 4.3%. This implies that maintaining the change experienced between 1971-81 would result in the entire rural stock having access to either flush, water-seal or pit latrines within 40 years. Although over one-third of the rural stock was without formal toilet facilities, the on-going transformation would result in a major change, and direct measures to aid this process would hasten the transformation.

Use of Electric Power

Nearly 90 % of the rural homes, were lit by kerosene lamp in 1981; a decline of over 5 percentage points since 1971. During this period the stock of housing with supply of electricity increased by about 128,000 units, raising the proportion of the rural stock

with electricity from 2.8 % in 1971 to 8.3 in 1981. Almost 95 % of this increase was in the permanent component of the rural stock. The proportion of the permanent rural stock with electricity increased from 8.0 % in 1971 to about 21 % in 1981. The rural sector contained about 40 % of all permanent houses supplied with electricity. In 1971, the corresponding proportion was only half as large. Increasing rural incomes would continue to create additional demand for electrification. Moreover, various state-sponsored rural electrification schemes would increase the access to electric supply. If supply constraints do not intervene, the continuation of the 1971-81 trend implies that the number of rural units with electricity would increase about fourfold before the year 1990.

The transformation of the housing stock and associated amenities discussed above assume that past trends would continue. However, it is necessary to note that it also assumes a particular change in the structure of demand. The observed pattern is the reflection of fulfilled demand. Those who were able, changed their bundle of housing services. A change in the distribution of income different from that of the 1971-81 period will not result in the expected transformation.

Number of Occupants and Tenure

The rural occupancy had fallen from an average of 5.6 persons in 1971 to 5.1 in 1981. The average in 1981 for the permanent component was 5.4 persons while the semi-permanent and improvised components had averages of 4.9 and 4.6 persons respectively. In 1971, the permanent component was occupied by an average of 6 persons, the semi-permanent by 5.5 persons and the improvised by 4.9 persons respectively. When the decrease in the average number of occupants is considered together with the increase in the average number of rooms per occupant, it is clear that the per capita space or specialisation of space, increased during the 1971-81 period for the total rural stock as well as each of its three components.¹

1. The average number of persons per room decreased from 2.50 persons in 1971 to 2.03 in 1981. If the floor area per room remained constant during this period, per capita space would have increased by approximately 20%. Following the same reasoning, it is found that per capita space for the three components of the stock increased by similar proportions. However, in 1981, making the extreme assumption that room floor areas were the same across the three components, the occupants of the permanent component of the rural stock would have had about 50% more per capita space than the occupants of the semi-permanent and twice the per capita space of the improvised component respectively.

Between 1971 and 1981 the proportion of the rural stock occupied by more than one household fell from 7.3 % to 4.4 %. It is quite likely that the occupation of housing units by more than one household is a voluntary decision. Except in the more densely-populated Wet Zone, the pressure on the land available for residential purposes in the rural sector is different from that of the urban sector taken as a whole. The reduction in multiple household occupancy, along with the increased number of rooms, is an indicator of another aspect of the reduction of crowding of the rural sector housing stock.

The rural stock occupied by a single household grew by about 38 %, an average annual rate of 3.4 %. The proportion of the stock occupied by a single household was about 3 percentage points lower for the permanent component than for the semi-permanent or improvised component. The permanent component of the rural stock had a higher average number of rooms and a higher average number of occupants. Therefore, a given number of permanent units provided housing services (of better quality) to a larger number of occupants than the same number would have done in semi-permanent or improvised units.

Rural Rental Market

Nearly 4 out of every 5 rural homes were owner occupied in 1981, and 6.5 % of the rural housing stock was rented. Over one half of all rented rural homes were in the permanent category, approximately 10 % of the total permanent stock. The rental stock had grown faster than the total stock during the 1971-81 period, 3.6 % compared with a 3.1 % average annual rate. Although the proportion of owner-occupied housing increased, the rental market in the rural sector, in contrast with the urban sector expanded marginally.

According to these trends, the rural sector is likely to have a significant rental market in the future. In fact, it is unlikely that rural sector housing would be transformed without growing pressure for a rental component. The development of the rural sector would be accompanied by the growth of the public sector and state activity. The housing needs of the growing public sector workforce would have to be partly met through an expanded rental housing

sector. The increasing demand for permanent housing implies a change in the rural construction sector as well as resource mobilisation for housing investment. Growth in the demand for permanent housing would mean a greater flow of monetised investment into housing. This would create a need for a larger component of institutional finance for housing investment. Meanwhile, the construction sector would have a growing formal component in order to effect the changed composition of the housing investment. The surpluses accumulated by particular income groups in the rural sector may become increasingly important for housing investment which provides accommodation for renters.

Stock Change and Implied Process

The construction and the pattern of change of the rural housing stock during the 1971-81 period, was quite different from that of the urban sector. Permanent houses accounted for only half of the stock change and about one-fifth of the total volume of construction during this time. The larger proportion of semi-permanent houses implied a higher loss to the stock through depreciation and demolition. The average annual rate of loss of the total rural stock was more than twice that of the urban sector; 1.8% compared with 0.7%. Based on the reasoning developed earlier (See p. 25-29 and Appendix I) it is estimated that at least 107,000 semi-permanent units would have been retired from the rural stock, an average annual rate of retirement of only 1.25%. This leads to an average life expectancy of 80 years for a rural semi-permanent house.

TABLE 7
THE RURAL STOCK AND CHANGES DURING 1971-81
(in '000s of Units)

		1971 stock	1981 stock	Stock change 1971-81	Con- struc- tion	1971 stock standing in 1981	Depletion of 1971 stock by 1981
P	..	492.7	776.4	283.7	175.9	600.5	107.8
SP	..	950.3	1,168.5	218.2	485.5	683.1	-267.2
I	..	115.8	139.5	23.7	101.7	37.8	-78.0
T	..	1,558.8	2,084.4	525.6	763.1	1,321.4	-237.4

Source : See Table 6.

Note : Construction and 1971 stock in 1981 have been adjusted to take account of the census period.
P — Permanent; SP — Semi-permanent; I — Improvised; T — Total.

Using the housing quality index, it is observed that rural housing quality improved by about 20 % between 1971 and 1981. Space and structure improved by 22 % and 26 % respectively. The low level of the amenities index increased by only 6 %. However the amenities index does not capture the aspect of convenience peculiar to the rural sector.

TABLE 8
HQI FOR RURAL SECTOR-1971-1981

		1971	1981
i.	Structure Quality Index ..	24.4	30.8
	Amenities—		
	Water	32.4	28.2
	Toilet	10.4	17.2
ii.	Amenities Quality Index ..	21.4	22.7
iii.	Space Index ..	67.2	82.2
iv.	Housing Quality Index ..	37.7	45.2

Estate Sector Housing

The estate sector had gradually relinquished its position as the sector which generated the major share of the country's export earnings. Changes in the external market conditions along with government policies which resulted in a large proportion of the plantations coming under state control changed the character of this sector. Repatriation of labour of South Indian origin resulted in a steady and large decline of the plantation sector population.

Between 1971 and 1981, both the population and the occupied housing stock of the estate sector declined in absolute terms. The population declined by nearly 18 % while the occupied stock declined by 8.5 %. This resulted in a drop in the average number of occupants of the estate stock from 4.8 persons in 1971 to 4.4 persons in 1981. The size of the permanent component and its proportion relative to the total stock nearly doubled. The estate sector consists mainly of tea and rubber plantations. One of the primary features of the estate sector housing stock is the large proportion (more than three-quarters) of it which is occupied free of charge. This portion of the stock is the property of the respective plantation owners. The nationalisation of a large share of the plantations transferred ownership of this stock from private companies, many of which were foreign, to the state. Prior to nationalisation, estate sector housing was the responsibility of the individual plantations.

The different grades of plantation workers, labourers, management and other support staff obtained housing of different quality through the individual plantation. The composition and characteristics of the estate sector housing stock were different from those in the rural and urban sectors. The management staff lived in large houses serviced with piped water and electricity, the labourers lived in barrack-style lines, one-room lines, or small one-room semi-detached cottages, while the rest of the support staff occupied two or three-room well-serviced homes. Improvements and upgrading as well as addition to the stock was the responsibility of the estate management. The economic performance of the individual plantation and the decisions of its management, rather than individual household decisions regulated the flow of and adjustment to this sector's housing services. The framework within which estate sector housing operated was distinct from that of other sectors.

TABLE 9
**CHARACTERISTICS OF ESTATE OCCUPIED STOCK AND
 CHANGES 1971-81**

	1971	1981
Total Estate Occupied Stock	237,558	217,451
Proportions in Percentages		
I. Structure		
Permanent	12.0	23.4
Semi-permanent	85.3	78.5
Improvised	2.7	0.8
Cement floor	13.1	24.5
Brick, stone or cabook walls	80.2	78.9
Mud walls	16.8	18.6
Asbestos sheets or tiled roof	19.3	25.1
Metal sheet roof	73.9	71.3
II. Amenities		
Piped water	74.7	65.6
Protected well	N.A.	16.3
Flush and water-seal toilets	42.1	29.1
No toilets (1)	13.4	28.4
Electricity	4.1	5.6
III. Tenure (2)		
Owner-occupied	2.0	1.3
Rented	1.7	1.3
Free of charge	88.7	79.0
Averages		
IV Number of rooms	1.4	1.7
V. Number of occupants	4.8	4.4

Source : Department of Census and Statistics 1973 and 1982.

Note : N.A.—Not available.

In 1971, 15.4% of the occupied stock was serviced with protected or unprotected wells in 1981 the proportion was 20.4%.

(1) In 1981 8.5% of the occupied stock had an unspecified toilet facility.

(2) In 1981 12.9% of the stock had unstated tenure

The typical estate sector housing unit was a line room with mud floor, brick walls and roof of corrugated metal sheets. It was occupied free of charge by about four persons belonging to a single household. The occupants had access to piped water and either a water-seal or pit latrine. The house was lit by a kerosene lamp at night and firewood was used as the fuel for cooking.

Physical Characteristics

In 1981, three-quarters of this stock had mud floors. Almost all of the remainder had cement floors. In the larger stock of 1971 86.2% of the homes had mud floors. Both in 1971 and 1981 almost all permanent units had cement floors. Nearly three-fifths of the estate stock, 63.1%, had cement bricks or stone walls in 1981. Clay brick or cabook walls comprised 15.8%, and mud walls 18.6%. In 1971, the combined proportion of brick, stone or cabook walls accounted for four-fifths of the stock while 16.8% had mud wells.

The predominant roofing material was metal sheets. The proportion of houses with clay tiles or asbestos roofing had increased from under one-fifth in 1971 to a quarter in 1981.

In 1981, the estate stock had an average of 1.7 rooms. The permanent component had an average of 2.5, while the semi-permanent and temporary had averages of 1.5 and 1.6 respectively. However, 63.5% of the permanent stock had two rooms or less; 63% of the semi-permanent and 58% of the improvised stock had only one room. Compared with the position in 1971, clearly, the average number of rooms had increased for the reduced total estate occupied stock as well as for its large semi-permanent and small improvised components. It is possible to speculate that one-room units for both semi-permanent and improvised units went out of the occupied stock, while in the case of the permanent component, upgrading of one and two-room and semi-permanent units with cement floors, and construction of new, one and two room units would have marginally reduced the average number of rooms.

Amenities

The estate occupied stock had a lower proportion of units without access to a formal toilet than the rural occupied stock, 28.1% compared with 34.8%. About 45% of the estate houses shared a water-seal or pit latrine. In 1981, over three-fifths of the

estate units had access to a flush (4.9 %), water-seal (25.2 %) or pit toilet (32.3 %). In 1971, a higher proportion had access to flush toilets, 8.2 %, while 33.9 % had water-seal toilets and 38.2 % pit latrines. The proportions of occupied housing units without access to a formal toilet had increased since 1971, when it was only 13.4 %. In fact, between 1971 and 1981, the number of estate occupied units without formal toilet facilities had nearly doubled. On the basis of data available it is difficult to account for the deterioration.

In 1981, nearly two-thirds of the estate occupied houses had access to piped water, while one-fifth obtained water from a protected or unprotected well. A significantly large proportion, 8.1 %, of the occupied units had no clearly stated source of water supply. The proportion of units with access to piped water was about 9 percentage points lower in 1981. There had been a significant shift to well water from pipe-borne water in the estate sector during the period 1971-81.

Occupancy

Between 1971 and 1981, the proportion of the estate stock occupied by single households increased by over 5 percentage points. In 1981 only 2 % of the estate stock was occupied by more than one household. Considering the smaller average number of rooms for the estate stock compared with both the urban and rural sectors, the lower proportion of homes occupied by more than one household is not particularly surprising. The estate sector also had a significantly lower number of occupants per home than the urban or rural sectors. However, in the estate sector, the number of occupants per room for the entire stock was 2.6, higher than those for both the urban and rural sectors, which were 2.2 and 2.0 respectively. In 1971, the average number of occupants per room for the estate stock was much higher with 3.4 persons. If the average room size remained constant between 1971 and 1981, this implied an increase of per capita space of over 30 %.

Changes in stock and implied process

The number of occupied housing units constructed in the estate sector between 1971 and 1981 is estimated to have been over

17,000 units. Over half of the estate construction was of semi-permanent units. Although the estate occupied stock decreased, an almost similar volume of construction had taken place during the 1971-81 period. The increase in the number of permanent houses was not only due to new units entering the stock. At least, 15,000 units would have entered the permanent stock as a result of the upgrading of semi-permanent units. The upgrading seems to have been primarily as a result of mud floors converted to cement; 22,000 units with cement floors entered the occupied stock between 1971 and 1981, greater than the total construction during this period. The semi-permanent units that were constructed did not account even for the loss owing to upgrading.

Housing Quality Index

The effect of the decline in population and the changes in the housing stock, resulted in a 32% increase in this sector's space index. Although the structural quality index doubled between 1971 and 1981, it still remained low and significantly below the levels of both the urban and the rural sectors. Meanwhile, the toilet facilities remained very poor and seemed to have deteriorated after 1971- However, the water service in the estate sector, in terms of aggregate measures, seemed superior to that of the rural sector. The overall index improved by over one-fifth, but remained very low

TABLE 10
HQI FOR ESTATE SECTOR—1971-1981

	1971	1981
i. Structure Quality Index ..	11.2	22.3
Amenities—		
Water	54.2	41.4
Toilet	13.4	12.1
ii. Amenities Quality Index ..	33.8	26.7
iii. Space Index	49.1	65.0
iv. Housing Quality Index	31.4	38.0

Issues in Estate Housing

The tea plantations of the estate sector present a set of housing issues which are different in character from those encountered in the urban and rural sectors. Most of the larger tea plantations had been nearly isolated and self-contained human settlements where the housing arrangements had been made for a migrant



labour force of non-Sri Lankan origin. The housing stock was a part of the capital asset of the individual estate. The workers and their families were provided housing and other services within the plantation. The maintenance of the housing stock and its improvement depended on the economic surplus of the plantation. During the 1960s, when the tea prices fell and profits declined, most of these estates cut back expenditure on that part of the infrastructure such as housing, which was considered non-productive. The estate workers had no right to occupy the homes after they ceased to be employees of the estate. Therefore, they had no incentive to improve and upgrade their homes even though they occupied these homes for very long periods. With the nationalisation of the estates, a large part of the tea plantation housing stock has become the property of state enterprises. Now the estate sector housing issues can be addressed through public sector housing programmes. Apart from programmes of reconstruction and improvement, there is no comprehensive housing plan specially formulated for this sector which includes tenure and related issues. Depending on the feasible options, there is need for new approaches in planning and developing the human settlements within this sector. If the housing conditions in the estate sector are to be improved then household resources will have to be mobilised for this purpose as in the urban and rural sectors. In order to do this, several issues will have to be carefully addressed. Within the next decade, with the conclusion of repatriation of workers of Indian origin and the granting of citizenship to the rest, the plantation workforce would be Sri Lankan with opportunities for mobility within the national system. It is within this context that the housing settlements in the plantation sector have to be viewed. The human settlements in the estate sector will have to acquire characteristics which are similar to the normal human settlements in the rural sector. This would require development of basic local government institutions, provision of civic amenities and appropriate patterns of housing ownership. (See Chapter 6 for further discussions).

Conclusions

Assessing the performance of the urban sector housing would depend on the criteria and standards that are applied. Based on the rudimentary quality index developed earlier, we note that during

the period 1971-81 a modest improvement had taken place. The index had increased by 21 %; the most significant improvement had been in the toilet facilities available to the homes. Nevertheless, the improvement was from low initial conditions. Meanwhile, structural improvements and space availability for the entire urban stock showed noteworthy gains. (See Tables 2 and 4).

The increased availability of space suggests a growing demand for homes with more space, that is homes with two and three rooms. Meanwhile, mounting pressure for better sanitation and water service is expected in the future. If the relative rate of transformation developed earlier is used, it is observed that if past trends continue, it will take approximately 45 years before all homes in the urban sector become permanent structures. Since by 1981 more than two out of every three homes in the urban sector were permanent ones, it is possible to conclude that the rate of transformation of urban housing is slow.

The major share of the increase in the national housing stock took place in the rural sector. The transformation of rural housing that is under way is most noticeable in terms of the materials of the structures. It is expected that in the future the rural sector will continue to demand houses of more durable (and different) building materials with space formally organised into rooms.

Given the present standards of water and toilet service, it is likely as the rural sector income expands, that a growing demand for a different quality of service will be expressed by households. The rural sector would also express a growing demand for electric lighting and other residential infrastructure.

Careful attention will have to be given to the growing rural rental sector. The opportunity exists to avoid the serious policy errors made over the years in the urban sector through shackling the private rental market and reducing the flow of funds into that component of housing. Restricting the private rental market will necessarily imply the continued provision of public housing, at higher costs, for the various state personnel required in the growing rural sector. Obviously, rules and regulations to guide such a sector are necessary. However, the objective should be to promote and facilitate better housing.

The repatriation of labour from the estate sector may have contributed to the improvement of housing during the 1971-81 period. The decline in the population may have led to the inferior units becoming vacant or being demolished. In addition, upgrading and improvements would have been spread over a smaller stock and thereby had a greater impact.

Changes and improvements of estate sector housing, primarily worker housing, constitutes a special issue because of the unique features of this sector. The housing issues of this sector will have to be addressed in a manner different from the other sectors. The estate housing stock is the property of the estate owners and this would mean the public sector institutions formed after the take-over of private (and foreign) estates. Housing improvement will be tied to the economic well-being of the sector or the individual estates. The economic surplus of the individual estates or the relevant corporations will determine the sector's investment in housing. Based on the current situation there is reason to warrant additional investment in estate sector housing, and doing so with more and different forms of resource mobilisation than at present.

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CHAPTER 4

PROJECTION OF HOUSING NEEDS 1982-2001

Introduction

This chapter presents three projections of the volume of house construction needed during the period 1982-2001. They are based on the following set of assumptions :

- (1) the replacements to stock considered necessary,
- (2) the reduction of crowding in the existing stock, and
- (3) demand arising from net family formation.

Modifications to these assumptions provide a high, medium and low estimate of the demand. The projections are in terms of undifferentiated totals of housing units and no attempt is made to disaggregate these into the three structural categories—permanent, semi-permanent and improvised. The projections do not attempt to derive the sectoral composition of the new housing stock that is needed, but make a tentative sectoral distribution on the basis of the approximate shares of the urban and rural population. There is no attempt to project the improvement in the bundle of housing services that result from this volume of house construction. The estimates do not identify that component of capital formation in housing that will take place through upgrading and improvements of the existing stock.

However, the aggregate projections that are given here indicate the broad magnitude of new construction which will be required to satisfy future housing needs. They need to be disaggregated in order to project the likely and feasible trends in the qualitative changes of the housing stock as well as the sectoral distribution. Such disaggregation is important for planning and policy formulation, but at present, with the data available these projections are the result of a speculative exercise. However, they are based on

feasible assumptions which take into account current trends and improvements that can be expected. More data at a disaggregated level need to be collected and much more detailed analytical work done before projections could be provided at a level of reliability which would be of value for planning and policy-making. This is a task which should be given high priority.

Assumptions and their implications

Replacement

New units are necessary to replace superannuated stock as well as losses owing to demolition. The conventional method of estimating the replacement need is by assuming that a portion of the stock of a particular vintage is superannuated. This volume is then regarded as due for replacement over a period of time. Meanwhile, losses to the stock owing to demolition would also have to be replaced with new units. On this basis, the total need for replacements is derived from depreciation and demolition. The process of replacement, however, may be quite different for the three structural categories which comprise the total stock.

In the case of permanent housing, the ongoing practice may not be to replace the entire superannuated stock with new units, but rather to renovate and improve substantial proportions of it over a period of time and thereby extend its habitability much beyond the life span normally assigned to it. The entire stock of permanent houses of a particular vintage may therefore not be in need of replacement.

Similarly, semi-permanent housing units may be upgraded and may enter the permanent category. They will then not be included in the stock of semi-permanent housing due for replacement.

However, what the projection of replacement can attempt to provide is an estimate of the number of new housing units or their equivalent in the form of renovation and upgrading that will be required to maintain a particular level of stock. The estimate of the number of units required to replace superannuated stock must be regarded as a composite of new units, renovations and upgrading. We shall see later that this has important implications for the projections. In the absence of data on past demolition of permanent

housing owing to factors other than old age, the replacement needed on account of demolition cannot be isolated and reliably projected.

Permanent Stock

Total replacement need therefore is assumed to be related to the vintage of the stock. For the permanent housing component, the replacement need is assumed to be equivalent to the stock of such houses 50 years old or more. The high estimate assumes that all such houses would be replaced by the year 2001. This means that the entire stock built during 1931 and 1951 would be completely replaced with new units during the 1982-2001 period. The medium estimate assumes that upgrading and renovations to the stock are such that only the equivalent of three-quarters of the stock built during 1931-51 are needed as replacements to permanent houses. The low estimate assumes the proportion is only one half. Therefore, different replacement needs are obtained by implicitly changing the assumptions regarding maintenance and capital formation in existing housing units. The alternative assumptions indicate the variability of housing demand often missed in other projections. See PADCO¹, Struyk and Manson² and Struyk³ for alternative projections on Sri Lanka's housing needs up to the year 2000. These projections are based on different assumptions on replacement and new demand.

Semi-permanent Stock

The replacement need for semi-permanent housing is of a different nature. The possible maintenance and improvement of such structures may be such that a significant proportion of semi-permanent houses get upgraded into permanent ones. Meanwhile, in the case of old units the same structural features may not lend themselves to maintenance and capital investments without resulting in a new structure. In this sense, the semi-permanent stock requires a greater volume of replacement as a proportion of the stock.

All three projections assume that the entire stock of semi-permanent houses of age 30 years or more would be replaced by the year 2001. The rate of replacement is higher for the period 1981-86 on account of the larger proportion that requires replacement

in this period. In the next three five-year periods, the replacement has been phased out equally to achieve the norm of full replacement of stock over 30 years of age by the year 2000 A.D.

Improvised Units

The entire improvised stock is considered a backlog of inferior housing that needs replacement with either semi-permanent or permanent units. The indications based on the data for the 1971-81 period are that replacements with units of the same category are a substantial proportion of the stock. Improvised housing units are destroyed or demolished while new ones are built. Perhaps, not as replacements but as homes for different households at different locations. Improvisation is likely to continue into the future, even as a temporary means of obtaining shelter. For instance, this will occur in the Mahaweli settlement. *Nevertheless, all three projections assume that before the end of the year 2001 all such units would be removed from the stock.* The high estimate assumed that the improvised stock would be removed by the year 1996.

As mentioned earlier, one feature of this projection is that it does not disaggregate the need for structural types. Therefore, it misses out an important aspect of the changes in composition of the stock owing to investments in housing, specifically the upgrading with resultant change in the category of units. These upgraded units leave a particular component of the stock and enter another. For instance, an upgraded semi-permanent unit moving into the permanent category, subtracts a unit from the former while adding one to the latter. This type of loss to the semi-permanent stock is not considered in the estimate as the net result of these changes produce a change in component stock and not in the total.

It has to be pointed out that different assumptions regarding replacement might make a significant difference to the estimate of new units required. For example, it could be argued that the semi-permanent houses that are considered for replacement in the 1982-2001 period are of a later vintage, and are of better quality. There is greater scope for upgrading this stock to the permanent category and avoiding replacement. The rate which is applied to the semi-permanent stock of earlier vintage which came up for replacement in the seventies will not then be relevant for the eighties and nineties. Since the semi-permanent stock forms the bulk of the replacement,

any such change in the trend will result in a considerable reduction of replacement needs.

As observed in Chapter 2, the replacement of the housing stock has to take into account the upgrading of units from one structural category to another as well as the renovations and improvements within each category. These processes substitute for the construction of new housing units. When such substitution is taken into account the actual retirement of superannuated houses for which new units are required as replacements will be much lower than the estimated retirement based on pre-determined norms as done in the projections. The historical retirement rate for the period 1971-81 is only 1.53% per year. At this rate, the replacements needed during the decade 1981-91 will be an annual average of 40,100 homes as against the normative estimate of 60,500 for the low projection. The replacements estimated on the historical rate include all three structural categories—permanent, semi-permanent and improvised. However, the historical average rate of annual replacement for the entire 10-year period 1971-81 might understate the current rate as housing investment in the second half of the seventies has been higher than for the first half. The foregoing discussion illustrates the problems that are encountered in preparing projections of housing needs. It is best to approach the projections as indicative of the broad magnitudes of future housing needs which enable us to determine the range within which resources have to be mobilised for the housing sector.

Reduction of Crowding

The housing stock of 1981 was occupied by an average of 5.2 persons. About 5% of the stock was occupied by more than one household. It is quite likely that in the Rural Sector a significant proportion of the households voluntarily shared a single housing unit. Meanwhile, if present demographic patterns continue, the average household size would decline further, reducing the pressures of crowding. However, as incomes increase it is quite likely that the need for privacy would also increase. The demand for housing created as a result of the need to reduce crowding will arise from two sources. Multiple households occupying single units will seek separate accommodation. Multiple nuclear families now forming single households will wish to form separate households and move

to separate housing units. This projection assumes that the primary component of crowding is multiple household occupancy of a home. Multiple family occupation is considered a stable socio-economic factor that will continue into the future.

The high estimate of the projection assumes that *sharing of units by households would be limited by the year 1996*. The medium and the low estimates assume that sharing will continue at present levels. Sharing of housing need not be regarded as a negative indicator of involuntary crowding. Often it is a voluntary arrangement, particularly in two-generation households and supports a set of family relationships and an organisation of responsibilities which are stable and socially desirable.

Net family formation

One component of housing demand is generated by new families. It often accounts for more than half the future needs. This demand is generally estimated by taking the projected population and dividing it by an expected household size and then subtracting from it the existing stock. This approach based on broad assumptions regarding average occupancy does not take into account some of the basic motivations which underlie the new demand for housing—the formation of families. If we use family formation as the basis of estimation, ideally one housing unit is needed for each family. Thus, an estimate of the number of new families formed provides us with a direct estimate of the number of new housing units required to accommodate them .

Definition of Family

A family is defined for census purposes as :

- (i) a married couple with or without children, or
- (ii) a parent living with one or more unmarried children.

A new family is formed as soon as a marriage takes place. Since marriages before age 15 are negligible, all those who participate in family formation in the next 15 years are already born. Therefore no assumptions about the future birth rates are necessary. The other two factors that have major influence on this process are rates of survival and marriage. Changes in these rates are generally

small and slow. Thus, estimates based on just two factors of low variability are expected to be reliable.

According to the definition, a family is dissolved when :

- (i) a childless couple is separated by the death or otherwise of one partner,
- (ii) the last unmarried child living with a single parent marries,
- (iii) a single parent living with one or more unmarried children dies.

New housing demand is a function of net family formation—i.e. new family formation less family dissolution. Therefore the new homes needed to house a population at a particular level of satisfaction is lower than the number of new families formed during a given period. This is because some of the new families will be housed in existing homes.

Estimation of net family formation

The total population of Sri Lanka can be divided into three categories :

- (a) never married,
- (b) married,
- (c) widowed, divorced or legally separated (WDS).

Nearly 60 % of the total population are never married, 36.9 % are married and 3.1 % are WDS. The percentage of unmarried females is lower (56.1 %) than for males (62.8 %). But the percentage WDS among females is higher (5.8 %), than among males (1.5 %). Total ever married are 43.9 % for females compared with 37.2 % among males. The disparity becomes clear when data is analysed in 5-year age groups. In the 5-year age groups up to 39 years, more females are or have been married and in all age groups there are more WDS women compared with males.

The female instead of the male distribution is used in computing the process of family formation because they begin the phenomenon earlier than males and outnumber the latter in the relevant age groups. It should be noted that 8.9 % of the adult

(over 14 years) female population is WDS (compared with 2.3 % in males). In estimating the dissolution of families, however, both males and females have to be included. The deaths in this category normally result in the dissolution of households.

Basis of Estimates

To estimate the components of the new family formation, the following data are required :

1. Age distribution of females.
2. Number of female survivors to given ages from a fixed number of children born annually.
3. Age distribution of ever-married women.
4. The age distribution of WDS women.

The estimates in the present study use the Census of Population and Housing—1981 data for 1, 3 and 4, and for 2, the Sri Lanka Life Tables based on the 1971 Census. Age distribution is taken in 5-year cohorts. The number of survivors in each 5-year cohort is calculated using the 1-year survival numbers given in the Life Tables.

Estimates are given in Table 6.

It is possible to make projections for 15 years using the model. However, according to Census data, only 10 % of the female population in the 15-19 age group get married in that age group. If it is assumed that the number of female children born during 1981-86 is the same as during 1976-81, since marriage rates are expected to be stable, the error in predicting the new marriages in the age group 15-19 in 1996-2001 will be of the order of about 1 %. Hence this assumption is made enabling the projection horizon to be expanded to 20 years.

Housing Needs of New Families

The "ideal" housing situation is one in which each family occupies one home. However, in Sri Lanka more than one family sometimes cook, eat and live together as a single household in the same home. This is only partly voluntary. Household members are

divided into three groups : nuclear family (head, spouse, sons and daughters), other relatives, and non-relatives including visitors. According to 1981 Census data, nuclear families form the bulk of the household members (83.2 %) followed by other relatives (13.2 %) and non-relatives (3.6 %)—see Table 6. Dividing the nuclear family further, the sons and daughters (progeny) of the head of household form 50.1 % of the total household members.

If the present level of family merger is allowed to remain, not all the newly-formed families, but only 85 % will need additional houses. The dissolution of families takes place in stages. Death of a spouse does not invariably lead to the dissolution of the family and the release of the house for occupation by a new family. This would depend on the age of the surviving partner and the age of the children. With the ageing of the surviving partner and the marriage of the children, the house passes to a new family, even before he or she dies. The estimate for dissolution of families assumes that this happens at the age of 65 in the case of females and 70 in the case of males.

Based on these facts, three different estimates—high, medium and low—are made for housing needs. The high estimate assumes that each newly-formed family is provided with a house. The medium estimate assumes that 10 % of the newly-formed families will voluntarily share a house, and therefore only 90 % need new houses. The low estimate allows the status quo to continue. All estimates assume that housing units are released in the case of widowed males at death or the age of 70, and in the case of females at death or the age of 65. The estimate of average annual new housing requirements owing to net family formation for the four five-year periods from 1982-2001 are given in the tables. A tentative distribution of this stock between Urban, Rural and Estate sectors is shown in Tables 20, 21 and 22.

The average annual number of housing units that have to be constructed for the ten-year period 1982-1991 in the medium projection will be 165,000, and in the low 152,000. For the succeeding ten-year period 1992-2001 the estimates are 164,000 for the medium and for the low 153,000. Therefore, for the entire 20-year period an annual average of approximately 165,000 housing units on a medium projection, and approximately 153,000 on a low projection would be required.

Three projections

Tables 2 to 5 set out the high, medium and low projections of housing needs for five-year periods from 1982-2001. They are based on different assumptions relating to replacement, reduction of overcrowding and net family formation. The estimates have taken into account a number of variables such as renovation, upgrading, sharing of housing units, which in the Sri Lankan context have an important bearing on the total housing demand. The estimates of net family formation are based on existing population cohorts and prevailing trends pertaining to marriage and mortality.

To some extent, the projections also reflect the process of capital formation in housing as it occurs in Sri Lanka where improvements, extensions and other changes in the housing unit substitute for the construction of new housing units. This is implicit in the assumptions made regarding replacements, reduction of crowding and sharing of households.

However, any change in the assumptions relating to the main variables can significantly alter the estimates of housing needs. Our understanding of some of the processes, such as renovations, extensions, replacements and sharing of houses is as yet incomplete to provide a base for firm estimates. Similarly, the impact of family formation on housing demand needs to be studied more closely. With additional knowledge and information on these aspects the methodology used can be further refined and alternative estimates based on varying assumptions can be more reliably determined.

Conclusion

The projections do not deal with changes in the composition of the housing stock and improvements in quality, but estimate the volume of new house construction required in terms of units. According to past and current trends, the average housing unit is likely to have more space and better amenities. An increasing proportion of the units will fall into the permanent category. An estimate of the volume of investment required to satisfy future housing demand will therefore need to take into account these changes in the average housing unit. The present exercise has not attempted to do this. To identify the qualitative improvements that would go into housing, a much more complex exercise would be required. The effect of

income increases on housing demand would have to be examined and the income elasticities of demand of each important component in the bundle of utilities comprising a home would have to be determined. A simple method would be to project the past trends in the transformation and improvement of housing stock. For either exercise, the data available is not very reliable.

However, later in the study an attempt has been made to provide an indicative frame within which the growth of the housing stock is estimated in relation to the likely flow of resources into housing. In that assessment, the average housing unit in 1980 is taken as the standard in estimating the investment per unit. Given the resource flow it is possible to forecast the growth of the housing stock in terms of the 1980 average unit. This can be compared with the needed stock. If the total number of 1980 units that can be constructed with the available resources exceeds the needed stock, then the surplus represents what would be available for upgrading and for the qualitative improvement of the stock beyond the 1980 average.

TABLE 1
ALL-ISLAND HOUSING NEEDS 1982-2001
 (Annual average number of housing units
 needed in thousands)

<i>Projection</i>		1982-86	1987-1991	1992-96	1997-2001
High estimate	..	196.3	193.8	193.1	168.2
Medium estimate	..	166.9	163.2	166.4	162.1
Low estimate	..	154.8	150.1	152.7	152.5

Note: Extracted from Table 2.

TABLE 2
ALL-ISLAND HOUSING NEEDS 1982-2001
 (Annual average number of housing units
 needed, in thousands)

<i>High Estimate</i>		1982-86	1987-91	1992-96	1997-2001
I. Replacement	..	(74.6)	(63.7)	(58.7)	(42.2)
Permanent	..	13.6	13.6	8.6	4.2
Semi-Permanent	..	48.9	38.0	38.0	38.0
Improvised	..	12.1	12.1	12.1	0.0
II. Reduction of Sharing		10.4	10.4	10.4	0.0
III. Net new families	..	111.3	119.7	124.5	126.0
		<hr/>	<hr/>	<hr/>	<hr/>
		196.3	193.8	193.6	168.2
		<hr/>	<hr/>	<hr/>	<hr/>
<i>Medium Estimate</i>					
I. Replacement	..	(68.6)	(57.7)	(57.1)	(51.8)
Permanent	..	10.5	10.5	9.9	4.8
Semi-Permanent	..	48.9	38.0	38.0	38.0
Improvised	..	9.2	9.2	9.2	9.0
II. Net new families	..	98.3	105.5	109.3	110.3
		<hr/>	<hr/>	<hr/>	<hr/>
		166.9	163.2	166.4	162.1
		<hr/>	<hr/>	<hr/>	<hr/>
<i>Low Estimate</i>					
I. Replacement	..	(65.5)	(54.6)	(54.0)	(53.2)
Permanent	..	7.4	7.4	6.8	6.2
Semi-Permanent	..	48.9	38.0	38.0	38.0
Improvised	..	9.2	9.2	9.2	9.0
II. Net new families	..	89.3	95.5	98.7	99.3
		<hr/>	<hr/>	<hr/>	<hr/>
		154.8	150.1	152.7	152.5
		<hr/>	<hr/>	<hr/>	<hr/>

TABLE 3
URBAN SECTOR HOUSING NEEDS 1982-2001
 (Annual average number of housing units
 needed in thousands)

	1982-96	1987-91	1992-96	1997-2001
<i>High Estimate</i>				
I. Replacement				
Permanent ..	8.2	8.2	3.8	0.0
Semi-Permanent ..	10.9	0.0	0.0	0.0
Improvised ..	2.6	2.6	2.6	0.0
II. Reduction of Sharing	3.1	3.1	3.1	0.0
III. Net new families ..	26.01	27.22	27.43	27.73
	50.8	41.1	36.9	27.7
<i>Medium Estimate</i>				
I. Replacement				
Permanent ..	6.1	6.1	6.1	1.7
Semi-Permanent ..	10.9	0.0	0.0	0.0
Improvised ..	1.9	1.9	1.9	1.9
II. Net new families ..	23.0	23.9	24.1	24.3
	41.9	31.9	32.1	27.9
<i>Low Estimate</i>				
I. Replacement				
Permanent ..	4.1	4.1	4.1	4.1
Semi-Permanent ..	10.9	0.0	0.0	0.0
Improvised ..	1.9	1.9	1.9	1.9
II. Net new families ..	20.9	21.7	21.7	21.8
	37.8	27.7	27.7	27.8

1. 23.5% of national estimate.
2. 22.8% of national estimate.
3. 22% of national estimate.

TABLE 4
RURAL SECTOR HOUSING NEEDS 1982-2001
 (Annual average number of housing units
 needed in thousands)

	1982-86	1986-91	1992-96	1997-2001
<i>High Estimate</i>				
I. Replacement				
Permanent ..	4.2	4.2	4.2	4.2
Semi-Permanent ..	31.2	31.2	31.2	31.2
Improvised ..	9.3	9.3	9.3	0.0
II. Reduction of Sharing	3.1	3.1	3.1	0.0
III. Net new families ..	85.2 ¹	88.82	89.7 ³	90.7 ³
	133.0	136.6	137.5	126.1
<i>Medium Estimate</i>				
I. Replacement				
Permanent ..	3.1	3.1	3.1	3.1
Semi-Permanent ..	31.2	31.2	31.2	31.2
Improvised ..	7.1	7.1	7.1	7.1
II. Net new families ..	75.3	78.3	78.7	79.4
	116.7	119.7	120.1	120.8
<i>Low Estimate</i>				
I. Replacement				
Permanent ..	2.1	2.1	2.1	2.1
Semi-Permanent ..	31.2	31.2	31.2	31.2
Improvised ..	7.1	7.1	7.1	7.1
II. Net new families ..	68.4	70.9	71.1	71.5
	108.8	111.3	111.5	111.9

1. 76.5% of national estimate.
2. 74.2% of national estimate.
3. 72.0% of national estimate.

TABLE 5
ESTATE SECTOR HOUSING NEEDS 1982-2001
 (Annual average number of housing units
 needed in thousands)

	1982-86	1987-91	1992-96	1997-2001
<i>High Estimate</i>				
I. Replacement				
Permanent ..	1.2	1.2	0.6	0.0
Semi-Permanent ..	6.8	6.8	6.8	6.8
Improvised ..	0.2	0.2	0.2	0.0
II. Reduction of Sharing	4.2	4.2	4.2	0.0
III. Net new families ..	0.01	3.72	7.43	7.63
	12.4	16.1	19.2	14.4
<i>Medium Estimate</i>				
I. Replacement				
Permanent ..	1.3	1.3	0.6	0.0
Semi-Permanent ..	6.8	6.8	6.8	6.8
Improvised ..	0.2	0.2	0.2	0.0
II. Net new families ..	0.01	3.32	6.53	6.63
	8.2	11.5	14.1	13.4
<i>Low Estimate</i>				
I. Replacement				
Permanent ..	1.2	1.2	0.6	0.0
Semi-Permanent ..	6.8	6.8	6.8	6.8
Improvised ..	0.2	0.2	0.2	0.0
II. Net new families ..	0.0	2.9	5.9	6.0
	8.2	11.1	13.5	12.8

1. Net new family formation expected to equal net families emigrating.
2. 3% of national estimates.
3. 6% of national estimates.

TABLE 6
NATIONAL HOUSING NEEDS 1982-2001
(On account of newly-formed families (net))

<i>High Estimates</i>				1982-1986	1987-1991	1992-1996	1997-2001
Houses needed for new families	..			668,001	731,413	759,728	787,374
Houses released by dissolved families				96,100	114,609	137,116	157,203
Net new need	..	..	..	591,901	616,804	622,612	630,171
Annual average need	..	..	..	118,380	123,361	124,522	126,034
<i>Medium Estimates</i>				1981-1986	1986-1991	1992-1996	1997-2001
Houses needed for new families	..			619,210	658,272	683,755	708,637
Houses released by dissolved families				96,100	114,609	137,116	157,203
Net new need	..	..	..	523,110	543,663	546,639	551,434
Annual average need	..	..	..	104,622	108,733	109,328	110,287
<i>Low Estimates</i>				1981-1986	1986-1991	1991-1996	1996-2001
Houses needed for new families	..			571,049	607,073	630,574	653,520
Houses released by dissolved families				96,100	114,609	137,116	157,203
Net new need	474,949	492,464	493,458	496,317
Annual average need	94,990	98,493	98,692	99,263

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CHAPTER 5

RESPONSES TO THE HOUSING SITUATION: FINDINGS OF THE MARGA FIELD SURVEY

Introduction

There is a large volume of data available on the characteristics of the housing stock, both at a national and sectoral level. They are based on the Census of Population and Housing, 1981, the Consumer Finance Surveys of 1978/79 and 1980/81, and the Labour Force and Socio-Economic Survey of 1980/81. Being national surveys designed for purposes not specifically related to issues in housing, these do not provide information on key aspects of housing such as household behaviour in regard to investment in housing, the preferences and aspirations concerning housing and the prevailing degree of mobility. The Marga field survey was undertaken to obtain information on some of these aspects such as size of housing in relation to income, tenure systems, preferences concerning location, design and size, and the adjustments made by households in dealing with the current housing situation and its problems.

The analysis of the survey is presented in six sections. The first section briefly describes the methodology and sampling design together with the broad scope of survey. The second section presents a socio-economic profile of the households which includes an analysis of the distribution of housing by size in each of the sectors, and components within sectors. The section contains a similar examination of income distribution and its relation to the size of house. The third section analyses the housing aspirations of different groups, concerning size, design, amenities, and location. It also compares the situation in the government and non-government groups. The fourth section analyses the data on mobility, and its implications for housing and internal migration. It highlights some interesting aspects of the data on latent pressures for urbanisation, which are balanced with a pull from urban to rural areas. The fifth section deals with outlays made by householders on additions and

maintenance, the repayments made by beneficiaries of state housing, the levels of savings, indebtedness, and future plans for housing investment. This part of the survey throws light on the pattern of demand for housing and the nature and volume of the investments taking place. The final section examines the way in which households cope with and adjust to a difficult housing situation, whether through sharing, acceptance of poor housing standards, moving to incomplete or core houses, or using some space for income-earning activities.

Scope and Methodology

The field survey was based on different typologies of households in locations with varied socio-economic characteristics. It used a purposively selected sample, designed for operational and economic feasibility. The survey could be regarded partly as case studies of the various housing conglomerations and typologies in the country. The findings, therefore, relate to specific groups and areas, and cannot be compared with the national or sectoral aggregates obtained from nationally representative surveys and censuses, such as the Central Bank Socio-Economic Surveys, or the Census of Population and Housing.

The locations were selected purposively from the three sectors—urban, rural and estate. The selection was backed by previous research experience in the field. The survey covered a total of 1,068 housing units, 393 in the urban sector, 616 in the rural sector, and 59 in the estate sector, as shown below :

TABLE 1
SAMPLED HOUSEHOLDS BY LOCATION AND TENURE

<i>Locations</i>		<i>Owner Occupied</i>	<i>Rented</i>	<i>Total</i>
Urban				
1.	Colombo M.C. (CMC)	22	6	28
2.	Soysapura Flats (SF)	—	45	45
3.	Armour Flats (AF)	—	30	30
4.	Maligawatta Flats (MF)	—	30	30
5.	Other Urban Areas (OUA)	163	34	197
6.	Slum and Shanty Units upgrading (SSU)	40	23	63
		<u>225</u>	<u>168</u>	<u>393</u>
Rural				
1.	Model Villages (MV)	67	—	67
2.	Aided Self-Help (ASH)	51	—	51
3.	Electoral Housing (EH)	23	—	23
4.	Other Rural Areas (ORA)	445	30	475
	Total	586	30	616
Estate				
			59	59
	Grand Total	<u>811</u>	<u>257</u>	<u>1,068</u>

Five different types of housing were identified in the Urban Sector. These were :

- (1) Slums and tenement gardens
- (2) Row cottages
- (3) Lower class flats
- (4) Middle class houses and flats
- (5) Suburban houses

In the Rural Sector, 20 types of locations were selected based on known agro-climatic, socio-economic, socio-cultural and related characteristics. It further included new housing schemes, such as the Model Villages, the Electoral Housing and the Aided Self-Help schemes which are of recent origin.

The Estate Sector was included to complete the housing sample and elicit information regarding problems in estate housing that were not already available in national surveys. However, no issues of any special significance have emerged from the analysis of this sample.

The stratification in the sample was expected to bring out significant differences in the pattern of housing expectations and responses to housing needs, as between households in state-sponsored schemes and the rest. The OUA and ORA samples represent the housing situation outside the government schemes in the urban and rural sectors, and the data can be compared and analysed accordingly.

The field survey was carried out mainly using the interview method. The head of the selected household was interviewed on a partially structured questionnaire. This method was combined with dialogue and observation.

Socio-Economic profile of households

(i) Income and size of house

The survey data for households in the different locations have been presented in terms of (a) three income categories—below Rs 600, Rs 600 to Rs 1200 and over Rs. 1200; and (b) three sizes of housing units—below 500 sq. ft., 500-1000 sq. ft. and over 1000 sq. ft. (vide Table 2).

In the discussion that follows, the term "income" that is used refers to total income including borrowings. This was obtained by

asking the household about its total expenditure in rupees during the past month.

The urban sample contained 70 % of houses with floor area of under 500 sq. ft. The SSU scheme had the highest proportion, i.e. 97 % within this category, while the OUA had 59 %, and CMC sample contained 50 %. The government flats were mainly units of standard design under 500 sq ft. The Soysapura and Maligawatte flats, however, had a few larger units.

The medium-sized houses between 501 and 1,000 sq ft. were fewer in number, occurring mainly in the OUA. The houses over 1000 sq ft. were mainly in the OUA 11 %, the CMC 18 % and the MF 10 %.

In the rural sector, houses below 500 sq. ft. accounted for 63 %. The MV sample came within this category. Housing units of this size accounted for 76 % of the ASH sample, 78 % of the Electorate Scheme sample, and 56 % of the ORA sample. In the Estate sample, too, 66 % were of this category.

The share of medium size, between 500-1000 sq. ft. 31 % in ORA, 23 % in ASH and 22 % in EH. In the Estate sample it was 27 %.

Houses above 1000 sq. ft. were encountered only in the ORA sample; the estate sample had 7 % of such units occupied by higher officers in the estate.

The total sample included categories of households, which did not have much variation in the floor area within them. However, income and floor area were significantly related in the case of ORA and OUA.¹ That is, higher the level of current income (expenditure) of the household, larger the size (floor area) of the home they occupied. Nevertheless, a significant proportion of households for all income categories were observed in the small size (below 500 sq ft) homes. This can be due to various reasons. Households which are older may have reached the stage of the life-cycle when current earnings (expenditure) are low; the large homes reflect past investments and accumulations of wealth. Those that occupy relatively small homes now but have high current income are starting the process of consolidation and accumulation in the form

1. The Chi-squared statistics for a contingency table of 2 floor area groups -500 sq. ft. and 500+ sq. ft. 3 income groups as defined in the text wher for OUA—10.05 and ORA—28 respectively. The null hypothesis, Ho. of no relationship between income and floor area, was not accepted at $\alpha = 0.01$ level of significance in both cases.

of larger homes. This fits with the evidence of upgrading and incremental housing acquisition obtained from the 1981 national census of population and housing.

(ii) Tenure

When the occupants of government flats and other government-sponsored housing schemes are considered as 'owners'—which for

TABLE 2
AREA OF HOUSEHOLDS CLASSIFIED BY HOUSEHOLD
EXPENDITURE INCOME GROUPS

	Floor Area (sq. ft.)	Income Groups (per month)			Total
		Rs. 0-600	Rs. 601-1200	Over Rs. 1200	
OUA ..	0 — 500	20	46	50	116
	501 — 1000	5	20	34	59
	Over 1000	—	4	18	22
	Total	25	70	102	197
SSU ..	0 — 500	1	22	38	61
	501 — 1000	—	1	1	2
	Over 1000	—	—	—	—
	Total	1	23	39	63
CMC ..	0 — 500	4	—	10	14
	501 — 1000	—	—	9	9
	Over 1000	—	—	5	5
	Total	4	—	24	28
SP ..	501 — 1000	—	1	14	15
	Over 1000	—	—	—	—
	Total	—	4	41	45
AF ..	0 — 500	4	7	19	30
	501 — 1000	—	—	—	—
	Over 1000	—	—	—	—
	Total	4	7	19	30
MF ..	0 — 500	2	8	15	25
	501 — 1000	—	1	1	2
	Over 1000	—	—	3	3
	Total	2	9	19	30
ORA ..	0 — 500	86	113	68	267
	501 — 1000	35	57	56	148
	Over 1000	1	16	43	60
	Total	122	186	167	475
MV ..	0 — 500	25	32	10	67
	501 — 1000	—	—	—	—
	Over 1000	—	—	—	—
	Total	25	32	10	67
ASH ..	0 — 500	19	20	—	39
	501 — 1000	3	4	5	12
	Over 1000	—	—	—	—
	Total	22	24	5	51
EH ..	0 — 500	1	15	2	18
	501 — 1000	—	5	—	5
	Over 1000	—	—	—	—
	Total	1	20	2	23
ESTATE ..	0 — 500	11	20	8	39
	501 — 1000	1	11	4	16
	Over 1000	—	—	4	4
	Total	12	31	16	59

all purposes they are—the tenure system is not widely different in the two sector samples. The urban sample then comprised 80 % owner – occupied and 20 % rented houses and the rural sample has a higher proportion (95 %) owner-occupied and only 5 % rented houses.

(iii) Source of income and dependency

The Urban Sector

Considering the locations separately—the urban sample contained a wide variation in chief occupant's income and source of income.

In the SSU, the incomes are mainly from salaries and wages (70 %), but more than half of them are from casual employment, a small proportion received pensions or charitable allowances, a smaller proportion was in own account business. Thirty per cent of these units have family members employed in the Middle East. The dependency rate is 4.6 per income earner.

The SF and MF had more than half of the chief occupants in salaried occupations, a few pensioners and a small number engaged in business. In contrast, in the AF more than half the chief occupants had a pension or charitable allowance, the balance were in salaried occupations or in business. Nine persons from AF and 7 from SF are employed abroad and send regular remittances. The dependency rate per earner is less here, being only 2.5 in SF, 4.1 in AF and 3.2 in MF.

The CMC sample had wide variations in both income and size of house. 39 % of the chief occupants were salaried employees and 29 % had income from property or business, while 14 % were casual employees and 18 % depended on charitable allowances. Three members of this group were employed abroad. The monthly income ranged from Rs. 500 to Rs. 10,000, although only a small proportion had high incomes. Half the houses in the sample were 500 sq. ft. or less, and it had the highest proportion of multi-family households. The dependency rate was low, only 2.8 persons per earner. In the smaller houses where occupancy rates were closer to 8 persons per household, congestion was a serious problem.

In the OUA 40 % of the employed household heads were salary earners and 26 % engaged in business and 20 % in casual employment. A smaller number in this group are employed abroad. The dependency rate per earner is 2.8.

The Rural Sector

The ORA sample had 37 % in salaried occupations, 32 % in business and 23 % in casual employment. A few households have members employed abroad. The dependency rate per earner is 2.8 and in line with that in the OUA sample.

One-third of chief occupants in the government-sponsored housing schemes are in salaried occupations, 40 % are casual employees and 20 % in small trade. Eight of the households have members employed abroad. Dependency rate per earner is low, being only 1.9, 2.0 and 3.3 respectively in EH, ASH and MV.

Differences between state-sponsored housing and other housing

In terms of income, in the urban sector, the proportion of low income households was highest in the other urban area, approximately 12.5 % being in the income category below Rs. 600 per month. In the state-sponsored schemes the proportion was 5.6 %. The preponderant majority in the state schemes, approximately two-thirds, earned over Rs. 1,200 per month as against 52 % in the other urban areas. In the rural sector, the variations in income distribution as between the two categories of households were not as pronounced. The proportion in the lowest income group was larger in the state-sponsored sector than in other rural areas—34 % as against 25 %. This probably reflects the selection criteria in the rural sector where the poor households get priority. This is further confirmed by the fact that the proportion of incomes above Rs. 1,200 was much lower in the state-sponsored housing than in other rural areas—12 % in contrast with 35 %.

These differences in income patterns between the two categories of housing might now be compared with the differences in the size of housing in these two categories, for both the rural and urban samples. In the urban sample, 74 % of the housing provided by the state sector was less than 500 sq. ft., while it was only 58 % for other urban areas. In the slum and shanty component we saw that

it was 96 %. In the rural sector, the ORA had a share of small houses which was significantly lower than in the state-sponsored schemes—56 % as against 88 %. It would appear that the state-sponsored rural housing programmes were directed at the lowest income deciles for their housing needs, to a greater degree, than in the case of urban housing in the state-sponsored housing schemes. This will be reflected in the responses of these two categories to the questions relating to housing aspirations and their state of satisfaction with current conditions. Nevertheless, the pattern of distribution of floor area for OUA and ORA was not significantly different.²

Aspirations and Expectations

(i) Built space

The query on aspirations was made in a manner which elicited a response from householders even if they had no definite plans to acquire a new house or to modify an existing one in the immediate future. The response was not necessarily related to an ability to fulfil their aspirations. The responses were significant, however, in displaying some very specific ideas about size and design of the house they would like to possess. It was also significant that these households occupying recently-built government flats in Soysapura in the urban sample and those belonging to the government Udagama schemes did not respond to this at all. This probably indicates that for the present their aspirations regarding housing have been satisfied. Considering that selections are made for the houses from long lists of applications, those selected felt themselves to be a privileged group.

Among the different types of urban households, the level of satisfaction with current housing space was different. Those in the SSU category occupying the smallest-size homes (less than 500 sq. ft.) showed the highest level of satisfaction with the current size. In general the government flat or apartment occupants seemed to have a higher level of satisfaction with current size homes of small size than all groups except estate households. This, perhaps, reflects a situation where households were satisfied with smaller homes because they had other housing-related features; access to income

2. The Chi-squared value for 2 x 3 contingency table was 0.485. The null hypothesis H_0 that floor area distribution is the same for OUA and ORA is not rejected at $\alpha = 0.01$ level.

TABLE 3

FLOOR AREA OCCUPIED AT PRESENT AND DESIRED AREA

Sampled	Floor Area, Number and Percentage of Households											
	100-500 sq. ft.		501-1000sq. ft.		Over 1000 sq. ft.		Responses		Total			
	At Present	Desired	At Present	Desired	At Present	Desired	Responses	Sample				
Total	706	197	268	426	94	104	727	1068				
	66	27	25	58	9	14	100	100				
OUA	116	8	59	111	22	19	138	197				
	59	6	30	80	11	11	100	100				
SSU	61	38	2	15			53	63				
	97	72	3	28			100	100				
CMC	14		9	4	5	22	25	28				
	50		32	15	18	74	100	100				
SF	30		15					45				
AF	30	13		15		2	30	30				
	100	43		50		6	100	100				
MF	25		2	15	3	15	30	30				
	83		6	50	10	50	100	100				
ORA	267	110	148	221	60	46	375	475				
	56	29	31	59	13	12	100	100				
MV	67							67				
ASH	39	4	12	21								
	76	16	23	84			100	100				
EH	18	4	5	7			11	23				
	78	36	21	63			100	100				
ESTATE	39	20	16	17			37	59				
	66	54	27	46	6		100	100				

and employment. However, in the OUA category, the desired house was clearly larger than the current one. Perhaps, these urban settings did not have the access features which contributed to off-setting the disadvantages of small size. The available data do not contradict this line of reasoning. The OUA households had lower average income than those in and around Colombo, but desired larger homes. Meanwhile, Colombo may be perceived as providing greater economic opportunities for its residents.

In the CMC sample, half the households lived in houses under 500 sq. ft. (50 %). None were satisfied with houses of this type. While 15 % desired a house of 501-1000 sq. ft., the balance did not specify an area but merely desired a 'bigger house.' In the government flats which comprised mainly units of floor area between 100 and 500 sq ft., the majority desired a 'bigger house of 501-1000 sq. ft. (50 % in AF and 50 % in MF). In the MF no one desired the existing floor area of 100-500 sq. ft., while in the AF 45 % opted for this small unit. In the SSU, 72 % opted for the small-sized units below 500 sq. ft., while only 28 % wished to occupy units between 501-1000 sq. ft. These somewhat moderate aspirations of households in slum and shanty units are probably influenced by their present living conditions and their realisation that prospects for larger housing units would be unrealistic. We saw that 97 % of these households occupy units below 500 sq. ft.

In the rural sector, the size of the currently occupied home was unsatisfactory for almost all categories. When the ORA and ASH groups are examined, the aspirations for larger homes is clear. The OUA and ORA had a similar distribution of the desired size of home but had different income distributions; OUA was skewed towards the higher income level compared with ORA.¹ Rural households desire larger homes even though they do not currently possess the ability to obtain them. Those currently in ASH homes expressed a clear desire to have more space. Therefore, it is quite likely that these households will consolidate, add and improve their homes in the future. Nevertheless, the desire for larger homes in the case of ASH households has to be viewed in terms of their ability to obtain it.

1. The Chi-squared value, for H_0 : OORA OUA have a similar pattern of desired home size based on a contingency table 2×3 , was 4.06. Table value at $\alpha = 0.05$ was 5.99. The null hypothesis, H_0 : is not rejected. Similarly, calculated Chi squared is 20.8 for table with income distribution. H_0 : ORA, OUA have similar income distribution, is rejected at the 0.05 level.

More than two-fifths of these households had monthly incomes which were less than or equal to Rs. 600. Among ORA households, the corresponding proportion was only one-quarter.

The proportion of ORA households currently in homes of less than 500 sq. ft. was smaller than for the ASH households, 50 % and 16 % respectively. Yet, a larger proportion of the ORA homes desired (or were satisfied with) homes of at most 500 sq. ft., 24 % compared with only 16 % for the ASH. The ORA income distribution was skewed towards the middle and upper levels compared with ASH.

The Electoral Housing (EH) sample also demonstrated a pattern of expectations similar to those in ASH housing. However, their incomes were close to the middle level. (Rs. 601-1200).

In the Estate Sector, 46 % opted for houses of 501 to 1000 sq. ft and 54 % for houses between 100 and 500 sq. ft. The latter are households who live in line rooms which are closer to the lower limit of 100 sq. ft. and who aspire to a bigger house closer to 500 sq. ft. The response in this sector was influenced by the fact that staff housing was available for occupation only during the period of employment of the individual on the estate. Larger housing space was, however, a basic aspiration of the respondents in the sample

Considering space and occupancy in these households, the average floor area per person in a unit is smallest in the SSU sample, i.e., 36 sq. ft. and each unit carries an average of 6.2 persons. In the government flats in the urban sample, the congestion is less, having an average of 44 sq. ft. to 89 sq. ft. per person and carrying 5.2 to 8.8 persons per unit. Congestion was high in the CMC sample, while it eased off in the other urban sample which had 100 sq. ft. per person and carried 6.1 persons per unit.

The least congestion was in the other rural sample where an average household of 5.6 persons had a square area of 157 sq. ft. per person. The government-sponsored rural housing schemes, too, had relatively low congestion in the houses where the floor area per person ranged from 75 to 110 sq. ft.

The highest level of satisfaction with current housing was for those in the SSU and in AF. Both groups have adjusted to an

urban living environment where housing space was scarce and access features of the locations were very favourable. Dissatisfaction was high among those who were in the state-sponsored rural housing, ASH and EH and households in OUA. Both OUA and ORA households occupied homes with a similar size distribution and the distribution of the desired floor area was not significantly different. Normally, the satisfaction with current size of home is partly related to present income levels. The desired homes reflect expectations for the future based on expected future incomes. However, in the case of the ORA and ASH, the aspirations did not seem consistent with their present incomes and possibilities of the future. Nevertheless, it is likely that many of these households were young and that their aspirations reflected long-term possibilities.

(ii) Garden Space

A majority of the households expressed a clear desire for garden space. Two-thirds of the urban dwellers and 56 % of OUA desired small plots attached to their houses, while in the other rural sample 57 % wished to have larger plots suitable for cultivation. On the other hand, ASH and Electoral schemes showed preference for smaller plots. It was significant that the flat dwellers in the city aspired to houses with gardens attached.

(iii) Design

Housing meant more than shelter to many people, even some in the lower income category. About 76 % of the urban sample and 68 % of the rural sample responded very specifically to design. Some persons in the low and middle income levels who could not articulate any particular model they desired and, therefore, did not respond to the query on design, did however express their dislike of the design of the present dwelling. There were 73 % of the SSU sample, 68 % of the Maligawate Flats, 33 % of the AF, 68 % of the other urban sample, who disliked the designs of the present houses. In the rural sample, except in the electoral schemes, where most appeared to be satisfied, 60 % of the ASH sample, 50 % of the Model Village sample, and 41 % of the ORA sample, disliked the design. The desire for privacy within a house was clearly expressed where all those stating preferences specified separate bedrooms. A significant proportion, particularly in the rural sample, desired detached

24-35c.c
kitchens. Meanwhile some showed definite preference for attached kitchens. It is very clear that these preferences reflect differences in cooking facilities. For example, households using open hearths are likely to opt for detached kitchens. Another important factor highlighted was the inclusion of a verandah in the design by almost all the respondents who specified design. Even though SSU households expressed a high level of satisfaction with the present floor area, they were clearly dissatisfied with overall arrangement and design of the house.

The arrangement of space was not the only design feature that contributed to housing satisfaction. Ventilation was an important feature, which, according to those who lived in type-plan houses, had not received adequate attention.

The dissatisfaction with current designs applied to both urban and rural sectors and included the state-sponsored as well as other private housing. The only exception was the Electoral Housing Scheme where there was no adverse comment on design, although the majority was not satisfied with the space available. These responses indicated that occupants had particular housing needs which were not met by present designs. This is an area which needs further inquiry and field observation that can lead to appropriate technology and architecture in housing.

(iv) Location and Amenities

Amenities were a major concern of many respondents in the sample. Availability of water, electricity and transport featured largely in their aspirations regarding housing and location. They were a major factor influencing the choice of location and of residence.

(a) Water

As expected, the urban households had access to pipe-borne water. Households within CMC and those in SSU depended primarily on communal pipe-borne water. Access to piped water is not, however, widespread in the urban sector. In the OUA, half of the households depended on wells for their water.

In the rural samples, the wells predominate as the primary source of water. The component of sharing was similar to the different rural categories; about half of those who used wells shared them with others. The distance to water was less than 100 yards for the average household in all categories. However, both in the OUA and ORA about one out of every six households had to obtain water from more than 100 yards away.

(b) Toilets

More than one in ten of the OUA households did not have a formal toilet. The corresponding proportion in the ORA was nearly four times larger. In the urban areas water-seal toilets were the primary facility for all groups of households. In the rural sector pit latrines predominated. The new housing developments in the rural sector, ASH and MV had high proportions of households without formal toilets. This is, perhaps, evidence that toilets in the rural sector are not felt as an urgent need, compared with shelter and space

It was noted from dialogues with the householders that persons in all income groups disliked common latrines and common sources of water. This applied to street taps, common wells and shared latrines. It was noted that those in the upper income strata in the sample—over Rs. 1200 per month—wished to have more than one toilet for a house. There was also a prejudice against pipe-borne water expressed by those particularly in the rural areas and some others in the urban sample. Their contention was that this water carried rust from the pipes and also that often pipes ran dry, and, therefore, a well was preferred even by some urban respondents provided they had a little garden space available.

(c) Lighting

Excluding the government flats in the sample, which are all provided with electricity, only 15 % of the rest of the urban sample had electricity. In the rural sample only 14 % had electricity. The majority of households used kerosene for lighting.

TABLE 4

HOUSEHOLDS BY AVAILABLE FACILITIES, DISTANCE TO SOURCE OF WATER AND MILEAGE TRAVELLED TO WORKPLACE BY WORKERS IN HOUSEHOLDS

	Urban Location						Rural Locations			
	OUA	SSU	CMC	SF	AF	MF	ORA	MV	ASH	EH
Water:										
Pipe	44	1	13	37	30	30	34	—	—	—
Street pipe	53	62	15	8	—	—	22	—	3	—
Private well	77	—	—	—	—	—	285	30	20	9
Community well	21	—	—	—	—	—	124	37	27	14
Stream/Tank/River	2	—	—	—	—	—	10	—	1	—
Toilets:										
Attached	54	3	16	37	30	30	37	—	4	22
Detached	112	14	11	8	—	—	60	43	41	1
Shared	7	32	—	—	—	—	1	—	—	—
None	24	1	1	—	—	—	71	74	6	—
Type of Toilet:										
Unspecified	—	46	—	—	—	—	—	—	—	—
Bucket	12	9	—	—	—	—	7	—	—	—
Pit	58	—	—	—	—	—	232	37	29	1
Water seal	80	4	16	6	—	29	160	6	16	22
Flush	9	3	10	39	30	1	5	—	—	—
Distance to water:										
0 — 100 yards	137	56	10	—	—	—	289	49	37	23
101 — 200 "	26	—	—	—	—	—	28	—	7	—
Over 200 "	4	—	1	—	—	—	34	—	3	—
Mileage to work: (No. of workers)										
0 — 6 miles	147	61	29	9	86	28	260	19	34	14
7 — 12 "	4	1	31	29	3	—	11	4	9	2
Over 12 "	25	—	1	5	3	2	55	5	3	7

TABLE 5

DESIRED LOCATION AND FACILITIES

Sampled Locations	Desired Location and Facilities			Total
	RURAL Electricity Water Transport	URBAN Electricity, Water	RURAL | URBAN Electricity, Water, Transport	
OUA	No.	No.	No.	No.
SSU	31	98	9	138
CMC	7	42	4	53
AF	—	26	—	26
MF	3	27	—	30
ORA	—	30	—	30
ASH	225	95	57	377
EH	20	3	2	25
ESTATE	10	—	1	11
	15	12	10	37

(d) Distance to work

Distance to work was an important consideration in the choice of location of residence. In the OUA and the ORA, about 85 % of the householders lived within six miles from their workplaces. Among

the urban housing groups, the SSU and AF which had the highest levels of satisfaction with the size of present houses, also had the highest proportions of workplaces located within 6 miles from home. These households seemed to have assessed the advantages of location with those of space and ended with a combination which had better access and less housing space. The two sub-samples had income distributions which were similar.

In the rural sub-samples, the proximity of workplaces to the houses was not as pronounced as in the various urban sub-samples. The ORA households seemed to commute longer distances than the others. The state-sponsored programmes seem to have drawn occupants who worked closer to home than those in ORA. Another possible reason is that the state schemes were located close to employment centres which engaged members of the households, indicating that by and large, workers either attempted to live within reasonable distances from their workplaces, or in the alternative, they attempted to find work within reasonable distance from their homes, whether it is in the urban or the rural sector. In instances where they were compelled to live far away from workplaces, transport and roads were a major concern, as expressed by respondents.

(e) Environmental Factors

Although environmental factors were not specifically referred to in the aspirations, their perceptions regarding present environment was a fair pointer to their attitudes towards surroundings.

The majority of households in various locations had no major complaints against sewage disposal, drainage of water or unhygienic surroundings. Dissatisfaction with these amenities and conditions was, however, expressed by 25 % in the SSU and 33 % in the other urban sample. Similar concerns were also expressed in the rural sample, by 10 % regarding unhygienic surroundings, and by 25 % regarding sewage disposal and drainage of water. On the whole, households did not seem to attach much importance to the need to maintain a clean environment.

Mobility

The period of residence in the locality or home can be considered a good indicator of mobility or its absence. The majority of households revealed a tendency to occupy the same house and reside in the same locality for long periods. This factor was revealed also in dialogues with households where some in the upper and middle level income groups looked for houses away from their rural localities and closer to urban areas for their children. Some of those in the lower income groups were of the view that if necessary resources could be found they would prefer to renovate and expand these houses rather than move out of the locality!

The survey data reveal that the majority of the households in the sample have lived over 20 years in the same locality. This was true of households in all locations in the urban and rural samples. In the urban sector, 71 % of OUA residents, 79 % of the Colombo MC residents and 52 % of residents in government flats had lived in the same locality for about 20 years. In the rural sample, too, 60 % lived in the same locality for over 20 years and 15 % lived between 11 and 20 years. This was true of all locations in the rural sample, indicating that even government-sponsored housing schemes tended to settle people within their accustomed environments. This phenomenon was not necessarily linked to ownership of houses, although a preponderant majority of owner occupants, i.e., 89 % in the urban sample and 83 % in the rural sample lived over ten years in the same locality. A majority of the tenants too had long periods of residence in the same locality.

The inquiry was further extended to estimate the length of residence in the same *house* by the chief occupants. Here too, it was established that there were long periods of residence in the same dwelling among a fair proportion of households. There were 64 % of households in the 'other rural' sample and 55 % in the 'other urban' who lived for over ten years in the same house. The government flats in the urban sample and the MV, ASH and Electoral Housing Schemes in the rural sample, being of recent origin, were not relevant to this inquiry.

The survey revealed that most of the sampled households wished to remain in their present localities or homes. In examining the factors which kept people from moving out, it was found that

'ownership' was one of the dominant reasons. It accounted for a large proportion of the responses in the rural compared with urban sub-samples. While reasons like 'no other place to go' indicate lack of options for mobility, other positive reasons were employment, education and other facilities given by 39 % of the respondents in the urban sample and 30 % in the rural. In the rural areas, the facilities valued were those pertaining to agriculture, fishing and farming, and amenities such as transport, personal as well as commercial services and water supplies.

Relating these observations to individual locations in the sample, it was found that while the fact that their present residence was their native place was an important consideration for the OUA households, and even more so in the rural samples 'ownership of house' figured largely in the flats, as in the ASH, Model Village and Electoral Schemes. Employment and education were mainly mentioned as factors in other urban areas, other rural areas, city flats, in estates and in the ASH schemes. Employment was of course a critical factor, with agricultural employment assuming importance in rural areas, commercial and administrative employment in the urban sector.

A significant proportion (over 10 %) of the households, both in the urban as well as the rural sub-samples, wished to move from their current locations. The data revealed the tendency for movement both from rural to urban as well as urban to rural locations. At the same time, some households in the urban sector wished to relocate within the metropolitan centre. Among the urban householders, the main reasons for desiring to relocate in rural areas were the desire for more land for agricultural activities, the wish to return to the native village, or ancestral locality, and the need for more living space. Nearly one-quarter of the households in the OUA, however, wished to relocate closer to the Colombo city. It is this group which contained the highest proportion of urban commuters travelling more than 12 miles to work. However, this group also included the largest proportion of households dissatisfied with the current size of their home. The aspirations of this group which include both close proximity to the city centre as well as larger sized home cannot be easily realised. Larger homes closer to Colombo

will be more expensive. In fact, the shorter commuter time or distance is one factor which makes houses closer to Colombo more expensive than those located farther away from the city.

In the rural sector sub-samples, a similar type of desire to relocate was expressed. While households wished for locations with more space in the rural sector, a small proportion, 5%, wished to relocate in an urban setting. Among the various rural sub-sample households, locational preference was strongly associated with amenities. However, given the same amenities, of electricity and water service, one-quarter of the households in the ORA preferred an urban location over a rural one. Nevertheless, nearly three-fifths of the ORA were satisfied with rural locations which had better water, electricity and transport services. Provision of improved amenities is, therefore, a major factor which will deter migration to existing urban areas.

The survey examined those factors which determined the current choice of location. Ownership seems to have been a dominant factor for households in the sub-samples of both the urban and the rural sectors. The government-sponsored schemes drew households who stated that ownership was the primary factor determining their choice. It compensated for the possible shortcomings of the location. Meanwhile, intra-family transfers, inheritance, gift, dowry, etc. and thereby ownership, determined location for over two-thirds of the various urban sub-groups and three-quarters of the rural sub-group households. Factors such as cost and proximity to services and access to amenities became an important determinant of the choice of location only for a small proportion of the households.

Nearly all the Armour Street flat dwellers gave employment as their reason. It is probable that as this area had not originally been a residential area, the flats were built to house workers who were employed in and around the commercial centre. Employment was, therefore, the primary reason for moving into these flats.

Households have not shown a tendency to move from location to location. They either prefer current locations above all other available choices or the opportunity set is indistinct and unclear. Perhaps, the process of obtaining housing is difficult and complex. A clear knowledge of the relative benefits of new locations is not easily obtained and the information not contained in the "price".

Households do not move partly because doing so entails enormous cost. In a situation where the economy grew relatively slowly where employment generation was sluggish, mobility could not have been high. Therefore, new choices were not being generated to the extent of altering locational preferences.

The implications for policy contained in this area of investigation are important from the point of view of housing strategy and planning. There are a few items which need to be examined further for their implications for the rate of urbanisation. About 5% of the households in the rural sample wished to move into urban areas, and 28% of those in other urban areas desired locations close to the city. Both these statistics indicate a relatively strong latent pressure for urbanisation given the resources and facilities. As against this, however, as many as 22% in the other urban areas preferred the rural areas, and in the rural areas themselves we saw that a significant proportion who expressed the desire to move out, preferred rural areas where cultivable land was available. Some of these issues need to be examined in greater depth and more detailed information obtained on the socio-economic characteristics of these groups of households in relation to mobility and locational preference.

Affordability and mobilisation of resources for housing

Information on past, present or planned outlay on housing was sought from many sub-samples. There were inquiries relating to the use and purpose of savings, outlay on repairs, maintenance and expansion in 1981 and 1982, and planned outlay on renting, building, or purchasing a house. The occupants were first questioned on the manner in which the land was obtained originally. In the urban sample, the majority had either inherited or had been gifted the land they occupied. A significant proportion of the OUA were squatters, nevertheless they had been at the current location for an average period of nearly one decade. In the ORA inherited land accounted for a larger proportion than in the OUA. In the ASH, MV and EH schemes of the government, land was considered a gift from the government (21% of the rural sample comprised these). About 14% squatted on the land they occupy. The statistics relating to squatting are significant. They indicate that problems of tenure are not negligible in both the urban and rural samples. To the

extent that there is uncertainty of tenure, occupants are unlikely to invest in the improvement of their housing.

(i) Future plans for investment in housing

About one-fifth of the total sampled households had plans to build, rent or purchase a house. The survey, however, did not inquire whether respondents wished to build additional rooms and extensions to the present house. The responses are, therefore, likely to include investments on both a separate unit as well as extensions, additions and annexes to existing houses. A separate house would be clearly indicated in the case of respondents who did not have land. Taken as a whole, the data help us to determine the broad order of magnitude in respect of the demand for additional or new living space in the entire sample. We can assume that it is a demand arising out of a host of factors, including multi-family households, congestion and dissatisfaction with present housing units. The proportion of households planning to build or buy a house varied among the different urban categories. About a fifth of the OUA households expressed that they were planning to build. The proportions for the Colombo city (CMC) households and those for SSU were lower, about 15%. The plans to build are related to levels of satisfaction with current housing. As noted earlier, the OUA had the least satisfaction with current housing space. Therefore, plans for more housing from this group are to be expected. For the ORA a pattern similar to OUA was observed, nearly one-quarter of the households planned to purchase more housing. As already observed the ORA were the most dissatisfied with current housing. The other households in the rural areas had obtained housing through the state-sponsored programme in the recent past, and most likely were for the time being satisfied with their present housing.

Among the OUA households which were planning to acquire more housing, nearly half did not have land to build. Even among those who currently owned a house, a significant proportion wished to obtain another house, but did not own land on which to build. The OUA households which had land and planned to build included those who were at present in rented homes (one-third of the OUA with land). These were primarily households at the upper income level (over Rs. 1,200).

The financial outlay households were prepared to make on this kind of investment was strikingly unrealistic and was not in keeping with the existing rents and prices of houses and land. In both samples, the majority of those who wished to invest in a house with or without land, were owner occupants i.e. 85%. It is likely that the majority of such households were either dissatisfied with their present houses, or wished to provide a house for one of their children. The survey, however, did not investigate the reasons which prompted the responses. We could also assume that in some of these cases, the demand for additional space would be met by an expansion of the existing house.

In the rural sample of those who had land and wished to invest in a house, 50% could pay only monthly. These belonged mainly to the income group receiving under Rs. 1,200. per month. The majority could pay between Rs. 25 and Rs. 500 per month. There were eight households receiving over Rs. 1,200 per month each, who could pay a sum of Rs. 250 per month. Of the 50% who opted to pay at once and/or monthly, the majority drew over Rs. 600 per month in income. The maximum deposit they could make 'at once' on a house was Rs. 5000. The majority of the households could not pay more than Rs. 2000 in one instalment; there was one, however, who could reach Rs. 7000.

In the urban sample the majority of aspirants to both house only and house with land, belonged to the income group of over Rs 1200 per month, i.e., 68%. Here too, 53%, could pay only monthly instalments between Rs. 25 and Rs. 350, and were mainly those whose incomes were over Rs. 600.

The financial outlays these households were willing to make do not include the value of household labour and the materials collected or fabricated by them. In many instances, this would amount to a substantial part of the total resources required for the house. Although the direct amount that the households were willing to spend seems unrealistic, that sum is also a reflection of either their ignorance of prevailing prices in housing or their willingness to provide a large part of the necessary resources through other means.

TABLE 6
HOUSEHOLDS WHICH WERE PLANNING FINANCIAL OUTLAY FOR ACQUIRING A HOUSE, OR
HOUSE AND LAND, BY INCOME GROUPS

Locations	HAD LAND						NO LAND						Total
	Rs. 0-600		Rs. 601-1200		Over Rs. 1200		Rs. 0-600		Rs. 610-1200		Over Rs. 1200		
	Owned	Rented	Owned	Rented	Owned	Rented	Owned	Rented	Owned	Rented	Owned	Rented	
OUA	1	—	3	1	9	6	—	—	2	6	9	2	43
SSU	—	—	2	—	11	1	—	—	—	4	6	—	25
CMC	—	—	—	—	—	1	—	—	—	—	—	2	5
SF, AF, MF	—	—	—	—	—	4	—	—	2	—	—	—	35
ORA	10	8	30	1	13	3	9	11	2	—	23	—	106
EH and ASH	1	1	2	1	—	—	—	—	—	—	—	—	110
													5
													115

(ii) Outlays made by households on additions, maintenance and repairs

The survey obtained data on maintenance of and addition to houses, carried out in 1981 and 1982. Altogether 30 % of all households in the urban sample and 30 % of the rural sample had spent money on these activities in these two years. Of these, 15 % in the urban sample had added rooms and verandahs spending an average ranging from Rs. 5000 to Rs. 8000 approximately; 85 % of them had spent on maintenance and repairs on average ranging from Rs. 800 to Rs. 9500 approximately. Those in government flats had not carried out any repairs or additions since these came within the purview of the government housing authority. In the SSU, 19 % had carried out repairs or made additions to their houses. The proportion making such investments was 39 % in the 'other urban' sample and a very high 75 % in the CMC sample. In the rural sample, of those who had incurred expenditure on housing, about 20 % of the householders had expanded their houses at an average cost of about Rs. 6400 and 80 % had spent on maintenance an average of about Rs. 2700. In the rural sample too, as in the urban, households in the government-sponsored schemes had not spent any money on their houses so far, whereas in the OUA sample 38 % of householders had repaired or expanded their houses. It would, therefore, be seen that in the total sample, about 5 % to 6 % of households had made some investment on expansion and additions to their houses, during a period of two years.

(iii) Repayments and Rents

The payment of monthly rents or loan repayments could also reflect the financial outlay on housing. The total number who had responded to this question in the urban sample was only 171 which included tenants paying rent and owners repaying loans) whereas there were 194 tenants alone in the sample—who would all be expected to pay rent. In the rural sample there were responses from 134. The situation here was unusual because dwellers in the MV, ASH and Electoral schemes considered themselves owners of their houses which they said were gifts from the government. Some occupants, however, responded to the question of payment. A few persons in the ASH and Electoral schemes had actually paid their dues the previous month. Only 63 % of the MV occupants

had responded to the query. All of them said they had not yet started to pay, but expressed their intention to do so .

Altogether 44 % of the urban sample and 22 % of the rural sample responded to the question on monthly payments. In the urban sample, the proportion that had to make a monthly payment whether as rent or loan repayment, was highest in the income group of over Rs. 1200 per month, i.e., 67 %. It was next highest in the income group Rs 600 to Rs 1200 a month, i e , 28 %, and lowest in income group Rs 0-600 a month, i e , 5 %. The rural sample was considered excluding the MV respondents. Here, half of those committed to monthly payments was in the income group Rs. 600 to Rs. 1200 per month. The next highest proportion was in the lowest income group of Rs 0-600 per month, ie , 34 %. and the balance lowest proportion, 16 %, were within the income group of over Rs. 1200 per month

A significant proportion of these households were defaulting in the payment of their dues, i e , a relatively low 16 % in the urban sample and a very high 73 % in the rural sample (excluding the MV respondents). The payments were, therefore, much better in the urban sample where most of the households were in the income group over Rs. 1200 per month. But surprisingly, although the proportion of those in the income group below Rs. 600 was quite low, about 5 %, the rate of default was lowest in this group—1 out of 6. In the rural sample, the highest proportion, i.e. 40 %, who were able to pay regularly, were in the income group over Rs. 1200. Eighty-eight per cent said that non-payment was due to insufficient income and 12 % had unusually high expenses.

(iv) The incidence of indebtedness

The degree of indebtedness and the ability to save among householders is another important issue. Of the rural sample, 57 % reported that they had incurred debts to meet their daily consumption. The MV inhabitants had a relatively low proportion in debt, i.e., 45 %. The proportion was highest in the ASH schemes, being 87 %. While 63 % in the Electoral Scheme sample were in debt, there were 50 % in the ORA sub-sample.

The situation in the urban sample was relatively better where only 39 % were in debt. Only 25 % of dwellers in the government

flats were in debt. The SSU occupants were next with 33 %. The proportion was highest in the other urban sample, i.e., 47 %. Incomes were presumably more stable and higher in the urban sample compared with the rural and semi-urban areas.

(v) Reasons for saving

The households in the sample who were able to save were examined to assess the manner in which these resources were directed to housing. The proportion that was able to save was small, amounting to only 16 % in the urban sample and 4 % in the rural sample. Giving a dowry to the daughters was the purpose given by 36 % of those in the urban sample who saved and by 26 % in the rural sample. Security in old age had the highest priority in the rural sample with 52 % saving for it, while it was only 28 % in the urban sample. Saving for purchasing a house was reported by 20 % in the urban sample and only 13 % in the rural sample. A residue of 16 % in the urban sample saved to invest in business.

The sample data indicate that investment on housing is made by 5 to 6 % of households. As against this, the demand for housing and the desire to make investment for acquiring a home is high—approximately 22 % of all households, but the resources they are prepared or able to allocate for the purpose are in most instances quite inadequate.

The financial ability of prospective house builders, purchasers, creditors or tenants, appears to be extremely limited, particularly in view of the outlay required for housing in the country at present. The majority of households appear to regard government assistance for housing as a gift. This seems to apply particularly to the rural beneficiaries—a situation which has important implications for government housing programmes in the rural sector. These attitudes, together with low incomes and high levels of indebtedness appear to create conditions which lead to high incidence of default on monthly payments.

Coping with housing in the present conditions

An important aspect which emerged from the survey was the manner in which people coped with present conditions in housing and the overall shortage of housing. Households make various

adjustments in coping with the housing situation. One obvious mode of adjustment is the multi-family household. In the prevailing housing conditions households are willing to occupy houses of poor structural quality or units which are incomplete. Another way of adjusting to the financial constraints is to combine residence and economic activity in the housing units.

(i) Multi-family households

One indication of either housing shortage or financial constraints is the occupancy of a house by more than one family. This can occur also in instances where children who are married continue to live in the parental household, which is customary in many families. The multi-family households were higher in the urban sample, being 20%. It was as high as 60% in the CMC sample. The proportion was lowest in the government flats and the SSU sample, i.e., 15% and 16% respectively. Combining this data with density of occupation, one finds that the SSU and the government flats are quite congested even with the majority of these units having only one family per unit. This is seen by the availability of floor area per person which averages only 36 sq. ft. in the SSU and about 44 sq. ft. in the flats. The CMC sample has 65 sq. ft. per person even with the majority of multi-family units in this location.

In the rural sample, although the area per person was satisfactory as an average, 34% of the ORA sub-sample lived in one to three-roomed houses (including verandah and kitchen), only 11% of houses were multi-family units.

The problems of multi-family households should be examined in relation to the effort of expanding and adding rooms to existing houses. We saw that at least 5 to 6% of households in the total sample had undertaken such expansion.

(ii) Semi-permanent and improvised housing

Of the semi-permanent and improvised housing stock in the total sample, 76% were rural houses and 24% urban. The proportion of semi-permanent dwellings in the total sample amounted to 21% in the urban component and 45% in the rural. The type of houses considered here are those built wholly or partly of materials

such as mud, thatch, cabook and wattle and daub. Semi-permanent housing units were distributed in all three income categories. The age of these houses, however, ranged from one year to 35 years. In the urban sample 26 % were over 10 years old. In the rural sample, the ages of the housing units ranged from two years to 70 years. Some of the older houses had wattle and daub walls which are commonly used in rural housing and have stood the test of time. Others of more flimsy materials had also stood for many years.

In the urban sample, the semi-permanent housing was mainly in the income group of over Rs. 1200 per month, i.e., 47 %, with 19 % in the Rs. 0-600 per month group, and the balance in the intermediate group Rs. 600-1200. Of the total urban component of the semi-permanent housing, 38 % were owned (in the OUA and SSU) and were households which had over Rs. 1200 per month income. These prevailing conditions of housing, particularly among the income groups over Rs. 1200 seem to be at variance with the expectations and aspirations of these households. These figures indicate the extent of the demand for structural improvement and upgrading of houses, which exists particularly in the income groups above Rs. 1200. It also indicates that present incomes are as yet insufficient for investment on housing improvements, for a large number of these households.

(iii) Incomplete houses

Still another manner of coping with housing is the practice of building a core house and going into occupation. Partially built houses were also occupied pending completion.

The rural sector seemed to have a larger proportion of incomplete houses than the urban sector. The highest proportion of incomplete houses was in the OUA sample, 77 %. The SSU came next with 17 %.

In the rural sample, the highest proportion among the incomplete houses were in the ORA sub-sample, i.e. 76 %. In the ASH sample, 67 % of all the houses sampled were incomplete ; it was 43 % in the MV. The government-sponsored schemes being of recent origin, are likely to have incorporated plans for completion. But this is not the case with the incomplete houses in the OUA and ORA samples. Some houses have remained incomplete for as

many as 65 years in these areas. Incomplete houses ranged from small to substantial houses. This points again to high initial aspirations in housing and willingness to occupy incomplete houses with plans for continuing investment in housing. It may also indicate unrealistic expectations and over-ambitious designs, quite unrelated to financial capacity. On the whole, the high proportion of incomplete houses points to the conclusion that households regard the housing investment as one which can be undertaken in stages and are prepared to adjust to the problems of occupying incomplete houses. Such a situation would normally contain a high potential for savings specifically directed to housing. However, the facts as revealed by the survey do not lend support to this conclusion, as the level of savings directed to housing and investment on housing is relatively low.

Commercial Activities

Another aspect of housing which was investigated was the use of part of the home for commercial purposes. This is a common phenomenon in both the rural and urban sectors. There were 51 % of such households in the rural sample and 8 % in the urban sample. These activities would very likely influence the choice of locations of householders as well as encourage credit policies for financing of residential cum business premises.

It was interesting to note the difference in the type of commercial activity carried out in the two samples, urban and rural. While rural houses were combined with activities such as textile-weaving, jewellery shop, grocery store, small industry, or sewing centre, the urban houses went in for such activities as providing accommodation to tourists, batik work, record bar.

Conclusions

Many of the findings of the survey confirmed what was already known concerning household behaviour and responses in regard to housing needs. However, the survey has been able to throw light on certain aspects of household behaviour which define more clearly the nature of the processes that are at work.

The survey provides useful information regarding the disparities between income levels and the size of the housing units. The size

of the house does not bear a close relation to the income level of the household. This is true of both government housing schemes in the urban sector as well as the large housing component outside the government housing schemes.

When government housing schemes are examined for the criteria of selection, it would seem that urban schemes in the sample have largely catered to the income groups above Rs. 600 per month. The rural schemes, on the other hand, have been targeted to the lowest income groups. In interpreting this data one factor which has to be taken into account is the length of occupation. In many schemes, households may have had substantial increases of income after they came into occupation.

The disparity between the income level and the size of the house is reflected in the aspirations of households as revealed in the survey. Government schemes do not provide sufficient scope for expansion and additions to the house. Many households would have increased in size after they moved into the houses. This is clearly reflected in the demand for larger houses from many occupants of government housing schemes, particularly in the urban sector. From the survey data it would appear that the size of house most desired by households is in the range between 500 sq. ft. to 1000 sq. ft. Most of those in the income group Rs. 600 to Rs. 1200 appear to be seeking a house of this size.

The criticism and dissatisfaction with the present designs of houses occupied by the respondents appear to be widespread, both in the urban and rural sectors. In the case of government schemes, many occupants expressed dissatisfaction with the design itself as well as with the lack of flexibility in the construction of type plan houses. However, the desire to have houses which are better designed was expressed both for households in the public sector schemes as well as those outside. One of the conclusions that might be drawn from these responses is that house builders need access to designs and type plans which would enable them to make choices that are better suited to their individual needs and preferences. In this connection the low income households are at a disadvantage. There is evidently scope for government and private sector organisations to assist in improving the design and architecture of low-cost houses.

The average duration of residence in the houses presently occupied is quite long. Most households prefer to continue in their present locations. This lack of mobility among the large majority of the households emerges as an important factor to be taken into account in housing strategy, including housing finance and provision of amenities. There is, however, a small but significant pressure for urbanisation. Approximately 5% of the households in the rural sector desire to move into urban locations, while 28% of those in the urban sample seek locations which are closer to the Colombo city. This is, nevertheless, balanced by the preferences indicated by another 22% who would prefer rural locations.

The survey data on the financial capacity of households and the savings and investments made by them on housing underscore the severe constraints on financial resources for housing. Nevertheless, approximately 5% of the total sample appears to have made investments on additions and improvements to their houses in the preceding two years. This proportion of households who have invested in housing should be seen in relation to the composition of the sample. A significant number of households are those who have acquired houses where the opportunity for additions and expansion is limited. The sample also contains many households which have moved recently into their homes and therefore, have no great incentive to undertake additional housing investments. In this context, the proportion of 5% who have invested in housing is not altogether unsatisfactory. It has to be emphasised, however, that the plans for housing investment which households have are beyond the financial capacity of most of them. The housing investments that have been made once again demonstrate the relatively slow incremental processes of saving and investment which households seem to be undertaking in all income groups.

The survey also presents a connected set of data on the adjustments households make to existing housing conditions. The ways of coping with the problems includes sharing of housing units; settling for lower structural quality, such as semi-permanent and improvised houses; moving to incomplete or core houses and using space for income-earning activities. These adjustments indicate how housing strategy would need to respond to the present realities of the housing situation and make optimal use of certain aspects of household behaviour. A programme of housing finance related to

some of these adjustments, such as sharing, moving to incomplete houses, or using space for income-earning activities, would have to be very different from the conventional lending for new housing units. In this sense, the Million Houses Programme appears to be better adapted for the fulfilment of housing needs of the large majority of households than many of the earlier strategies.

CHAPTER 6

GOVERNMENT HOUSING POLICIES AND STATE INVESTMENT IN HOUSING

First, the chapter briefly outlines the evolution of the state's role in housing and goes on to examine the government machinery and organisational framework in the housing sector. It next surveys the state policies in regulating housing, on the one hand, and promoting housing investment and development, on the other. It focuses on some of the contradictions which arose in the process. The final part of the chapter deals with the programmes of investment undertaken by the state during the period 1971-1981. It discusses the public sector housing programme in the period 1970-77 which was managed on a relatively modest scale. It proceeds to examine the post-1977 programme when housing assumed the role of a "lead project" and received a massive flow of resources from the Government Budget. The analysis deals with some of the repercussions of this increase in public sector outlays on housing and the change of programmes and policies which followed the reappraisal of these investments.

The Evolution of State Housing Policies and Programmes

Multiple role of the state

The state plays a multiple role in housing development in Sri Lanka. It performs the functions of national policy-maker, regulatory authority, housing administrator, lender, house developer and landlord. In its regulatory role, the state lays down standards, stipulates building procedures and seeks to contain rents for residential urban housing. It also seeks to protect tenants from harassment by landlords and to limit the ownership of houses.

In its role as housing promoter it not only constructs new housing units, particularly for the lower and middle income groups, but also encourages new house builders and housing developers by offering a package of incentives including tax exemptions and reliefs, providing assistance to obtain land as well as finance from state institutions for housing.

The first Ministry of Housing was created in 1953, and the National Housing Department was established under it. The department was entrusted with functions including regulation of rental housing and promotion of housing development. It was empowered to lend for housing and to undertake construction of houses. Until late 1953 Public Sector investment in urban housing had been limited to the efforts made through a Housing Loan Board to promote house construction by private individuals. The department continued to be the main government agency for the implementation and coordination of urban housing programmes as well as the regulation of housing until the establishment of the National Housing Development Authority in 1980. Until then, the Housing Department's activities were confined largely to urban housing, and the size of its programme was determined by the budgetary allocations made to the Housing Development Fund, which it determined. Outside the urban sector, other government agencies were undertaking substantial housing investment in new agricultural settlements as well as providing government assistance for housing in the rural sector.

During the period 1970-1977, the ministry which assumed responsibility for housing, also included the major building construction departments of the government. However, urban development and local government remained the responsibility of other ministries. The allocation of ministerial functions in the government formed in July 1977 brought these activities together in one ministry, thereby providing scope for a much better-coordinated policy of housing and urban development than in the past.

The expansion of state programmes

During the period 1953-1977, the expansion of the housing programme was relatively slow. It was contained within budgetary allocations, which after the initial period remained at a more or

less constant level in the sixties and seventies. In the mid-fifties it was about Rs. 30 million a year. In the Five-Year Plan, 1972-76, it was in the region of Rs. 50 million.

After July 1977, housing and urban development became one of the three major investment programmes of the government. In 1976, the capital allocation to the Ministry of Housing and Construction was Rs. 48.5 million, of which the grant to the Housing Development Fund was approximately Rs. 25 million. In 1978, the statement investment in housing had risen to Rs. 198.5 million, and during the period 1980-1983, the expenditure on housing exceeded an annual average of Rs. 1 billion. During the period 1977-1983, the Public Sector housing programme had expanded more than tenfold. Its activities included a large component of rural housing which did not form part of the responsibilities of the National Housing Department prior to 1977. The housing development programme now encompassed the entire island.

This unprecedented expansion of activity required an immense organisational effort. The state apparatus had to be adapted, modified and strengthened. First, there was an attempt to rationalise the allocation and coordination of the various activities through new institutional arrangements. Two new authorities were established, one for housing and the other for urban development—the National Housing Development Authority and the Urban Development Authority. Second, the pressures and demands of a programme tied to ambitious targets of implementation resulted in a high degree of improvisation and adaptation of existing machinery which could cut across the formal boundaries of departmental responsibilities.

Before we examine the implications of these developments for the organisational framework for housing in the future, it would be useful to describe briefly the structure of the ministry and the responsibilities of its departments and other agencies which are directly concerned with housing.

The Organisation of the Ministerial Functions

The existing government machinery for housing is organised in terms of the conventional ministerial structure. The ministry undertakes the tasks of policy formulation, supervision, coordination and review. It has government departments, statutory authorities and public corporations under it as its executive organs for the

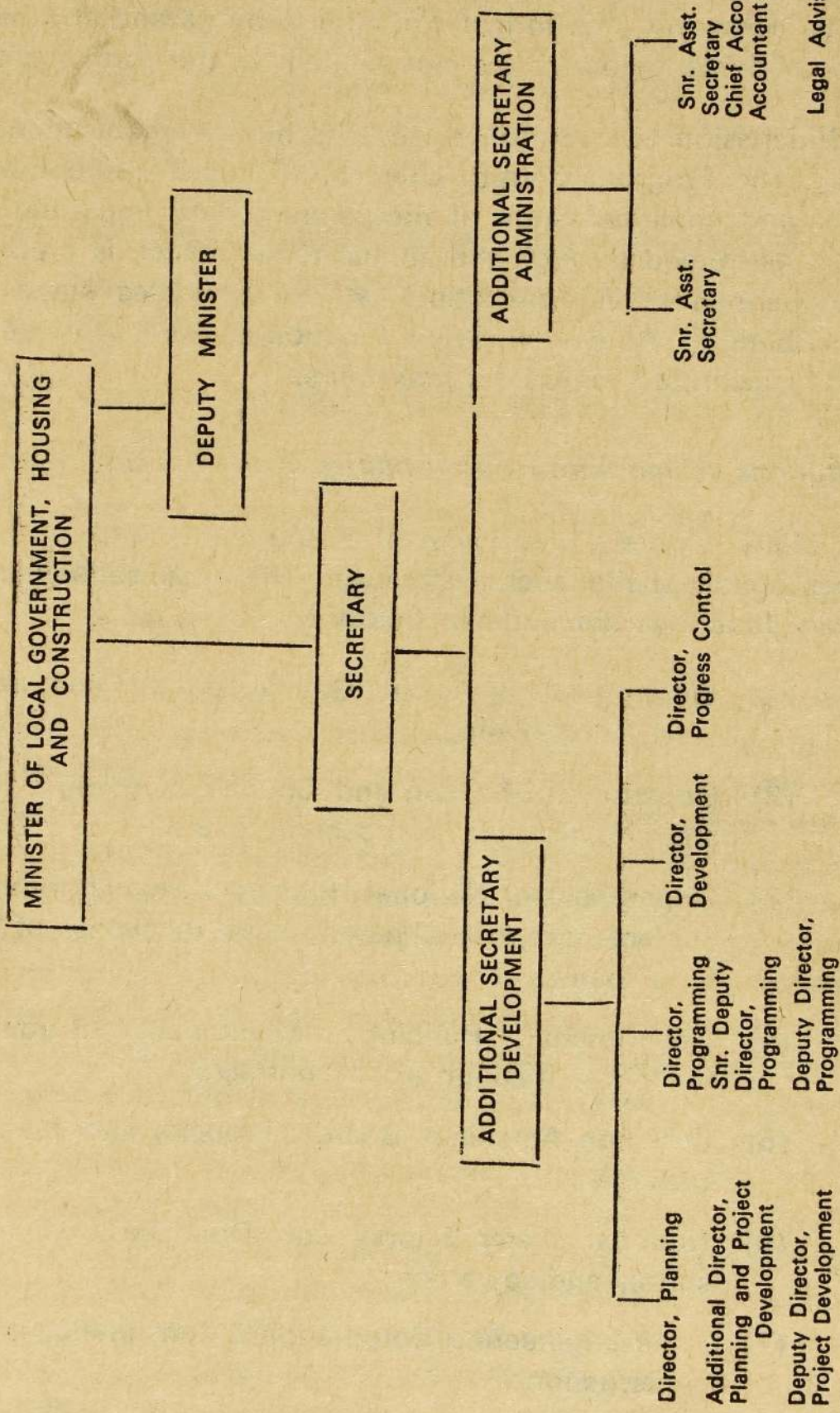
implementation of the policies and programmes. The Ministry of Local Government, Housing and Construction is charged with overall responsibility for formulating policies, initiating development programmes and ensuring their implementation. It has the following housing-related activities :

- (a) Providing policy directions in housing (urban and rural) low-cost housing loans to housing, acquisition of land, and rentals ;
- (b) Formulating building construction programmes for the public sector ;
- (c) Securing building materials for the construction industry ;
- (d) Promoting research in problems connected with housing and building construction.

From the information available, in the present organisational structure of the ministry (Fig. 1), the Additional Secretary (Development) is the key official dealing with Housing Development. He has under him two main divisions one for Projects and Planning and the other for Programming. Each division is headed by a director. While the Projects and Planning Division formulates policies and programmes, the Programming Division is charged with monitoring the actual implementation of projects. These two divisions are responsible for items (a) and (b) listed above. In the course of their day-to-day business they interact with other divisions, particularly the Division of Development (headed by a senior Engineer) and Progress Control. This structure can be briefly examined in terms of the primary managerial functions : planning and policy formulation, coordination, supervision and control. The planning process is flexible and not completely structured. The various departments and institutions under the ministry have planning units. They submit plans or develop plans together with the Projects and Planning Division of the ministry. The latter processes plans. Supervision of the planning functions is in the care of an Additional Secretary who submits plans to the minister. If the plans receive ministerial approval they will be discussed at the regular meeting of the heads of departments, then submitted to a meeting of development secretaries.



FIGURE 1 : ORGANISATIONAL STRUCTURE OF MINISTRY OF LOCAL GOVERNMENT, HOUSING AND CONSTRUCTION (MLGHC)



3 Assistant Directors

5 Assistant Secretaries

The secretary to the ministry has the responsibility of coordinating the various tasks undertaken by the ministry. Within each division, the Divisional Director maintains the coordinating responsibility. However, this formal structure is by-passed at times, and the procedures followed are not limited to the formal channels.

Supervision and control is managed by the organisational hierarchy. The Progress Control Unit of the ministry undertakes the review and implementation of programmes. An important review task is performed through the annual report which is prepared by the departments and institutions at the estimates stage of the annual budget. An overall review function is also performed by the recently-instituted ministerial task force.

Institutions vested with responsibilities in the housing sector

Many different departments, corporations and other institutions handle shelter sector activities. The organisations and their primary functions are outlined below :

- (1) Department of Local Government : Civic amenities local government ;
- (2) Department of Town and Country Planning : Planning small rural towns and sacred cities ;
- (3) Department of National Housing : Regulatory authority implementing most housing laws, recoveries of housing fund loans ;
- (4) Department of Buildings : Maintenance of government buildings, medium-sized contractor ;
- (5) Common Amenities Board : Property and maintenance manager ;
- (6) National Water Supply and Drainage Board : Water supply and sewerage ;
- (7) State Engineering Corporation : Consultancy and major construction ;
- (8) Building Materials Corporation : Major state retailer of building materials ;

- (9) National Housing Development Authority : Urban and rural housing programmes, including the 100,000 houses programme and the current one million houses programme ;
- (10) Urban Development Authority : Urban planning in Colombo Metropolitan Region, District Towns, slums and shanty upgrading ;
- (11) Building Materials Manufacturing Corporation : Improvement of the local building materials manufacturing industry ;
- (12) Centre for Housing, Building and Planning : Staff training, research ;
- (13) Municipal Councils : Municipal functions ;
- (14) National Environment Authority : Coordinating environmental activities.

The rapid expansion of shelter sector activities after 1977 strained the existing administrative machinery. While new organisational structures were being instituted, new programmes were undertaken. This required adaptation and improvisation of the functions of the existing organisation. Although this arrangement facilitated implementation, the vital functions of control and review were made difficult. The ministry is not unaware of this and the reorganisation of managerial and administrative tasks continues within the ministry. In one important sense, the expanded programmes provide an opportunity to examine and evaluate the organisational structure in terms of the stated goals and objectives.

Since the new housing programme ("million houses") is expected to absorb a capital outlay of Rs. 750 million a year, it will be useful to conduct a careful inquiry and assessment of the strengths and weaknesses of the current organisational structure. This should take into account not only the needs of current programmes but also the capacity to generate and execute new ones. That is, the structure should be capable of adapting itself to the shelter needs identified and developed into programmes by its planning division.

Housing Legislation--Framework of Controls

The production and use of housing services takes place within a legal framework. The state attempts to regulate both the supply and the demand for housing. These measures directly impact on only a small segment of households. For instance, the regulations which deal with rental housing are primarily related to about one quarter of the urban sector households. Furthermore, the various tax incentives for house builders which expect to affect the supply of housing, also pertain to a small minority of households.

The legislative measures and incentives have been subject to change over the past decade. Although they currently affect only a small segment of primarily urban households, the various control and incentive functions are expected to play an increasingly important role in the future.

Rental Housing, Tenancy and Ownership

The various legislative measures which attempted to promote a more equitable distribution of housing also resulted in seriously affecting the incentives which would have promoted the supply of such housing. Since housing investments require a mobilisation of savings, the various control mechanisms such as rent regulations and enhanced tenancy rights would have artificially lowered the returns on rental investment, while raising that for ownership. The components of the legislative framework are outlined below :

- (i) Laws protecting tenants or tenancy rights :
Protection of Tenants (Special Provisions) Act No. 28 of 1970. Amended in 1974 by Law No. 34 and in 1978 by Law No. 9. The law has been extended for five years from 1984.
- (ii) Rent Control :
Rent Act No. 7 of 1972, amended by Law No. 10 of 1977 and Act No. 55 of 1980, which has provisions for easier recovery of houses by landlords.
- (iii) Direct regulations on ownership and quantity of housing services consumed :
Ceiling on Housing Property Law No. 1 of 1973. Amended subsequently by Acts of Parliament No. 34 of 1974, No. 18 of 1976, No. 10 of 1977 and No. 56 of 1980.

- (iv) Laws pertaining to multi-storeyed building property : Condominium Property Act No. 12 of 1970. Repealed by the Apartment Ownership Law No. 11 of 1973 and amended by the Apartment Ownership (Amendment) Act No. 45 of 1982. The amendments provide for the formation of management corporations comprising the occupants of the condominiums in a particular housing scheme.

Control legislation was introduced by the state as far back as 1942; more comprehensive legislation was enacted in 1953 and underwent amendment and revision on several occasions thereafter. Among other matters, the legislation covered the control of rents, repairs and amenities of rented houses, and conditions concerning the eviction of tenants, the rent control and tenancy legislation and to ensure the protection of tenancy rights. For a discussion on pre-1972 Acts and Regulations, see Housing in Sri Lanka, MARGA, pp. 163-174¹.

Constraints in housing investment

Measures for controlling rents and safeguarding the rights of tenants were essentially a response to the urban salaried middle classes who were a vocal and organised segment of the population and therefore commanded the attention of policy-makers. Rent control, however, made investment in rental housing unattractive. The return on the investments based on controlled rents was quite unfavourable compared with alternative investment opportunities or the prevailing rates of interest. Second, the landlords' rights to terminate tenancies were severely restricted until recently. Inevitably, the legislation had serious detrimental consequences for new construction and housing development, particularly for the urban middle and upper middle classes. It also led to the deterioration of the existing stock of rented houses, mainly owing to the lack of proper maintenance and repair. The government was not slow to recognise the adverse effects of the legislation.

Most pre-1977 administrations considered housing an important issue and developed policies and programmes to promote it. However, they attempted unsuccessfully to reconcile the objective of protecting tenants and lowering rental costs with that of appropriate private sector incentives to promote the supply of housing.

The disincentives placed on the supply of rental housing, especially middle class urban housing, meant that the rent controls benefited only the current renters. The tight rental markets had two consequences. Rental property which was not easily recoverable was not maintained and large lump-sum (illegal) transfers preceded the act of renting in the case of new houses. The various regulations in effect during this period had a strong underlying emphasis on redistribution of housing property. The preference for house ownership was enhanced as rental search and transaction costs increased.

Reconciling conflicting objectives

In 1980, legislation was enacted to help promote the supply of housing. The Rent Act No. 55 of 1980, excluded houses constructed after January 1, 1980, owner-occupied houses to be given on rent and those rented to expatriates or a non-resident company, from the provisions of the 1972 Act. The Ceiling on Housing Property Act No. 56 of 1980 enabled the floor area of new houses to be increased from 2,000 to 3,000 square feet (inclusive of the thickness of the external walls). The previous Act (limit of 2,000 square feet) did not apply to extensions and subsequent expansion of a house but only to the initial construction of a house.

Meanwhile, amendments to the Rent Law marginally strengthened the position of single house-owning landlords regarding eviction. This law updated the assessed value of some homes from those of the year 1941 to those of 1955. It made provision for demolishing structures more than 50 years in age and for additional constructions on appurtenant land exceeding 8 perches.

Redistribution of housing property

The Ceiling on Housing Property Law No. 1 of 1973 had far-reaching effects on the pattern of house ownership in the urban sector. Under the law, ownership of housing property by a private individual or married couple was limited to not more than two dwellings plus one for each dependent child. An individual who is not a member of a family could own two houses. The additional units considered a surplus, were appropriated by the government and subsequently made available for ownership by the tenants. This Act resulted in a significant redistribution of housing property

It also regulated the future construction of houses, both for ownership as well as for rent. Its effects are reflected in the sharp drop in the share of rented houses between 1971 and 1981. The proportion of rented houses in the total urban sector housing stock fell from 41 % in 1971 to 28.6 % in 1981. In absolute numbers they declined from 176,000 in 1971 to 146,000 in 1981. The major portion of this decline could be attributed to the redistribution effected under the Ceiling on Housing Property Law. The houses which were rendered surplus under the law included units of varying value and quality drawn from all segments of the housing stock, ranging from apartment houses to slums and tenements. Approximately, 16,500 houses were vested in the state and by 1983, 8,300 tenants of a total of approximately 12,000 had been issued with title deeds for their homes. Most of the houses vested under this law and for which free deeds were issued after the 1980 Amendment (i.e., if the monthly rental was below Rs. 25 -) are located in tenement gardens in urban areas. Some of these gardens are now being upgraded by the Urban Development Authority.

Combined impact on housing investment

The reduction in the proportion of rented houses in the total urban stock had a positive impact on the maintenance and upgrading of the housing stock. Tenants who became owners undertook improvements and additions to their newly-acquired homes and assumed responsibility for the proper maintenance of their houses. As a result of the transfer, they came into possession of substantial capital assets. This is likely to have had a significant impact on housing investments.

The legislation on apartment ownership which was first introduced in 1970 was designed to provide a legal framework for the subdivision of ownership and management of community rights of multi-storeyed buildings. It fulfilled a long-felt need and enabled the transfer of apartments to rent-purchasers in the large state housing schemes. The Act also clears the way for property developers who wish to invest in high-rise residential construction.

In combination, the legislation for protection of tenants, control of rents and the ceiling on housing property created conditions which restricted the supply of housing and reduced the incentives

for construction of houses for purposes of renting. It is within this regulatory framework that housing investments take place. Within it, investments on new house construction were increasingly restricted to units which were built for owner occupation. Such investment had either to be undertaken by individuals who needed a home of their own, or key property developers who constructed and sold houses as a profitable enterprise. Housing incentives had to be directed towards these two groups. By itself, however, the ceiling on housing property need not have totally discouraged construction of houses for rent. There was still room for rental housing within limits. The law also provides incentives for persons who construct houses for sale. An amendment introduced in 1980 permits the building and renting of houses for a period of 20 years, which reduces the disincentives of the original legislation. The regulatory legislation as a whole needs to be examined with a view to identifying the areas where there could be adjustment and liberalisation for promoting housing investment among the different groups that have the capacity for and interest in such investment.

Incentives for Promotion of Housing

Tax incentives

In the context of the regulatory framework for rental housing, one of the means by which the government sought to promote private sector housing investment is tax incentives. They were first introduced in 1955 and since then have undergone various modifications. The incentives in respect of income from housing covered all houses constructed after a given date provided they were used for residential purposes and were within a stipulated floor area.

Since 1978, the annual value of one house owned and occupied by a taxpayer or on his behalf, is exempt from tax. Additionally, income from all houses constructed for rent after 1978 and less than 3000 sq. ft. in floor area, is exempt from tax for a period of seven years. However, such rental housing again would be subject to the prevailing limits on ownership.

Encouragement is also given for the conversion of a single house into two or more units with separate assessments by exempting their income from tax for periods of three to five years depending

on the floor area of the respective units. Capital gains arising from the first sale of any residential house constructed by an individual are exempt from income tax. An approved building company receives exemption from capital gains tax on profits resulting from the first sale of any housing unit. It is a considerable concession to a property-developing company. But the inability of companies to convert their investment readily into cash by sale of the houses has limited the attractiveness of such companies as an investment.

Another type of investment relief is in the form of deductions from assessable income of a person who has invested in the shares of a house-building company.

The repayment by an individual of the capital of a loan from an approved institution for the purchase of a first house or site, or the construction of a house is deductible as a qualifying payment up to one-third of assessable income. Monthly payments on a house bought on rent-purchase terms are also deductible from assessable income as a qualifying payment subject to the limit of one-third. An individual's expenditure on the construction or purchase of a house or building site met from his own resources or savings is similarly deductible if the Commissioner of National Housing so certifies. From 1982/83 the period for spreading of such expenditure has been increased from five years to 15 years.

Other concessions include deduction from income to employers who build or purchase houses within a stipulated floor area for their non-executive employees. The most recent concession seems to be directed at assisting the National Housing Development Authority to dispose of condominium property. The lease price paid for a house will be treated as its purchase price, if the lease is for a period exceeding 50 years, the entire consideration is paid at the time the lease is contracted and the unit has been constructed with UDA approval on a registered condominium property.

It is difficult to measure the overall impact of this package of incentives for investment and income on the increase in the housing stock. They have been designed primarily to encourage housing investment by middle class households and property developers. In the case of the former the incentives apply to a small minority of high and middle-income households, and in terms of the volume of house construction the impact would have been small. Even

so, it would apply to the high-value urban component and to that part of the housing market where problems of new house construction and tenancy are pressing and urgent.

Strengthening the role of the private sector

The incentives to property developers appear to be attracting investments to housing development enterprises and in time could result in a significant increase in housing investment in this form.

Although the Housing Developers (Special Provisions) Law was enacted in 1973, very few companies were floated until about 1978. Apart from a few finance companies which diversified their activities and engaged in property development through subsidiaries, there was only one company that undertook property development. But with the added tax incentives given to property developers in the recent past many companies have now been formed and are engaged in the construction of housing schemes to cater mainly to the middle-income groups in the urban areas. Broadly, the schemes fall into the following categories :

- (1) Housing units constructed to type plans for purposes of sale.
- (2) Construction of flats/houses to standard designs, after obtaining down payments from prospective buyers.
- (3) Construction of houses for individuals who own land, according to the desired plan of the individual.

Initially, houses were constructed for purposes of sale but this scheme was not very successful because prospective buyers were either not satisfied with the design or the finish. The scheme referred to in (2) above is functioning satisfactorily, since the risk on the part of the property developers is minimal. They are also able to exercise economies in regard to construction costs and thereby keep a good margin of profits. The scheme referred to at (3) above is currently gaining popularity among house builders. A package deal is offered to house builders which includes professional services, supply of materials, supervision of construction, processing of housing loan applications etc. The cost of construction per square foot is well within the standard rate. This scheme is popular with those who wish to avoid the many time-consuming problems usually associated with house-building.

Most property developers have concentrated their building mainly in Colombo and its suburbs. This is because most of the companies operate from the city. However, some companies have now been established outside the city and offer housing units in urban and rural areas for low middle-income and low-income groups.

One of the main obstacles faced by the individual house-builder is finance. Although recourse to lending institutions is available, the quantum of borrowing would naturally depend on the repaying capacity of the individual. Further, the rates of interest appear to be high. In this connection the recent setting up of the Housing Development Finance Corporation (HDFC) under the Ministry of Local Government, Housing and Construction is expected to bring some form of relief to prospective house-builders. The main objectives of this institution are discussed in Chapter 8.

Major Programmes of State Investment

Investment in the Period 1970-1977

The first part of this section examines housing production during the period 1971 to 1977. The latter section looks at some key implementation programmes, especially those undertaken in the public sector after July 1977.

The period 1971 to 1977 was one which recorded the lowest rates of economic growth since independence, when domestic savings and capital formation dropped sharply. A strictly regulated economy, with a few incentives to the private sector coupled with an adverse international economic environment contributed to a severe contraction of investment and growth. Against this background the responsibility for undertaking direct investments to increase and improve the housing stock was assumed by the state, while housing investment within the private sector was confined mainly to owner occupants and housing cooperatives. Government policy during this time attempted to increase housing output by encouraging private sector construction, while expanding public activity at the same time.

Public sector housing activities during this period consisted of two main programmes—the direct construction programme and the Aided Self-Help (ASH) programme. The direct investment proposed under the Five-Year Plan 1972-76 is given in Table 1.

TABLE 1
PLANNED PUBLIC SECTOR INVESTMENT 1972-1976
 (Rs. Million)

	1972	1973	1974	1975	1976
Low-cost urban housing ..	8.5	7.0	7.0	7.0	7.0
Rural housing ..	12.0	12.7	13.4	14.1	14.8
Quarters for public servants ..	20.0	21.2	22.4	23.6	24.8
Total ..	40.5	40.9	42.8	44.7	46.6

In addition to these direct investments, the annual allocation to the National Housing Fund was Rs. 40 million, which was largely used for loans to middle class house builders.

The principal goal of the direct construction programme was to provide rental accommodation for the middle and lower income groups. The main schemes under this programme were:—

- (1) Low-cost multi-storeyed housing schemes in the urban areas for the lower income groups;
- (2) Middle-class housing construction programme—which included high-rise flats in large towns and low-rise houses in small towns;
- (3) Slum and shanty improvement schemes carried out by the Common Amenities Board under the direction of the National Housing Department;
- (4) Rural housing through the Divisional Development Councils as agencies for the planning and implementation of the housing projects.

Under the programmes (1) to (3) above, a total of 5,600 housing units were undertaken, but the number completed during the period 1971-77 amounted to about 60% of the target. This was mainly due to the non-availability of principal building materials, increase in prices of standard building materials and transport costs. The other contributory factors were related to administrative and management

issues. The cost of flats constructed was so high that it became necessary to subsidise the lower income groups very heavily. The planned target for rural housing under item (4) envisaged the construction of 12,000 units. The performance appears to have been much below this target. Detailed information on this programme is not available.

Aided self-help programme

Under Aided Self-Help, first introduced in 1972, the government met the cost of land development and certain services and building materials required for a low-cost house, while the allottee provided the labour. An interest-free 20-25 year loan covered the cost of building materials, while a nominal ground rent was charged for the land. The first ASH scheme was inaugurated at Hekitta in the suburbs of Colombo in December 1972. During the period 1972-77, 61 ASH schemes consisting of nearly 2,270 houses were completed in rural and semi-rural areas. This approach enabled the government to effect considerable reductions in the cost of low-income housing units and spread the benefits of public sector investment over a larger number of beneficiaries. The cost to the state was as low as Rs. 6000 per unit in contrast with a cost of around Rs. 30,000 per unit under the direct construction scheme. ASH schemes also successfully tested the validity of self-help as a method of low-income housing. More important, they contributed to community participation, and consequently to community development. Secondly, they devised the ASH housing packages that are still being implemented; and, thirdly, they established the management procedures for the implementation of such schemes.²

Other programmes and incentives

During the period under review, the state through a number of policy measures and incentives also supported the efforts of the private sector, which contributed a major part of the investment in housing. The investment came from individual house builders, the housing cooperatives and private housing developers.

The volume of housing loans granted by the National Housing Fund for the construction and improvement of houses increased from Rs. 15.7 million in 1972 to Rs. 34.5 million in 1976. However, it was less than 5% of the target of national investment on housing

in the Five-Year Plan 1972-1976. As a further incentive the rate of interest which was 11 % at the beginning of the period was reduced to rates ranging from 6 % to 9 %, depending on the size of the loan. During the period the minimum requirement of 15 perches to construct a house was lowered to 6 perches in certain areas.

In the rural sector, the Land Commissioner's Department and the Land Development Department granted subsidies for housing under village expansion schemes and undertook the construction of housing units in the colonisation schemes. The Department of Fisheries undertook the implementation of housing schemes for fishermen, and the Ministry of Local Government provided funds to local authorities for slum clearance schemes. In addition to all this, the government allocated funds on a regular basis for the construction of quarters for public servants in different parts of the country.

The contribution made by the public sector to the housing stock through direct construction of housing units during the period was relatively small compared with the period that followed. The lending operations of the National Housing Fund covered the cost of 750 to 1000 middle class housing units. This has to be placed against the total volume of construction of new permanent housing units during 1971-77, which averaged 22,000 a year.

Change of Programme after 1977

With the change of government in July 1977, the Housing and Urban Development Programme became the second lead project in the country's new development strategy. The new housing policy marks a shift from the previous administrative regulatory emphasis. While the housing target of the previous government was between 7,000 and 10,000 units for a seven-year period 1970 to 1977, the programme initiated in 1978-79 aimed at the construction of 100,000 new units by the end of 1983. Of that number, 36,000 were to be on a direct construction basis in urban areas, such as Colombo, Kandy and Jaffna; 50,000 units on an aided self-help basis in semi-urban and rural areas, and 14,000 units for house-builders on a loan scheme. As a supplement to state activity it was expected that 400,000 units would be put up by the private sector for which purpose it was sought to stimulate development activity in that sector through a package of incentives and by reducing the constraints in housing legislation.

TABLE 2
PUBLIC HOUSING PROGRAMME 1978-1982

Programme	Original target	Revised target	Number of Units completed by end of 1982 (provisional)	Units under construction	End of 1982 cumulated expenditure (Rs. Mn.)
1. Urban Housing	36,000	20,626	11,160	2,713	2,811.1
Urban Shops	—	403	195	226	
2. Rural Housing (Aided Self-Help and Model Villages)	50,000	35,000	19,133	13,844	571.2
3. Electoral Housing	26,040	17,640	7,511	3,340	541.3
—Direct construction		5,880			
—ASH		11,760			
4. Public Servants Quarters	695	493	395	24	89.0
5. National Housing Fund—loans	14,000	14,000	28,000	n.a.	320.0
Total (Excluding Row 5)	112,735	74,162	38,395	20,147	4,012.6

Source : NHDA : As quoted in Ministry of Finance and Planning, National Planning Division: *Public Investment, 1983-1987*.

The total number of units completed under the state programme during the period 1978-82, amounted to 38,394 (excluding the units constructed with loans granted from the National Housing Fund). The number of units under construction at the end of 1982 was 20,147. The total investment amounted to Rs. 4.332 billion, and the share of the public sector in the total housing investment increased from less than 10 % in the 1970-77 period to an average of approximately 12 % of the total. Some of the macro-economic implications of public sector investment in housing are discussed in greater detail in the chapter on Housing Finance.

On the basis of experience gained during 1978-1982, there has been a significant re-ordering of priorities in the planned housing investment. The volume of investment has been scaled down considerably and its composition has been altered. The housing programme for 1983-87 expects an investment of approximately Rs. 3.20 billion. The new programme is expected to reach a million households and cater to a variety of housing investment including upgrading of existing units, additions and extensions, provision of amenities and construction of new houses.

The programme in the urban sector

The urban component of the 100,000 houses programme aimed at the direct construction of 36,000 units. Construction was targeted as follows : 85 % for low-income groups ; 10 % for middle and lower classes, and 5 % for upper middle class households. The government also budgeted for the construction of 695 public servants' quarters under the urban housing programme of the NHDA. A significant part of the urban housing strategy was the slum and shanty upgrading.

The total estimated cost of the programme was Rs. 4 million. Its main beneficiaries, however, were households from a relatively high income group. By the middle of 1982, nearly 10,000 units under the direct construction scheme and 239 public servants' quarters had been completed. In 1982, there was a deceleration in the programme, owing to resource constraints and escalation of construction cost. During 1983 only 1,810 units under the direct construction scheme and 156 public servants' quarters were constructed. The focus of activity began to shift towards low-cost

housing projects on an aided self-help basis aimed at helping low-income groups. The direct construction programme and the construction of public servants' quarters were suspended in order to bring down the overall construction costs in Public Sector housing.

Housing estates

To meet the housing requirements of those near and below median income, and to reduce congestion within Colombo city, a strategy of housing estate development was undertaken. They were to be located in the suburbs on sites which needed development and improvement. These units are generally of three sizes 85 % in the 40-500 sq. ft. range, 10 % in the 600-800 sq. ft. range and 5 % in 1000-1200 sq. ft. range. The estates are serviced with stores and markets and have access to electricity and piped water. The houses are offered for sale on the basis of a down payment and settlement of the balance in monthly instalments spread over (generally) a 15-year period. Although the initial response to the notice was encouraging, when the applicants were required to make the down payments, a large majority found the prices beyond what they could afford. Besides, the units in the 600-800 sq. ft. category for which there was the largest demand, were only 10 % of the total while the smallest size (89 %) attracted very few buyers. They were too costly for the working class households for which they were planned and inadequate both in space and quality for the middle class. The government reacted by absorbing the cost of land and infrastructure and re-offered the units for sale at considerably reduced prices and on easier payment terms. Because of the heavy subsidy element the demand picked up again, but ultimately it was the middle and lower-middle income families and not the low-income groups who were the beneficiaries.³

Slum and shanty upgrading

For those urban households which were considered to be unable to improve their housing, the UDA developed the Slum and Shanty Upgrading Programme (SSU). The policy paper on slum and shanty upgrading prepared by the UDA and the Ministry of Local Government, Housing and Construction in 1979 was of the view that the slum and shanty problem in the Colombo Municipal area was manageable and that innovative solutions were possible.

Further, the informal sector workers who comprise that population were considered an important productive segment of the urban labour force, representing a valuable current and potential asset for development. The total estimated cost for the upgrading of all Colombo's slums and shanties was "a mere US\$11.5 million (Rs. 230 million) in 1979, which according to the then total estimated cost of the overall housing programme, was only about 9% of it".⁴

The present Slum and Shanty Upgrading Programme covers 8,544 units and about 10,000 families in the Colombo Municipal Council area as well as the urban areas of Jaffna, Batticaloa, Galle, Kalutara and Kurunegala. Its estimated cost is Rs. 75 million. This is an average of approximately Rs. 7,500 per beneficiary family, which makes it quite a cost-effective programme. The Delivery Plan is through 53 individual projects. The total coverage of the programme is, however, less than 10% of the country's slum and shanty population of about 400,000. During the past five years, work on about 3,000 units was completed.

Because the majority of the slum and shanty population is concentrated in Colombo, the city is necessarily the major target of the programme. The first upgrading project was undertaken in 1978 and the operation has since progressed. The SSU programme includes the following elements:—

- permanent upgrading, which includes improvements to the physical, social and economic environment;
- temporary upgrading where minor improvements are provided;
- relocation within site where improved housing is provided;
- relocation to alternative site where improved housing is provided along with ancillary facilities and community services.

In the implementation of the programme, priority is given to areas where conditions are the worst. As far as possible, existing settlements are upgraded rather than demolished and relocated, since the preference of the large majority of the residents is to remain in their present location on account of easy access to workplaces and other essential facilities. Most of the projects entailed upgrading of the infrastructure and amenities and very few projects

necessitated relocation. Some shanty dwellers have been given title deeds for the lands they occupy as well as mortgage loans for the improvement of their houses on a self-help basis.

In February 1981, the government approved a programme of the Ministry of Local Government, Housing and Construction to grant 40-year leasehold rights to shanty dwellers in selected project areas, as an incentive for housing improvement by providing security of tenure. The provision was to be applicable to squatters occupying government and private land where no high priority alternative uses are planned. Where necessary, private land would be acquired. The leasehold land could be neither transferred nor sold.

In slum tenement areas, however, title deeds had earlier been handed over and were expected to have been an incentive for housing improvement. For a description of the SSU programme and its implementation see Selvarajah. E. in *Archer et al*⁵

Current housing programme in the rural sector

Although Chapter 5 indicates that rural housing was inadequate in terms of amenities and quality of the structure, the location and lower density in the rural sector make the problems of rural housing different and, perhaps, less urgent. After July 1977, however, rural housing was given priority.

The Rural Housing Programme which the government inaugurated in 1978 got off to a slow start, but after the establishment of the NHDA in April 1979 and the decentralisation of its administration, the pace of implementation improved rapidly. There were

TABLE 3
RURAL PROGRAMME PROGRESS OF WORK, 1978-1982

	<i>No. of Units target</i>	<i>Total esti- mated cost Rs. m.</i>	<i>No. of Units comple- ted</i>	<i>No. of Units under cons- truction</i>	<i>Total cumulative Expenditure (Rs. m.)</i>
1. ASH Housing	(100.0)	19,230	8,833	n.a.
1.1 Model Villages		10,638	4,826	
2. Electoral Housing Schemes		7,447	n.a.	n.a.
Total			26,677	13,844	

Source : Statistics Department, Central Bank of Ceylon.
Economic and Social Statistics, Sri Lanka, Vol. V, Dec. 1982.

Note : n.a. = not available.

several components in the rural housing programme. These included the Aided Self-Help programme, the Model Villages programme and the Electoral Housing schemes. The progress made during the period 1978-82 is given in Table 3.

The Aided Self-Help Programme

Although the performance in public housing fell short of the target, the progress after 1977 was impressive in comparison with the effort during the period 1970-1977. The three main components of this programme, the Aided Self-Help (ASH) Housing, the Model Villages and Fisheries Housing, were intended almost exclusively for the rural poor. They received high priority in the housing programme, particularly in view of the beneficiary group and the relatively low-cost nature of the construction.

In 1978, the government included aided self-help housing as an important component in the programme for 100,000 houses. Of the total number of housing units in the programme, approximately 15,000 units were under Aided Self-Help schemes, of which nearly 6,800 were under construction. The packages of assistance under these schemes included building materials for houses, developed sites and provision of basic amenities such as pit latrines and wells. The state also transported the materials to site, provided technical assistance in terms of design and construction. The beneficiaries contributed the skilled and unskilled labour for common items such as the construction of a store for the supply of materials and the development of the infrastructure. The supply of labour for construction was essentially their responsibility. The average area of houses under these schemes was around 380 sq. ft. and consisted of one or two small rooms. The cost of these houses varied according to the size of the units, the materials used and the level of infrastructure provided.

Around 70% of the total cost of land, which is given on lease, is recovered without interest in monthly instalments. The instalment for this recovery is fixed at Rs. 50 per month and repayment is spread over a 30-year period. The settlers are selected from a list given by the Member of Parliament, provided they are recipients of a low income, i.e., between Rs. 250 and Rs. 550 per month. The settlers become the owners of the houses once the cost is repaid within the stipulated period.

The financial constraints in 1979 resulted in efforts to use local materials and to demonstrate the durability, appropriateness and economy of units constructed with such materials.

The first experimental project was the Gallenikanda ASH Housing Scheme in the Matugama electorate (Kalutara District) which consisted of 52 low-income houses. The original estimated cost per house of 425 sq. ft. in 1980 was Rs. 12,000 but this had since increased to Rs. 14,000. The main construction material was yellow local rock, bonded with mortar and then cement-plastered, and the roof was of asbestos. The second experiment was at Ratnodagama Model Village in Wewegama in the Badulla District, which consisted of 126 houses. These units were built with rubble and mud mortar with cement plastering and an asbestos roof. These were completed in January 1981. Several other experiments were carried out subsequently and the results proved that it was technically possible to build for Rs. 12,000 to Rs. 15,000 a bigger and better rural house using local materials and local technologies, instead of the conventional house which cost around Rs. 22,000 to Rs. 25,000. Based on these examples, the government has encouraged the use of local materials and local techniques for all rural housing schemes.

The Model Villages Programme

The Model Villages Programme which is also named "The Village Reawakening Programme" began in 1978 with the rehabilitation of a remote backward village called Badalgama, renamed Udaagama. It was a village of one-roomed mud huts with a single well for drinking water. The old sub-standard housing units were replaced with brick-built cottages, with cement floors and tiled roofs and served with pipe-borne water and latrines. A school, a health centre, a handicraft centre and a water tank to irrigate land for paddy and vegetable cultivation were also provided.

In the model villages programme, the investment on housing is the centre-piece of a multi-sectoral effort at the development of the village. The housing programme itself is supported with activities which improve the social infrastructure of the village and at the same time promote income and employment-generating activities. In such villages, electricity might be provided, roads may be upgraded, water supply improved and a traditional craft rehabilitated

together with the provision of houses. The financial provision for the model villages programme comes from the resources provided for the ASH programme. By June 1983 there were 227 such model villages with approximately 18,500 houses. Provision has been made in over 30 villages for cottage industries covering woodcraft, needlework, coir products and textiles. Biogas units have been built in about 15 villages. The housing units which are constructed as part of the ASH scheme are the responsibility of the NHDA. The rent charged is on the same basis as for ASH houses and is generally Rs. 50 per month.

Although the Model Villages Programme is similar in many respects to the regular ASH programme, it does not select individual beneficiaries on income criteria. The entire village becomes the beneficiary when a village is selected for the programme. It is, therefore, not the need that entitles a beneficiary family to a house but rather its membership in the community. It is likely that as a result the benefits accrue to households who are not in need of state assistance. Another feature of the Model Village Programme is that it provides new houses with modern infrastructure and facilities as replacement for existing housing units of poor quality. As a result, the Modern Villages approach will not contribute to satisfying new housing demand and increase the rural housing stock. However, it contributes to changing the composition of the housing stock in terms of materials construction, size and amenities.

The Electoral Housing programme

The Electoral Housing Programme is expected to build a number of houses in all electorates throughout the island. The annual target of houses to be constructed in each electorate was increased from 5 in 1978 to 50 in 1983. The overall target was 26,000 units at a total estimated cost of Rs. 750 million. The programme was intended to benefit the rural poor. The houses that were built were of 380 sq. ft. in floor area with a latrine and a well. By December 1982, 7,350 houses were completed and about 3,300 more were under construction. Initially these houses were built through direct construction. The 5,800 houses constructed in this way cost about Rs. 40,000 exclusive of a unit of land by the end of 1980, while the estimated cost was Rs. 35,000. This was an expensive way of providing housing for low-income rural households.

Selection of beneficiaries for government low-income housing programmes

The procedure for selecting beneficiaries is briefly outlined below. The first step is the invitation of applications by the appropriate state representative (the Grama Sevaka or Assistant Government Agent). This is the announcement stage of a proposed housing scheme. The applicants are then examined according to a set of criteria. Preference was given to those without a house as certified by the Grama Sevaka or AGA, with a monthly income below Rs. 350 (This was in 1971. The income level was increased to Rs. 1000 in 1984) and those who were currently married. The applicants who were single but provided for several dependants, were also given consideration. The selected beneficiaries' capacity to build a house within a specified period of time was also taken into account. The people selected were normally those living about five miles from the proposed site of the scheme. The selection criteria were not rigidly followed and households were selected on other general humanitarian considerations. The selection was conducted by a panel consisting of the respective District Manager of the NHDA, the AGA and the Assistant Commissioner of Local Government.


The final decision on the beneficiaries rested with the Member of Parliament of the area who reviewed the list of proposed beneficiaries and the order of priority.

This selection process has serious weaknesses. The primary one is the operation of two selection criteria, the bureaucratic one and the political one. The latter has veto powers over the former. The politicisation of the selection process at times obviated the criteria for selection as stated by official policy. This often contributed to serious problems in the loan recoveries.

Housing Investments by Ministries other than the Housing Ministry

Fishermen's housing programme

A socio-economic survey of the fishing population carried out in 1972 indicated that over 54 % out of a total of 43,000 fishing outholds in Sri Lanka, were living in temporary structures⁶. The average household size was 5.6 persons, nearly 60 % lived in

 dwellings where the floor space was less than 300 sq. ft. An all-island survey conducted by the District Fisheries Extension Officers in 1978 revealed that there was a need of around 10,000 houses, about 1,350 wells and 7,000 latrines. It also estimated that the fishing communities in the coastal area required 50 miles of new roads and improvements and repairs to 80 miles of existing roads.⁷

The Ministry of Fisheries drew up a Master Plan to meet these needs. A total expenditure of Rs. 127 million was incurred during 1979-1983. However, as a result of financial difficulties experienced by the government, implementation was curtailed. Nevertheless, in 1979, 758 fishermen's housing units were constructed while in 1980 the construction of 1,276 housing units was undertaken.

Meanwhile, the NHDA sponsored a Fishermen's Housing Programme which the Minister of Fisheries actively supported. Under it, the NHDA gave funds for construction of housing units at approximately Rs. 18,000 per unit. The Fisheries Harbour Corporation undertook the construction. Once completed, housing units were given to the fishermen on rent on the same basis as ASH houses. This programme was completed by 1982 with the establishment of 75 Model Fishing Villages.

Housing in agricultural settlement programmes

The programme for the settlement of landless peasants on newly developed agricultural land was initiated by the government in the 1930s. The government provided substantial assistance to the settlers and undertook the clearing of land, ridging, construction of irrigation channels, roads, houses, latrines, community halls, dispensaries and schools. In 1956, however, the scheme was modified, the initial costs of settlement were greatly reduced and the settlers themselves were engaged in the development of the scheme. It was also modified in 1969 on the basis of the recommendations of the IBRD Mission of 1966, which emphasised the need to increase production so as to derive the maximum return from the heavy capital investment made. Several changes were accordingly introduced, under which the government provided a subsidy to each settler family and certain basic amenities like housing, latrines and wells to facilitate settlement. Special schemes for educated youth were also established in the late 1960s.

By 1981 there was a total of 228 settlement schemes covering a total acreage of 631,800 benefiting 110,781 families. In 1982, it is estimated that the settler population in these settlement schemes, at 5.5 persons per family, was approximately 609,290. In addition, there was estimated to be around 50 % of this number who were non-allottees living and working in these schemes. In other words, the population sustained by the settlement schemes in 1982 was around 6 % of the country's total population. While the government provided financial and other amenities to the allottees, the non-allottees had to rely on their own resources in regard to their housing and other infrastructure.

Housing in village expansion schemes

Simultaneously with the establishment of colonisation schemes, the government adopted a programme of village expansion to ease the congestion and landlessness within the Wet Zone itself. In areas where there were enough state lands in proximity to villages, they were alienated to the peasants under the Land Development Ordinance (1935) for residential and agricultural purposes. Where such lands were limited, portions of large uneconomic plantations and other privately-owned lands were acquired in terms of the Land Acquisition Act No. 9 of 1956 for alienation to the peasants. Up to 1977, about 862,498 acres of state land had been alienated to 605,229 peasant families, while 46,971 acres had been acquired by the government and alienated to 17,081 peasant families.⁸

Under the revised scheme for new settlements, temporary housing units are constructed at the time of settlement to be subsequently replaced with permanent or semi-permanent structures. This would partly account for the improvised structures in some of the rural areas. As settlers are able to earn incomes from agriculture which compare quite favourably with the average rural incomes, they are able to provide adequate resources for the improvement of their housing. Substantial government assistance is also available for housing and amenities such as community wells and latrines.

These schemes and the resources they generate therefore look after a significant component of the new demand for rural housing

and the additions to rural housing stock. Under the village expansion schemes beneficiaries were granted a subsidy in the construction of a type plan. This housing component has now been incorporated in the rural housing programmes of the Ministry of Local Government, Housing and Construction. From the figures available it would appear that the new settlement and village expansion schemes are likely to have provided resources for about an annual average of 15,000 to 20,000 houses during the past four decades, with smaller programmes in the early stages and progressively larger programmes in the succeeding stages.

Housing in the Mahaweli Development Programme

The Accelerated Programme of Mahaweli Development is the largest development project undertaken in the country. Over 140,000 families will be settled on lands made available for irrigation under this programme and they will be directly engaged in agriculture.⁹

Along with these families, there was expected to be a sizeable population that would go into these areas to serve the tertiary sector in the settlements so vital for development of community life. The supporting services and infrastructure necessary for the development of agriculture and agro-based industries and basic amenities for communities living, such as houses, drinking water, sanitation, medical facilities, schools and other essentials were also expected to be provided. It is estimated that this programme would result in the exodus of over a million people into the new development area.

The number of families settled by the end of 1982 under the Accelerated Mahaweli Development Project was 29,070. In the initial stages most of the settlers moved into improvised housing units for which the government provided assistance. Subsequently, the settlers constructed semi-permanent and permanent houses with their own resources supplemented by a substantial government subsidy. This process is already taking place in the Mahaweli settlements.

The entire Mahaweli Project including both the current programme and the next phase envisages in all the development of approximately 600,000 new acres which have the potential to carry approximately 270,000 settler families. The population in the

non-agricultural sectors of the area is likely to amount to an additional 50% on a conservative estimate—i.e., another 135,000 families. Of this, the Accelerated Mahaweli Project, which is being implemented, accounts for approximately 56%. A total of 26,942 housing units were constructed in Systems H, C and B during 1983-84. The largest number were in System H—18,408. On the assumption that the housing development programme in this area, which results in the replacement of temporary structures with more durable units will take place during the period 1983-1992, the accelerated programme will account for approximately 220,000 housing units over the ten-year period, or an annual average of 22,000 units. This housing investment in normal circumstances would be financed from the resources available and generated within the Mahaweli Project itself.

The Mahaweli Project, including the second phase beyond the accelerated programme, would, therefore, play a very significant role in satisfying new housing demand in the Rural Sector in the next 20 years. The process itself would be a complex one as it entails migration of families. These would include families who vacate existing housing units, families who share houses and who require new housing units, as well as newly-formed families who require new housing units. In each case, Mahaweli settlements and the housing investments taking place in the Mahaweli area will lead to adjustments of housing demand elsewhere. It will contribute significantly to the additions needed to the rural housing stock in the next 20 years. This has to be taken into account in the strategy for rural housing.

Current Housing Programme in the Estate Sector

The plantation sector contains the largest concentration of sub-standard housing. There were approximately 200,000 housing units in this sector, the large majority of which are occupied by the resident labour force. The housing conditions in this sector are set out in Chapter 3. Over several decades private owners of these plantations made little effort to improve these conditions. After the Land Reform Law of 1975 these plantations became the property of the state, and the two state organisations which manage

the plantations assumed responsibility for living conditions of the workers, including improvement and renovation of the housing stock.

The Ministry of State Plantations and the Ministry of Janatha Estate Development have taken the initiative to improve the living conditions of the resident workers on the plantations and provide them with better housing and other amenities. It has already assumed responsibility for housing development on estates under the purview of the Sri Lanka State Plantations Corporation and the Janatha Estates Development Board by gradually replacing the barrack-type linerrooms with cottage-type houses. This programme includes special projects supported by the UNDP and UNICEF which provide assistance for the following activities :

- (a) Childcare, particularly the pre-school child ;
- (b) Health and immunisation programmes for children and mothers ;
- (c) upgrading the pipe-borne water supply schemes for the estate population ; and
- (d) provision of facilities to improve environmental sanitation

In 1979 the SLSPC spent Rs. 20 million on the construction and conversion of existing housing units on estates and the construction of new cottages. The programme was adversely affected by the escalation of building costs. The estimated cost of a new cottage which was Rs. 22,000 in early 1970 had risen to Rs. 48,000 in 1980. The programme has had to be curtailed and the SLSPC has fallen short of the original targets for conversion—470, and new construction—941 in 1979. The actual number of conversions was only 220 and the number of new cottages built was only 341.

During 1977-81 the JEDB constructed 1,504 housing units. These included a number of workers houses constructed in 1980 under a project financed by the Netherlands government which provided aid in Rs. 3.86 million on selected estates in the Kandy District.

It will be seen that these efforts are still inadequate compared with the magnitude of the task that has to be accomplished in transforming the sub-standard housing stock and providing satisfactory housing conditions in the Estate Sector. At the current pace

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only a fraction of the task will be completed annually and the replacement and improvement will extend far beyond the turn of the century. It is therefore necessary to consider alternative strategies of a bolder and more comprehensive type for housing and development of civic centres in the Estate Sector. Such strategies could mobilise individual and community effort on a much larger scale incorporating some of the elements of self-help. The scope for such effort should be quite considerable given a resident labour force and under-utilisation of labour on the plantations. Incentives such as the provision of allotments and homesteads for estate households may prove successful in promoting the required effort on a scale which significantly accelerates the transformation of the housing conditions in this sector.

Reappraisal and new Directions of Public Sector Programme

The programme of Public Sector housing implemented by the Ministry of Housing and Local Government during 1978-1983 was unprecedented in both magnitude and diversity. It increased the state investment in housing from approximately Rs. 50 million per year during 1970-77 to about Rs. 850 million per year during 1978-1982. The volume of nearly 39,000 completed housing units accounted for almost a quarter of all the permanent housing units which were probably constructed during this period if we assume that the rate of permanent house construction was sustained at the 1980 levels in the succeeding two years.

What was unique in the programme was the great diversity and mix of residential types and housing activities. At one end, the programme included the low-cost self-help housing, at the other the costly luxury flats for high-income groups. The programme sought to include components which responded to the full range of housing demand. The slum and shanty upgrading dealt with the needs of the urban poor. The rural component focused on the housing demand of the rural poor. The programme experimented with a variety of approaches ranging from flexible aided-self-packages to integrated housing-centred village development projects. It was therefore unusually bold and ambitious in its design. For this reason it was able to take state housing activity in a number of different directions and acquire experience and knowledge which

was invaluable for the formulation of future national housing strategies. Many of the ingredients of the housing policy which has been adopted for the next phase were already present and were being tested in the 1978-83 period.

The limitations of state programmes

However, it is also necessary to point out that the housing programme during this period had serious shortcomings. On the criteria of cost its performance cannot be judged as satisfactory. If we make the assumption that the units under construction were equivalent of half a completed unit, then the unit cost in the Urban Sector would be approximately Rs. 215,000; the electoral housing unit would cost nearly Rs. 60,000; and the ASH unit Rs. 22,000. The ASH housing was in large measure affordable to the targeted groups. In the case of the other two programmes, costs were exorbitant and far above the level of affordability of the households for which they were intended.

In many programmes such as the Urban house construction programme, the Model Village Programme and Electoral Housing, the benefits of subsidised housing were distributed indiscriminately to beneficiaries. The housing needs of all electorates were treated as equally urgent. In the model villages the large majority of the beneficiaries are in the low-income category. The levels of subsidy were quite high. The performance on the recoveries has also been quite disappointing.

Therefore, Public Sector housing strategy required adjustments and improvements in a number of areas. There has to be greater selectivity in regard to the type of programme. The direct construction programme in the Urban Sector, the Electoral Housing programme and the Model Village programme had proved to be far too costly. Methods of implementation had to be changed. As might have been expected, construction through Public Sector agencies led to waste and excessive cost escalation. Public Sector investment had to play a catalytic role in supplementing and mobilising household savings. The state programmes had also to respond to a wide range of housing needs which included upgrading, extension and provision of basic amenities.

Million Houses Programme—the main elements

The reappraisal of the 1978-83 programme resulted in a far-reaching reorientation of the housing strategy for the ensuing period and a major reordering of priorities. The programme for the next period had aimed at reaching one million households covering human settlements, towns, villages and plantations. It is an ambitious effort to reach a far greater number "of the poor and needy, at a lower cost to the nation but with greater satisfaction to the actual users".¹⁰ The programme aims at new housing as well as the upgrading of existing housing and related amenities.

With this in view, a "Housing Options and Loans Package" has been developed with as many as 19 different choices—16 to the low-income earners and three to the middle-income earners. This range of options covers a hierarchy of housing needs which can be satisfied with appropriate packages at various cost levels. This enables the beneficiary to take a decision in terms of his willingness and ability to repay and the agency to offer him an option to fit such a decision. This approach also implies a movement from rigidly determined standards in state-constructed housing units to an open-ended-system in which the beneficiary can decide and adopt standards incrementally, in accordance with his needs. The financial provision for the programme assumes an average cost of Rs. 7,500 per package. Information regarding the package is widely publicised in order that prospective beneficiaries could discuss their requirements and match their level of need with their level of affordability. The loans, interest rates and repayment periods are graded in relation to affordability.

The targeted beneficiaries are families whose monthly income is between Rs. 300 and Rs. 1000 with a visible index of self-help enterprise. They should be citizens resident within the Gramodaya Mandala area and should not own any other house of a structurally permanent nature.¹¹

It is evident that the programme strategy is based on an evaluation of earlier—and existing schemes and attempts to meet their various shortcomings. Further, in making the low-income group the target it takes account of the vital issues of affordability, of the need for upgrading housing units as well as sites and services and the factor of low mobility of both the urban and rural poor.

The million houses programme has changed the direction of Public Sector housing investment in a very significant way. Two of its distinctive features are first, the recognition that housing investment must cover a wide range of housing needs and services which include but go beyond the construction of new housing units. It takes account also of the requirements of land and finance, skills training and technical advice. Second, the programme hopes to activate a broadbased process of community participation or mutual help and self-help for its implementation. In terms of cost effectiveness, mode of implementation, coverage of beneficiaries and flexibility, it avoids many of the shortcomings of the 1978-83 programme. However, it will need to balance the different objectives in such a manner as to be able to add significantly to the housing stock and satisfy new housing demand.

The implementation of the Million Houses Programme which began in 1984, was preceded in 1983 by the planning and preparatory year. This was a departure from previous practice in that it sought to eliminate the *ad hoc* character of previous programmes and through demonstration projects of prototype development, train the various participatory groups, develop technical information packages and provide guidelines on the optimal use of resources.

Another dimension of the programme is the continuing centre-periphery relationship. While the centre (NHDA) determines national policy and programmes and provides funds (loans) and technical advice, the spatial planning and implementation unit is the Gramodaya Mandala area, and the effective institutions at the periphery are the Gramodaya and Pradeshiya Mandalayas. The centre monitors progress and evaluates performance and issues new implementation guidelines for the following year.

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CHAPTER 7

LAND AND ENVIRONMENT

The focus of this chapter is on the use and management of land as a key resource for housing. It examines the requirements of land for housing, both in the urban and rural sectors, discusses aspects of price escalation and scarcity of land in the Colombo urban region and considers various policy options available in the prevailing situation. In the concluding section, the institutional framework, especially that pertaining to the physical environment for housing, is examined and the need for an integrated land policy in regard to urban development and urban housing is stressed.

Management of the Resource

In many developing countries, the problems of land use and land management demand special attention. The rapid increase of population, the changing structure of the economy and the processes of urbanisation and commercialisation, all combine to exert severe pressure on the available land resources.

In a small and densely populated developing country, such as Sri Lanka, the efficient management of land resources is of the utmost importance. With 235 persons per square kilometre, the population density in Sri Lanka is the second highest among Asian developing countries. It has about one-third of the per capita land available in Thailand and less than one-fifth of that of Malaysia. Population densities have risen from 125 persons per square kilometre in 1953 to 235 in 1982. In the districts of Colombo and Gampaha, which contain 51.5 % of the total urban population in the country, the density has risen from 833 persons per square kilometre to 1,534 persons. (See Table 1).

It is in this context that the role of land in the housing sector is examined. A wide variety of factors affect the availability and use of land for housing. They have a significant impact on the volume

of housing investment and the growth of the housing stock. For example, land values and the supply of land in the market will depend on government policies relating to the management and the release of state land.

A vital factor in the process of urban development is the constant escalation in the value of land. In the urban setting, the value is primarily a reflection of the competing uses for the land. As the ratio of land value to that of buildings located on it rise, changes in the built environment and physical stock must take place. Low-value building will give way to construction of higher value. The pattern of use will change. Residence will be replaced by commerce and other non-residential uses. It is this process which is concerned primarily with the efficient use of land. It cannot be left entirely to the market, but requires careful management and comprehensive urban planning. We need to see what this implies in the case of the Urban Sector and housing in that sector.

Housing Demand and the Requirements of Land

A projection of the demand for housing in the Urban and Rural sectors in relation to anticipated growth of population and household formation has been provided in Chapter 4 of this study. It will be seen from the medium estimate that Sri Lanka requires a total of approximately 98,000 additional housing units per year during the period 1982-1991. Of this, approximately 23,000 will be in the urban sector, 75,000 will be in the rural sector.

There are no reliable estimates of the requirements of land for the estimated volume of house construction in the Rural and Urban sectors. Such estimates would have to be made on the basis of certain norms regarding the extent of land set apart for residential purposes and the related amenities. These vary widely between the Urban and Rural sectors as well as within each sector. Until recently, the minimum extent of land required for constructing a house in the urban area was 15 perches. As urban land for housing became increasingly scarce and expensive, this minimum requirement was reduced to 6 perches. This has been further reduced under the provisions of *Section 81 of the UDA Planning and Building Regulations*, whereby residential buildings under any housing or development scheme meant for low-income earners or to house

TABLE 1
POPULATION DENSITY BY DISTRICTS

District	1953		1963		1971		1981	
	Density persons (sq. km)	(sq. km)	Density persons (sq. km)	(sq. km)	Density persons (sq. km)	(sq. km)	Density persons (sq. km)	(sq. km)
1. Colombo	816	2,051	1,054	2,051	1,302	652	2,603	652
2. Kalutara	324	1,606	391	1,606	455	1,606	515	1,606
3. Kandy	355	2,367	441	2,367	501	2,157	476	2,157
4. Matale	86	1,995	128	1,995	158	1,995	179	1,995
5. Nuwara Eliya	265	1,227	324	1,227	369	1,437	425	1,437
6. Galle	310	1,673	380	1,673	440	1,673	437	1,673
7. Matara	332	1,246	413	1,246	471	1,246	517	1,246
8. Hambantota	73	2,593	105	2,593	131	2,593	164	2,593
9. Jaffna	190	2,498	237	2,498	281	2,072	401	2,072
10. Mannar	17	2,479	24	2,479	31	2,002	53	2,002
11. Vavuniya	9	3,707	18	3,707	25	2,645	36	2,645
12. Batticaloa*	37	2,464	74	2,464	104	2,464	134	2,464
13. Amparai		2,618	69	2,618	91	4,539	130	4,539
14. Trincomalee	31	2,985	51	2,985	73	2,618	98	2,618
15. Kurunegala	131	4,772	178	4,772	154	4,772	254	4,772
16. Puttalam	275	2,976	100	2,976	127	2,976	166	2,976
17. Anuradhapura	22	7,129	38	7,129	54	7,129	83	7,129
18. Polonnaruwa	55	3,403	33	3,403	48	3,403	77	3,403
19. Badulla		2,818	185	2,818	218	2,818	228	2,818
20. Moneragala		7,134	18	7,134	128	5,580	39	5,580
21. Ratnapura	130	3,238	169	3,238	204	3,238	246	3,238
22. Kegalle	284	1,662	348	1,662	392	1,662	410	1,662
22. Gampaha**	—	—	—	—	—	—	993	1,398
24. Mullaitivu**	—	—	—	—	—	—	39	1,966
Total	—	64,651	—	64,651	197	64,651	230	64,651

* Between 1953 and 1963, Batticaloa District was divided into Batticaloa and Amparai Districts. The Anuradhapura District was divided into Anuradhapura and Polonnaruwa Districts, and Badulla District into Badulla and Moneragala Districts. The newly-formed Polonnaruwa and Moneragala Districts also include some area of the old Batticaloa and Matale Districts.

** Not demarcated until 1978.

Source : (1) UN/Economic and Social Commission for Asia and the Pacific—*Population of Sri Lanka*, Country Monograph Series No. 4, 1976.
(2) Central Bank of Ceylon (Statistics Dept.)—*Economic and Social Statistics of Sri Lanka*, Vol. III, No. 2, December 1980.

existing or potential slum and shanty inhabitants could be erected on blocks of 2 to 3 perches. But minimum standards must be maintained. The average housing site, however, is likely to be considerably larger than the minimum. Allowing an average of 12 perches of land for constructing a housing unit in urban areas and an additional 25 % for road access and other common amenities for which land will be required, the extent of land required for the projected housing demand in the Urban sector would be approximately 345,000 perches per year, or nearly 2,200 acres. This figure is based on the assumption that approximately 23,000 housing units would be added annually to the urban housing stock. (See Table 2).

The total requirement of urban buildable land over a period of ten years would, therefore, be in the region of 22,000 acres. Of this, approximately 40 % would be required in the Colombo District (8,800 acres) and 11 % in the Gampaha District (2,400) if the district shares of the total urban population are used as the basis of urban housing demand in the future. This may not accurately reflect the future trends as internal migration and differential rates of population growth are likely to alter the district shares of the total urban population. However, for the purpose of obtaining an idea of the broad magnitude of the total extent of land that would be required for urban housing, these assumptions would be sufficient.

Similarly, on the basis of a minimum of 30 perches for a housing unit in the Rural sector, inclusive of space for a well and home-garden, the extent of land required annually for rural housing would be approximately 2,340,000 perches or about 14,600 acres. On this basis 146,000 acres will be required over a period of ten years. This estimate is based on the assumption that approximately 75,000 housing units would be added to the rural housing stock per year.

In arriving at an estimate of the extent of land needed for housing, it can be assumed that the replacement of the depreciated housing units will take place on the land which they occupy at present and that no additional land will be required for the purpose. If we project these estimates over a twenty-year period, which would be the more relevant time-span for long-term urban planning, the total extent of land would be a little more than double the estimated requirement for one decade.

It has to be repeated that these estimates are only broadly indicative of the aggregate extents of land that would have to be set apart for housing in the two sectors. They will vary considerably if the assumptions regarding any of the significant determinants are modified or changed. These estimates have assumed, for example, that proportions of the urban and rural population will not show any substantial shift. A more dynamic process of urbanisation than we have witnessed in the past will alter these proportions and exert more pressure on the physical space and land resources of the Urban sector. If it is assumed that the urban sector would increase its share of the housing stock to 30 % of the total by the year 2,000,

TABLE 2
PROJECTIONS OF LAND REQUIREMENTS FOR HOUSING

	URBAN	RURAL*
1. Land per unit	15 perches	30 perches
2. Average number of units per year ..	23,000	75,000
3. Average requirements for one year ..	2,200 acres	14,600 acres
4. Total requirements for 10 years 1982-1991 ..	22,000 ..	146,000 ..
5. Total requirements for 20 years 1982-2001 ..	44,000 ..	305,000** ..
6. Average annual requirements for the 10 years 1992-2001 on altered proportion of urban and rural to reach a ratio of 30 : 70 (approx.) by 2000 A.D. (Total houses required 110,000)	31,000 ..	144,000 ..

*Rural includes Estates.

**146,000 for 1982-1991 and 159,000 for 1992-2001.

Note These estimates use the *medium* projections of housing needs given in Chapter 4.

about 10 % more land than in the previous estimate would be required during the 1982-1991 period. The estimates of land requirements for urban housing, however, may vary according to the type of housing that is provided. If in the process of urbanisation the demand for housing becomes concentrated in particular areas and the value of land continues to escalate steeply, the pattern of housing in these locations will have to shift to high-rise apartment buildings and the available land will be used more intensively. Concurrently, urban areas themselves would expand, resulting in the dispersion of housing to outlying suburban and semi-urban areas where the constraints on land will be less severe. All these changes will affect the pattern of land use and the demand for urban land.

At first the total extents of land in both the Urban and Rural sectors derived from the estimates may not seem particularly large or

likely to create serious problems of supply. While this may hold good for the Rural sector, the problems in the Urban sector are likely to be significantly different, particularly as much of the demand for land will be concentrated in the Colombo urban region. Therefore, careful physical planning will have to be undertaken. For example, in order to relieve the centripetal pressures on the city the urban infrastructure would have to be developed in the outlying areas to attract and promote residential construction by those groups which are now seeking residential land close to the city centres.

Land for Urban Housing

The population in the Urban sector has been increasing over the years and the scarcity of land for housing has assumed serious proportions for certain households of the Urban sector, particularly the urban sector of Colombo District, which contains the centres of administrative and economic activity of the country. The population of the Colombo Municipality itself increased only by 4.2 % for the entire decade 1971-81, while the rate of population increase declined significantly. The population in the Urban sector of Colombo and Gampaha grew from 1.47 million in 1971 to 1.65 million in 1981, an increase of 11.6 %. The suburbs are a continuous urban extension of Colombo city and include an area within 10 to 15 miles around the city, particularly in the southern direction.

It is in the Urban sector that the supply of land will emerge as a serious constraint for the housing sector. Here, too, the problem is likely to assume serious proportions only in a few districts such as Colombo, Gampaha, Jaffna, Galle and Kandy. Of these, by far the most important would be Colombo and Gampaha districts. In the former the urban population is 74.3 % of the total population of the district, reflecting the high level of urbanisation within it. The population density in the district is 2,602 per square kilometre. This has inevitable consequences for the availability and demand for land.

In the indicative estimate of land requirements given earlier in this chapter, the extent of land required for urban housing was estimated at approximately 22,000 over a period of ten years, or about

44,000 acres over 20 years. The extent required in the Colombo District would be approximately 40% of this amount in ten years. This might be compared with the total extent of 1,700 acres available for reclamation and development in the Colombo region. It is in the Colombo District, therefore, that high priority has to be given to the formulation and implementation of policies for the efficient use of land.

Steep Rise in Land Prices

The increasing demand for urban land and the scarcity are reflected in the steep and rapid increases in the prices of land in and around the city of Colombo. These increases have outpaced the general rate of inflation in the country. According to one assessment of the recent price escalation, the total value of residential and commercial land in the city of Colombo increased by approximately Rs. 30,000 million during a period of two to three years—an increase which is roughly equal to the total national income in 1977 at 1977 prices. Table 3 gives the relevant information for some areas of the Colombo Municipality*. It contains the estimated values for localities in the city, which have been obtained from the Urban Development Authority. It will be seen that the value of a perch of land varied from Rs. 12,000 in Mattakkuliya to approximately Rs. 150,000 in Fort/Pettah.

The records maintained by the Registrar of Lands relating to land transactions, point to an overall tenfold rise in land values between the period 1977-79. Land transactions in the Fort area reveal that the value of a perch of land, which was Rs. 20,000 in 1978, rose to about Rs. 80,000 and subsequently to a range between Rs. 120,000 and Rs. 150,000 in 1979 and 1981 respectively. In Slave Island, prices rose from Rs. 8,000 in 1978 to Rs. 15,000 and subsequently to Rs. 50,000 at the end of 1979. Steep increases were also recorded in Kollupitiya and Cinnamon Gardens, where the price of a perch of land went up from Rs. 10,000 per perch to Rs. 80,000 between the years 1977-1979.

In the case of suburbs, such as Dehiwela, Mount Lavinia, Ratmalana and Nugegoda, price increases have been significant.

*The land values within each of these planning units vary according to location and use. The figures indicate the approximate upper limits in the area.

For example, the price of a perch which stood at Rs. 1,500 in 1978 rose to Rs. 8,000 in 1980. In the course of this study, senior officials of the Valuation Department were interviewed with regard to the question of land values in the recent past. It was not possible to obtain a precise range within which price escalation has taken place in the city and the suburbs because of the wide variations in land prices even within a limited locality.

The demand for land evidenced by this price escalation includes both land for residential purposes as well as for various commercial and industrial uses. The expansion of economic activity in the second half of the 1970s has resulted in a spurt of demand for land for non-residential uses within and close to the central locations in Colombo city. The escalation of land values within the area of the Greater Colombo Economic Commission reflects the nature of the demand for land consequent on the establishment of the Industrial Processing Zone. (See Table 4).

Programmes and policies of the Urban Development Authority have consequently attempted to regulate and facilitate the shifts of land use in relation to their demand. However, when allowance is made for this non-residential component, a large part of the increases in land values relates to the housing sector. In these urban locations in which the demand for land for housing is increasing

TABLE 3
ESTIMATED LAND VALUES IN THE CMC
AREA (1981)

<i>Planning Unit</i>		<i>LAND Perch (1/160 acre) Rs.</i>	<i>VALUE Sq. Metre Rs.</i>
1.	Fort-Pettah	150,000	6,000
2.	Kochchikade	60,000	2,400
3.	Maradana	60,000	2,400
4.	Kollupitiya	75,000	3,000
5.	Mattakkuliya	12,000	480
6.	Kotahena	60,000	2,400
7.	Grandpass	60,000	2,400
8.	Dematagoda	30,000	1,200
9.	Borella	60,000	2,400
10.	Cinnamon Gardens	75,000	3,000
11.	Bambalapitiya	60,000	2,400
12.	Wellawatte	30,000	2,000
13.	(a) Narahenpita	50,000	2,000
	(b) Kirillapone	40,000	1,000

Source : U.D.A.

rapidly, the problem is not merely one of availability of land in physical terms but also of escalating prices and the cost of land proportionate to the cost of housing. This problem particularly affects those in need of housing in the middle and low-income groups. The share in the cost of land of the total housing investment has risen disproportionately.

TABLE 4
LAND VALUES IN THE GCEC AREA (1977-83/84)

Area		1977	1983/84
		Rs. per perch	Rs. per Perch
(1)	Seeduwa Area		
	(a) Adjoining Highways ..	275 — 350	2,500 — 3,500
	(b) Interior ..	50 — 75	1,000 — 1,500
(2)	Negombo Town Area		
	(a) Commercial Area ..	1,000 — 2,500	10,000 — 20,000
	(b) Outside ..	50 — 350	900 — 3,500
(3)	Ja-Ela Town Area		
	(a) Commercial Area ..	1,000 — 1,500	4,000 — 8,000
	(b) Outside ..	50 — 250	2,000 — 4,500
(4)	Biyagama Area ..	50 — 200	750 — 2,000
(5)	Kadawatte Area		
	(a) Commercial Area ..	1,500 — 3,000	5,000 — 10,000
	(b) Interior ..	500 — 1,000	1,500 — 3,500
(6)	Wattala Area		
	(a) Commercial Area ..	600 — 1,000	10,000 — 15,000
	(b) Interior ..	150 — 400	2,000 — 5,000
(7)	Peliyagoda Area		
	(a) Commercial area ..	2,500	5,000 — 15,000
	(b) Interior ..	500 — 1,500	2,000 — 5,000
	(c) Marshy Lands ..	150 — 500	200 — 3,000
(8)	Kiribathgoda Area		
	(a) Commercial Area ..	2,000 — 4,000	10,000 — 20,000
	(b) Interior ..	300 — 1,000	1,500 — 8,000
(9)	Ragama Area		
	(a) Commercial Area ..	—	6,000 — 8,000
	(b) Outside ..	—	1,000 — 4,000
(10)	Gampaha Area		
	(a) Commercial Area ..	—	8,000 — 15,000
	(b) Outside ..	—	1,000 — 4,000
(11)	Kandana Area		
	(a) Commercial Area ..	—	10,000 — 15,000
	(b) Outside ..	—	1,500 — 5,000

Source : Valuation Department

At prevailing prices, a house site of 10 perches would cost between Rs. 50,000 to Rs. 150,000 in a locality within a range of

approximately 5 to 10 miles from Colombo city. If we consider this in terms of a loan repayable at prevailing interest rates for housing, we would see that the value of land alone has put the housing investment beyond the reach of the middle and low-income house builder. We shall see later that this calls for simultaneous action on several fronts.

In considering the problems of price escalation and scarcity of land in the Colombo urban region, there are, however, several aspects which we need to bear in mind. First, if we examine the volume of house construction in the period 1977-81, we observe that it was precisely during the period when the price escalation occurred both in respect of land and other inputs into housing that the rapid increase in house construction took place. Therefore, it would appear that, by and large, land values did not act as a severe deterrent to house construction. This would be partly attributable to the fact that even in the case of middle-class house builders a large component of the land for housing was derived as inheritance, or gift, or transfer of State land. Urban households which have to purchase land would not be able to finance both land and building from income, because of the prevailing high land and construction prices. This situation is reflected in the field survey that was conducted in June 1983 for the purpose of the present housing study. (See Chapter 5). It is also likely that new sources of income, such as the remittances from income earners abroad helped to finance part of the housing investment that occurred including the purchase of land.

Recent trends, however, indicate that house construction in the Colombo urban sector has been on the decline and that land values have stabilised. For instance, land prices in Kollupitiya and Cinnamon Gardens have stabilised around Rs. 60,000 to Rs. 80,000, while in Bambalapitiya they have stabilised around Rs. 40,000 to Rs. 50,000. In Narahenpita, Thimbirigasyaya and Wellawatta, where land values were comparable with those prevailing in Bambalapitiya, prices have settled around Rs. 30,000 a perch. Some of the problems related to land availability and land prices, therefore, seem to be finding their solutions through the operation of normal forces in the market and without serious detriment to the flow of investment into housing.

We observe that prices vary widely within a radius of ten to fifteen miles from the centre of Colombo. In such a situation it is to be expected that the normal market forces would operate and that house builders would move farther away from the centre to the relatively low-cost areas. This is by no means a new trend. It has been proceeding during the past three decades. The relatively slow rate of growth of the urban population within Colombo city compared with the rapid increase in the suburban population reflects this trend.

However, the unusually wide range of prices within a relatively short radius indicates the high preference of the house builders for locations within the Colombo metropolitan area and closer to the centre of the city. This may partly be attributable to the changing structure of income distribution in the urban population in which the more affluent sections have acquired greater purchasing power to bid for the valuable residential property in the best areas. It may also partly reflect the changes in the structure of prices, such as that of transport and the cost of access to various facilities which to some extent offset the advantages of low land prices in the outlying areas.

Land Values in Rural Areas

Since 1977, land values have also appreciated in the rural areas. In rural areas, where development projects have been initiated, the rise in land values has been greater than in the rest of the rural sector. The following figures illustrate this trend.

<i>Area</i>	1977	1983/84
1. Kalawewa Area		
Paddy Land	Rs. 2,000 — 2,400 per acre	Rs. 25,000 per acre
2. Anuradhapura		
Paddy Land	Rs. 5,000 — 7,500 per acre	Rs. 40,000 per acre
Commercial Land	Rs. 1,000 per perch	More than Rs. 10,000 per perch
3. Nochchiyagama		
Paddy Land	Rs. 2,000 — 2,500 per acre	Rs. 15,000 to 20,000 per acre

Source : Valuation Department

Measures and Policies Relating to Land for Urban Housing

In this situation the approach to the problem of land for urban housing would have to be multifaceted. *First*, it would have to include measures and policies which are designed to augment the supply of land for house construction. *Second*, programmes and policies would have to be directed at ensuring that the available land is used with the greatest efficiency. This also means that density in house construction should be promoted where appropriate. *Third* the physical planning of the development of the entire urban complex in and around Colombo should be such that it promotes the expansion of urban housing into the outlying suburban and semi-urban areas. There is scope for a wide range of policies and measures which deal with each of these three objectives.

Augmentation of Land Supply

In regard to the augmentation of the supply of land, there are several possibilities, most of which have already received the attention of the government. An important government programme in this field is that of the Colombo District Low-Lying Areas Reclamation and Development Board. It undertakes the reclamation and development of low-lying areas that are declared under the provisions of the Board's Act and renders these areas suitable for housing, industry, commerce or agricultural purposes. The Board is also charged with the responsibility of managing and controlling the development of use of lands in these areas pending development by the Board. The extent of low-lying and marshy land in and around Colombo has been estimated at around 1,700 acres. Between 1977 and 1982, 500 acres of such land were reclaimed by the Board and 200 acres sold to the National Housing Development Authority. Most of this land was utilised for housing. The remainder was sold to other state organisations, such as the Urban Development Authority as well as to embassies. Private developers are not inclined to build on this type of land as the reclamation cost is high (about Rs. 15,000 a perch). Further, there are problems of surface drainage, which necessitated regulation of the filling of even private low-lying land. The UDA has utilised some of the land purchased from the Board for its shanty upgrading projects.

What may be further needed in this area is the medium and long-term planning for the reclamation of other lands outside Colombo, such as the Muthurajawela tract of marshy land. This tract consists approximately of 5,300 acres and is close to the city. Various plans had been prepared for its utilisation, but they have not been successfully implemented. The area had been recommended for housing as far back as 1966¹, because owing to its age and poor soil conditions it would not be suitable for heavy construction. The feasibility of reclaiming the land would of course depend partly on the market value and availability of land in the vicinity. The development of Muthurajawela and similar areas in the Gampaha and Colombo districts which are close to the city will become a feasible proposition as the pressure on urban land increases in the late eighties and early nineties.

Unutilised State Land

The land owned by the state is another resource from which land could be made available for urban housing. It can be a critical factor for stabilising land prices at a time of acute land scarcity and rising land prices. While the Land Commission is the principal authority responsible for the management and allocation of state land, there is a considerable extent of state land vested in government departments, public corporations and local authorities for various purposes and uses. There is at present no full inventory of the available state land in Colombo District. The government would need to take an inventory of all state land in Colombo District, giving high priority to land in the Urban sector.

Available state land falls into several categories. There are reservations of various types, allotments of land dispersed throughout the district and vacant "under-utilised" land available for building in the premises of government buildings and residential quarters. Action has already been initiated by the UDA to take over several extents of vacant state land and make them available for development in accordance with its plans (See Table 5).

The under-utilised and other types of state land which would be available for building would be identified through intensive surveys. Thereafter, the government would have to prepare a comprehensive plan to obtain the best use of these land resources.

TABLE 5

EXTENT OF LAND VESTED IN THE N.H.D.A.

<i>Districts</i>					<i>Unit Acres</i>
1.	Colombo	..	..	..	58
2.	Kalutara	..	..	..	50
3.	Galle	..	..	..	250
4.	Matara	..	..	..	74
5.	Hambantota	..	..	..	40
6.	Kurunegala	..	..	..	28
7.	Gampaha	..	..	..	106
8.	Ratnapura	..	..	..	317
9.	Moneragala	..	..	..	57
10.	Kandy	..	..	..	117
11.	Nuwara Eliya	..	..	..	72
12.	Badulla	..	..	..	17
13.	Matale	..	..	..	181
14.	Amparai	..	..	..	40
15.	Puttalam	..	..	..	1
16.	Polonnaruwa	..	..	..	62
17.	Jaffna	..	..	..	4

Source : National Housing Development Authority

Private Vacant Land

Apart from state land there is likely to be vacant land which is now not entering the market for a variety of reasons. There are, for example, residential buildings with large extents of garden which in normal circumstances would be released for house construction. These, however, may be voluntarily withheld by their owners who prefer to keep such land in order to enjoy the satisfaction of a spacious house site and a large garden. The reservation price on such land will be higher than the current market price. In other cases, land may lie vacant due to problems of ownership, multifamily ownership, land which cannot be sold without large legal expenses. As the pressure for land increases and prices rise, such land should eventually enter the market. In many cases, however, the "reservation price" may be too high and may impose heavy social costs before market forces release such land if they succeed in doing so at all. It might, therefore, be worth considering the feasibility of introducing disincentives, such as a higher Wealth Tax on excess land of this type. The Alif Committee report had contemplated such a levy.²

Such interventions, however, should be introduced with great caution. On the one hand, they may impose restrictions which are too harsh on the private owners who may have their own future

plans with regard to the use of this land. On the other, the definition of what constitutes excess land could create problems of various types in regard to interpretation and application.

Defective Title

The third category of land which needs to be considered in any comprehensive policy for urban development would be land which has unsatisfactory title and which for these reasons remains unused. In such cases, the government could either take action of a special nature to facilitate the establishment of undisputed title so as to make the land marketable or could acquire such land to the state and thereafter make it available for housing. Here again, recommendations which have been made on several occasions concerning this problem have to be pursued and implemented.³ Under the Land Title Clarification Programme, the Department of National Housing sought to increase the volume of land for housing by acquiring desirable tracts of land whose title was defective and distributing them to prospective house builders.

Regulations Governing House-building

In regard to measures concerning the optimal use of land there are several initiatives which are relevant. One such step was taken recently to reduce the requirement of the minimum extent of land necessary to build a house from 15 perches to 6 perches in urban areas, and to 2-3 perches for low-income categories.

It would be useful to examine the various regulations that at present govern house-building, such as the norms pertaining to road reservations and space between buildings, and to see whether these require further modification in the light of the new conditions that have arisen. This would also apply to the design and plans of housing estates and residential complexes.

Apart from the regulations which require compliance, the plans for the layout of the houses and the road network and related facilities would need to pay attention to the cost effective use of land and optimum apportionment of land between dwellings and other uses. A recent study of government housing schemes indicates that not adequate attention has been paid to this aspect and that

as a result, the use of land has been somewhat inefficient. Apart from improving the physical planning of the government housing schemes, it is necessary to disseminate information and knowledge among architects and private house developers and house builders on this aspect of housing.

Slums and Shanties—Optimal Use of High Value Land

Another set of policies and programmes which have high priority for the use of land in the urban areas is that which deals with the problems of slums and shanties. Although some of the shanties now occupy land which is either unsuitable or would not be available for permanent construction, such as reservations and banks of canals, a large share of shanties and almost the entire stock of slum houses occupy land which in many instances, is of very high commercial value. The value of land itself is several times that of the sub-standard housing units located on it.

Both the short-term and long-term policies in regard to shanties and slums have, therefore, to be formulated with a view to making the best use of the land occupied by them as well as satisfying the housing needs of the population which at present occupies the housing units on this land. Conventional slum and shanty clearance schemes which result in expensive relocation of the present occupants may not be the answer. They often fail to take account of the complex social structures which have evolved within these slum and shanty communities, and which sustain them in their present locations.

At the same time it may not be feasible to limit policy interventions entirely to upgrading and improvement of the sub-standard stock, retaining them in their present locations. We have discussed some of the implications in Chapters 3 and 6. The problems of slums and shanties have been the subject of considerable attention and there have been several experiments and proposals to deal with them. The UDA* in its Master Plan for Colombo considers several alternatives depending on the location of slums and shanties. Where land values are very high, relocation has been proposed. In other areas where the land values are lower, upgrading has been

* The UDA's programme for shanty upgrading was absorbed into the NHDA early in 1985.

found acceptable. In still other locations which are not suitable for house construction, such as banks of canals and low-lying areas, the relocation will have to be done without any alternative use for the land, helping to eliminate existing environmental hazards.

Where relocation has been considered for high-value areas, various alternative solutions are possible. Some of these have been adopted. Part of the land could be used for multi-storey construction to re-house the present occupants in the sub-standard units and part released for alternative uses commensurate with the value of the land. It is possible that many such schemes could be made attractive for property developers who could bear at least part of the relocation cost. In some instances, a property developer may be prepared to pay the purchase price to owners if they accept it collectively and release the land for re-development. The scale and pace at which current plans and programmes are moving do not promise either a speedy transformation of the housing stock which can be considered for upgrading or the early implementation of plans for the best utilisation of the land in areas where relocation has to be undertaken.

Most of the ingredients of a comprehensive strategy are already available in plans that have been prepared and projects that have been implemented. The areas which should be considered for relocation, upgrading and so on, have also been broadly identified. On the basis of existing experience and information, it should be possible to prepare a well-defined plan of action spread over a period of about 10 to 15 years. This could be done after clearly designing the areas under the different components such as upgrading and relocation, and testing the different solutions for financial viability and acceptance by the households involved.

Shift in Pattern of Housing

Another set of issues which has great importance for the efficient use of land are those which concern the changes and the shifts which have been taking place in the location of housing in the recent past, particularly after 1977. There has been a steady expansion of the commercial area from the centre of Colombo Fort to the south of Colombo, especially along the Galle Road. This expansion has penetrated into residential areas. The rapid escalation

of land values has compelled the middle and lower middle income groups to move further out towards the suburban and semi-urban areas.

In response to demand it is likely that, in localities which are in close proximity to the city centres and where land values are very high, the pattern of housing will shift from present single and two-storeyed structures to multi-storey apartment buildings. This would apply particularly to the land which is still available for building in these areas. Therefore, any national housing programme may have to contain a component of apartment buildings located within and close to the city. This component of high-rise apartments for different income groups will require policies and programmes which specifically promote such construction. Multi-storey apartment construction will be beyond the reach of the individual house builder. It will require investment by either the state or the large-scale private sector house developer. In the recent past, private house developers had been able to mobilise financial resources for housing schemes by obtaining advances from prospective buyers of the housing units that are constructed. Under the Ownership of Apartments Act it should be possible to undertake similar financing schemes for high-rise apartment buildings.

Decentralisation

While a limited component of high-rise house construction may well have a place in Colombo city, it would be necessary at the same time to control the increase in density and ease the pressure on land in the centre by promoting housing development outside the city as an integral part of a strategy to cope with the land problem. The expansion of housing into the suburban and semi-suburban areas, is intrinsically linked with integrated urban planning for the Colombo District as a whole. A comprehensive physical plan for urban expansion would have to take into account the need for decentralisation of some of the government activities.

There have already been major developments in this area. The Parliament has been relocated in Sri Jayawardhanapura. Industrial zones have been located outside the Colombo area within the Gampaha District. The decentralisation of government and the

formation of District Development Councils provide another opportunity for shifting the district administrative centre to a location outside central Colombo. All these developments point to the potential for locating several sub-centres of urban activity which can contain and reduce the centrifugal pull to the metropolitan centre. The pattern of urban expansion that is envisaged here would be different from the model for developing outer points of residential communities which commute to the centre for employment and services.

In what is suggested, the urban complexes outside Colombo city would themselves be centres of employment having a well-developed infrastructure in health, education and other important services. Such expansion will reduce the pressure on transportation, which in the present context of energy prices has become a very costly part of the urban system. The UDA has recently designated areas close to the city which could be developed for multiple uses—administrative, commercial and residential. This would contribute to planned urban expansion. Within an overall plan of urban development of this nature, it would be possible to take other measures to facilitate and promote house construction in the suburban and semi-urban areas outside Colombo.

Development of housing sites in the vicinity of Colombo city and its main suburbs is one obvious initiative. Land suitable for housing could be selected and provided with the required infrastructure and facilities such as water supply, access roads, electricity. Well-developed locations which are available at reasonable prices are certain to attract prospective house builders. Such an activity could be commercially undertaken by the NHDA as well as private sector property developers. The state and the private sector could also collaborate in such ventures.

Land for Rural Housing

Although there is considerable variation in the density of population and the availability of land in the rural sector, land does not appear to be a constraint for house construction in this sector at the present time, nor is it likely to be so in the near future.

The availability of highland for house construction has posed a problem only in the densely-populated Wet Zone and has been most acutely felt in parts of the rural sector which are contiguous to the plantations in the central region.

We saw in Chapter 6 that the state has implemented two major programmes in the rural sector with an important component of housing. One is the Village Expansion Programme under which the government has distributed available state land which is close to an existing village. Where such land has not been available, the government has acquired suitable private land for distribution to landless peasants. The second was the colonisation programme undertaken by the government. Under this, the state organised the planned migration of landless peasants from the densely-populated districts to the new agricultural settlements in the Dry Zone, where a considerable extent of new arable land was available. Table 6 provides the data on the distribution of state land since 1977. Houses under these programmes were constructed by allottees and in some cases by the government. In most of these schemes the government provided assistance for housing.

With the launching of the Mahaweli Development Scheme, a large extent of additional highland will be made available to homesteads of settlers. Depending on the phasing of the programme of development, the Mahaweli Scheme will provide facilities for the

TABLE 6

REDISTRIBUTED LAND BY SCHEME SINCE 1977

<i>Type of Scheme</i>	<i>Allottees</i>	<i>Number of Parcels</i>	<i>Acreage</i>
1. Major Settlement ..	3,058	—	8,326
2. Highland Settlement ..	117	—	222
3. Youth Settlement ..	909	—	2,067
4. Village Expansion ..	14,890	—	20,432
5. Regularisation of encroachments	—	345,620	481,728
6. Issue of Permits ..	—	255,633	314,056
7. Grant Provision Law ..	—	—	9,269
8. Swarnabhoomi Programme ..	—	—	50,922
Total ..			887,022

Source : Land Commissioner's Department

Note : Since 1935, an estimated 1.9 million acres of land have been alienated under the Land Development Ordinance (LDO) to about one million households. Items 7 and 8 refer to land given under the LDO.



settlement of approximately 240,000 families who will obtain both agricultural holdings and highland allotments for their houses.

Apart from the distribution of land indicated above, a considerable extent of state-sponsored housing in the rural areas in recent years has utilised land which was taken over by the state under the Land Reform Programme of 1972. An extent of 1,955 acres of land acquired by the Land Reform Commission has been made available for housing in the districts of Colombo, Badulla, Kalutara, Galle, Hambantota, Matara, Moneragala, Nuwara Eliya, Puttalam, Ratnapura, Gampaha and Kegalle.

The overall situation in the rural sector is that the availability of land does not appear to be a constraint on housing at present, nor is it likely to be so in the near future. Here it is important to underline the fact that this large extent of land which has been made available for housing in the rural sector has been either given free or at a nominal rent.

The Institutional and Policy Framework for Land Use in the Urban Sector

To increase the supply of land for housing and to improve urban land utilisation, would require both the strengthening and improvement of existing machinery and programmes as well as new initiatives. The responsibility for land use and land management is at present distributed among a number of agencies. The Land Commissioner's Department is the principal agency responsible for the custody of state land as well as its allocation. The Reclamation Board is responsible for low-lying marshy areas which are declared as reclamation areas. The Department of Town and Country Planning and the Central Planning Commission together with the local authorities earlier administered the Town and Country Planning Ordinance, which concerns the planning and orderly development of selected areas. However, in September 1978, that position was changed with the establishment of an Urban Development Authority to promote integrated planning and implementation of economic, social and physical development of certain areas as may be declared by the minister in charge of the subject to be urban development areas. This law was amended in January 1982, enlarging its

scope and detailing the planning procedure pertaining to the physical development of lands and buildings. The UDA operates through the local authorities. Any schemes or projects under the Town and Country Planning Ordinance, or any other law, if in conflict with decisions of the UDA, could be declared inoperative by it.

Urban Land Planning

The Urban Development Authority is the national authority responsible for planning the development of urban areas, and dealing with more complex problems of urban development and regulation of land use in the Colombo region. Development regulations which have recently been introduced by the UDA are basically in two parts relating to physical planning and to building. They relate to such matters as the improvement or expansion of urban infrastructure, the development of housing, the upgrading of slum areas, establishment of industrial areas, creation of social and recreational facilities and conservation of places of historical interest.

According to available data on land use in the Colombo Municipal Council area, in 1977, out of a total of 3,733 hectares of developed area, residential land comprised 45.2 %, commercial land 5.4 %, industrial land 4.0 %, public and semi-public land 12.5 %, parks and playgrounds 16.3 % and roads and streets 3.8 %.

The proportion of land for recreational uses is very low in comparison with other cities and there is a high concentration of industries in the Colombo District. Under the new Urban Development Plan "inappropriate" industries will be shifted out of the city.

Zoning

Zoning provisions form an important part of the planning regulations. The earlier absence of appropriate zoning gave rise to adverse environmental effects, resulting from certain types of economic and industrial activity, congestion, air pollution by the increasing volume of vehicular traffic and misuse of physical resources. Two types of zoning have been formulated, namely, land use zoning and density zoning. The land zoning regulations prepared by the UDA consist of nine categories of land use—

- (1) Primary residential
- (2) Mixed residential
- (3) Commercial
- (4) General industrial
- (5) Special industrial
- (6) Public use
- (7) Semi-public use
- (8) Parks, playgrounds and open space
- (9) Deferred

This classification is an attempt to provide some rationalisation of the existing land use structure. Density zoning is a comparatively new concept for which there was no provision under the Housing and Town Improvement Ordinance. The need for density control has been most evident in congested areas in order to deal with problems caused by traffic congestion, the load on the infrastructure systems, polarisation of land value and inequitable resource utilisation. Through this machinery of zoning the UDA has begun to administer a system which regulates the uses of land in the city and its environs in accordance with a physical plan which is to be implemented over a period of time. Density control has to go hand in hand with urban expansion, which in turn requires a comprehensive physical development plan for the urban sector. The institutional framework and the main planning framework are already available for such a task.

Environmental Safeguards for Housing

The protection and improvement of the physical environment for housing cannot be considered in isolation from the broader national policies pursued for the management of the environment as a whole. The legislation on environment includes the Housing and Town Improvement Ordinance, the Town and Country Planning Ordinance, the Urban Development Authority Law of 1978, and its amendment of January 1982, the National Environment Act of 1980, and the Coast Conservation Act of 1981. The Municipal and Urban Councils are the agencies mainly responsible for administering the first two Acts. Along with the other three enactments, three agencies

were created and vested with the responsibility for administering these acts—the Urban Development Authority, the Central Environment Authority and the Coast Conservation Authority. The local authorities are responsible for the enforcement of various regulations relating to housing and specific to the protection of the physical environment. In the past, they have been seen essentially in terms of housing location and design, public health and the amenities needed for urban centres and towns. While the protection of the environment was an essential part of all these activities, they have been seldom approached and reached as an integrated set of measures and policies for the protection and improvement of the environment and its quality. The far-reaching changes in the physical environment caused by urbanisation, industrial development as well as new settlements in the rural areas have had environmental impacts which required both legislative measures and administrative machinery which could deal with these issues more effectively and on a broader national scale.

The recent legislation and establishment of new agencies dealing specifically with environmental problems have been a response by the government to this need. A framework of national policies for the protection of the environment and improvement of environmental quality is still in the process of being formulated. In such a framework, an assessment of existing environmental safeguards specific to housing and residential locations, and strengthening and co-ordination of relevant measures need to form an important component. The present institutional framework and the location of the agencies concerned with environment, urban development and housing under one Ministry has created conditions which are conducive to such a task.

Environmental Hazards of Colombo City

The environmental protection and improvement of, first, the slums and shanties without proper water and sanitation services pose an environmental hazard. Considering that slums and shanties comprise about 40 % of the housing in Colombo city, the protection and amelioration of their physical environment would require special and urgent attention independent of the upgrading of the housing component.

Second, the problems of surface drainage in the city have been aggravated by the new construction of buildings and roads. This has resulted in serious problems of inundation of roads as well as residential and other locations during rain. Third, the inland canal system which passes through parts of the city continues to be another grave environmental hazard. Fourth, arrangements for garbage and waste disposal in the city and its environs have not been able to cope with the expansion that has taken place. The dumping of garbage in open places, particularly on marshy land which can be reclaimed, has become another source of environmental pollution.

These issues indicate the need for a comprehensive plan for the improvement of environmental quality in the urban sector. Parts of the physical environment under critical stress would have to be systematically identified and necessary environmental policies and measures taken as part of one programme.

Industrial pollution

The zoning and urban development of the U.D.A. has to be complemented by other effective safeguards against industrial pollution and damage to the environment by various forms of economic activity. The Central Environment Authority and the Coast Conservation Authority are both engaged in formulating policies and measures designed to achieve this objective. All industrial projects and other development projects are to be carefully assessed for their environmental impact prior to approval.

Proposed industrial projects are required to submit an Environmental Impact Assessment Statement. Standards for pollution control and the protection of the environment have been laid down and relate to the following—

(1) Tolerance limits for industrial waste water discharged into—

- (a) public (common) sewer
- (b) inland surface waters
- (c) marine coastal waters.

- (2) Tolerance limits for industrial effluents discharged on land for irrigation purposes
- (3) Quality of inland surface waters (fresh waters)
- (4) Air emission norms
- (5) Typical noise level criteria
- (6) Buffer zones relating to different types of industry.

The Central Environment Authority is vested with the function of initiating action for environmental safeguards in development planning and monitoring of the impact of development and other major socio-economic changes on the environment. To facilitate work at the periphery, the authority has established institutional links in all districts. It is also entrusted with the responsibility of formulating a National Environment Code and preparing a National Conservation Strategy. The appraisal of the ecological and environmental impact of projects is also a function of the authority.

Coastal erosion has emerged as a major problem, resulting in the loss of sizeable areas of habitable land and has affected the value of residential property. The Coast Conservation Act has provision for the regulation of economic activities along the coast. The Coast Conservation Authority has undertaken a Coastal Zone Survey and a Coastal Zone Management Plan to deal with these problems.

Another important area of environmental relevance which has been neglected is the preservation and expansion of parks and wooded areas in cities and urban residential locations. The government has given importance to an extensive programme of tree planting which has some relevance for environmental quality. It has attempted to promote a popular awareness of the need to protect and conserve the natural environment. In the rural areas, efforts have been initiated to encourage forestry which can both be protective of the village habitat and its eco-system as well as yield economic benefits and satisfy the demand for fuel and timber.

Although the legal and institutional framework covers most of the areas pertaining to the various environmental problems that have a bearing on housing, what is needed is, first, better co-ordination of the policies and measures that are already being pursued. Second, environmental planning and policy need to focus on a

number of urgent problems such as those affecting the Colombo city, which have not yet received adequate attention, and on which action has to be taken on a systematic, integrated plan. For both the tasks, the environment-specific responsibilities of local authorities and the different national bodies would need to be more closely co-ordinated. The institutional framework envisaged by the Central Environment Authority, the Central Environment Council and the decentralised structure under it with its District Environment agencies provides some scope for such co-ordination in relation to the broader objectives of environmental protection and management of the environment.

Special Mechanisms for Management of Land for Housing

There are two mechanisms, one which has been recently proposed by the government⁴, and the other already in operation, which deal with the management of land for residential, civic and other non-agricultural purposes. These are the Land Trust and the Land Bank. The government recently approved in principle the establishment of a *Land Trust* through a *National Land Development Fund* under the Land Commissioner's Department'. It is to be vested with the responsibility for the planning and development of land (particularly in the non-urban areas) and the disposal of land on a sale or lease basis. This is designed to meet the needs of the middle income groups for agro-commercial cum residential purposes. The Land Trust is intended to function on a no-profit no-loss basis along commercial lines. Its primary objective is to release land to the market and to employ private capital resources for land development.

The National Housing Development Authority has a Land Bank which enables it to make land available for residential purposes. It should be possible to enlarge the scope of this Land Bank so that the NHDA will have under its control a reasonable extent of land for housing purposes immediately, and in the near future. This, too, could be a viable commercial undertaking and regulate the supply of land for housing. In this context the experience both of similar programmes and proposals in other capital cities such as New Delhi and Bangkok would need to be taken into account.⁵

Conclusion

There is a wide range of problems of considerable complexity which have to be dealt with in managing the supply of land for housing. The problem is acute in the urban sector, especially the city of Colombo and its suburbs. The analysis draws attention to several important policy initiatives that might be taken.

First, there are the issues relating to the augmentation of the supply of land. This requires an approach which includes the reclamation of available land and the release of unutilised land to the housing market. The latter will need a variety of complementary policies and measures. Existing state land may provide a possible source. The regulations regarding building may have to be further improved and relaxed where possible, to allow for optimal use of land for housing. Land which remains out of the market owing to defective title may require another set of measures for clearance of title. Disincentives in the case of large extents of vacant land, which now form part of residential property, may also have to be considered.

The second set of issues in regard to land use relates to the planning strategies for urban development. There are a number of problem areas where current approaches would require reappraisal and reorientation. These include the optimal use of high-value land which now contains low-cost substandard housing and other buildings, such as slums, shanties and low-income informal trading establishments or repair shops. The analysis in the chapter points to several options which considered an approach to slum and shanty problems where upgrading is balanced with other components, such as relocation; the need to have a component of apartment housing in a judicious mix of residential construction, particularly in the core city; and, finally, the need for a long-term strategy for decentralisation of urban development to ease the pressure on the urban core.

The management of land for urban housing on lines that have been indicated, requires an institutional and policy framework which coordinates the activities of various agencies which at present have responsibility for land management and land use in relation to different objectives. While the recent legislation has established a

legal and institutional framework which contains most of the elements necessary for planning of urban development and regulation of land use in the urban sector, there are several important matters which require closer attention if the most efficient use is to be made of the increasing scarce land resources in that sector.

Finally, the planning and development of housing must include the protection and improvement of the physical environment and the quality of the habitat. The institutional and legislative framework that has been recently established and the location of the UDA, the NHDA, and the Central Environment Authority under one ministry, provide the scope for well-coordinated plans and policies on environmental safeguards specific to residential settlements. In these plans, the growing hazards of the Colombo city require special attention.

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CHAPTER 8

FINANCIAL RESOURCES FOR HOUSING

Estimates of Resource Flows

The main sources of funds for investment in the housing sector are the savings and resources of households, the investments made by the state in housing and loans granted by lending institutions to house builders and house developers. In addition, there is a small flow of lending for housing investments which is available to employees in public and private sector organisations, mutual benefit associations and special loan schemes. (See Table 1). Full and accurate information on the total flow of resources into housing is not readily available. While the data pertaining to the investments made by the state as well as the volume of lending for housing made by the major financial institutions can be obtained, there is no ready source of information for the large bulk of the housing investment that comes out of private savings. For this part of the resource flow we have to rely on estimates which are derived from the national accounts and the data on gross domestic capital formation.

An analysis of the national accounting data prepared by the Department of Census and Statistics indicates that the total volume of household resources which went into the investment in housing ranged from approximately Rs. 1.47 billion in 1979 to Rs. 4.8 billion in 1982. The breakdown of the total investment in housing construction is given in Table 1. As a proportion of Gross Domestic Fixed Capital Formation (GDGF), housing investment varied from a low of 15.3 % in 1979 to a high of 21.8 % in 1981. Residential construction had absorbed 3.9 % of Gross Domestic Product (GDP) in 1979 and between 5.5 % and 6.2 % in the other three years. The share of household resources in total housing investment had varied widely. From 68.7 % in 1979 it had dropped to 39.8 % in 1980 and again risen to 78.8 % and 79.4 % in the two following years.

These figures could be compared with the estimates that were made for the Marga study in 1976.¹ While the shares of GDP absorbed by residential construction are in a comparable range, the shares of GDCF going into housing have fallen sharply. This is clearly attributable to the rapid increase in gross domestic capital formation as a share of GDP from about 18 % to 20 % in the late sixties and early seventies to much higher levels in the period after 1978. It rose from 25 % in 1979 to 30.1 % in 1982. This much higher level of capital formation contained a different mix of investment in which the investments in sectors such as agriculture, industry and the economic infrastructure expanded much faster than the housing investment.

Another way of approaching the estimate of the total flow of resources into housing investment is to examine the total volume of house construction that has taken place annually in the period 1971-1981. The analysis of these additions to the housing stock during the period indicates that the volume of resources that would have flowed into the housing sector to sustain the quantum of construction would have been quite considerable. The number of housing units by themselves is not an adequate measure of the increase in the volume of construction. Both, the average size of the housing units measured in terms of the number of rooms and the average number of rooms per unit had increased. Using 2.17 rooms as the average per housing unit in 1971, the 1981 stock with an average of 2.47 rooms per unit would have an equivalent of approximately 300,000 housing units in addition to what is reflected in the numerical increment to the stock.

Another important component of housing investment is the upgrading of stock whereby semi-permanent units are upgraded to permanent structures and various other improvements take place continuously, altering the quality of the housing stock. As indicated in the analysis in Chapter 2, it is likely that at least 147,000 houses have been upgraded from the semi-permanent category to the permanent category during 1971-1981. When all these factors are considered together, we see that the flow of resources to the housing sector has been sustained at a reasonable rate of increase despite the high rate of inflation in the housing sector, which appeared to put investment beyond the reach of most low-income households.

Estimates from National Accounts and House Construction Data

As against the evidence of actual house construction, the income data available in the consumer finance surveys of the Central Bank and the socio-economic surveys of the Department of Census and Statistics, present a very bleak prospect in regard to the capacity of individual households to finance housing investment or bear housing expenditures related to rents.

In the Socio-Economic Survey of the Central Bank, which gathered income data for the year 1978-1979, the median household falls into the sixth decile with an average monthly household income of Rs. 711. In the 1980 Socio-Economic Survey conducted by the Department of Census and Statistics, the median household income is approximately Rs. 608 p.m.

TABLE 1
HOUSING INVESTMENT 1979-1982 (IN CURRENT PRICES)
Rs. Million

	1979	1980	1981	1982
1. Total investment in housing construction	2,151	3,807	5,047	6,137
2. Public Sector investment	618.8	1,981.5	812.2	922.1
3. Banking Sector	153.0	308.6	252.5	338.0
4. Household resources	1,979.0	1,516.9	3,982.3	4,876.9
5. Gross domestic fixed capital formation	14,057.7	22,243	23,955	27,925.7
6. Gross domestic product	54,920.0	58,337.7	84,526	97,527
7. 1 as proportion of 5	15.3%	17.1%	21.0%	21.8%
8. 1 as proportion of G.D.P.	3.9%	5.5%	5.9%	6.2%
9. 4 as proportion of 1	68.7%	39.8%	78.8%	79.4%

Source : Department of Census and Statistics, National Accounts of Sri Lanka 1975-1982 Tables 9 and 14 : Estimates of 2 and 3 obtained from Department of Census and Statistics.

Note : Estimate of G.D.P. and Gross Domestic Fixed Capital Formation in Construction differ from those of the Central Bank.

The data presented in Table 2 sets out the problems which appear to apply to the large majority of households in the middle and low-income categories. If, for example, we assume that there is a loan not exceeding Rs. 50,000 which is obtained to finance an urban housing unit in the income category close to the median, the loan repayment and the interest payment would amount to approximately Rs. 708 per month during the first year, which is almost the total monthly income of such a household. According to the data available, the savings of these households would be marginal. Loan

financing for house construction will be beyond their repayment capacity. These estimates would lead us to the conclusion that most households would not be in a position to finance the construction of housing units of reasonable quality, whether in the permanent or semi-permanent category.

There are, however, certain major shortcomings in the data on housing expenditure as revealed in the Consumer Finance Survey or the Socio-Economic Survey. First, the conclusions emerging from the data completely contradict the facts pertaining to the housing situation and the volume of house construction as revealed in the census. In the data relating to the additions to housing stock, it is clear that housing investments have taken place in all income groups and all housing categories. The bulk of the housing consists of small housing units in the single-room and two-room category, evidently being constructed and financed by the lower income groups. Second, the data on housing as recorded in the surveys are derived from the imputed rental value of housing units occupied by owners. These are obviously far below the market values. This would mean that the housing capital in the hands of house owners is seriously undervalued in the data given in the surveys. What households could realise both by encashing these assets or by renting rooms or portions of their houses would be far more than the value attributed to them in the surveys. We need to take account of this situation when estimating the resources that are available within the housing sector as a whole.

TABLE 2

AFFORDABLE LOANS ACCORDING TO INCOME LEVEL

<i>Monthly income</i>	<i>Proportion of income payable as instalments</i>	<i>Monthly payment</i>	<i>Capital loan available</i>	<i>Interest rate</i>	<i>Period of repayment</i>
1. 500—1000 ..	12%	60—120	8,500—17,000	10%	30 years
2. 1000—1500 ..	15%	150—225	15,250—23,000	15%	25 years
3. 1500—2000 ..	20%	300—400	27,000—36,000	18%	25 years
4. 2000—2500 ..	25%	500—625	45,000—56,000	18%	25 years
5. 2500—3000 ..	25%	625—750	56,000—67,500	18%	25 years

Assumptions : Monthly payment is based on equated instalment.

The other fact which needs to be borne in mind is that a good part of the resources which go into housing, particularly in the rural sector, would be non-monetised. This would include materials

which are obtained from the locality, family labour and labour which is provided by the community or by the neighbours. Therefore, the constraints imposed from the scarcity of financial resources should not be over-stated or exaggerated. When the resource situation is evaluated in terms of the actual construction as revealed by the data on house construction given in the census or the estimates derived from the data on gross domestic capital formation (GDCF), the problems of financing may well be within manageable limits, provided of course the best use is made of available resources. It is worth mentioning here that it would be useful for the government to obtain a much more reliable estimate than is available at present in regard to the total flow of resources into the housing sector. A detailed study of the resource flows into housing would provide a very valuable information base for the effective formulation of policies regarding the financing of the housing sector.

Future needs and potential resources for housing

The prospects for housing investment and the flow of resources for such investment could be assessed by projecting the current trends and by comparing this with the resources needed to meet future housing needs. The forecast of the government programmes of investment indicates that GDP is expected to grow around 5 % a year in real terms. During 1975-1982 housing investment appears to have grown at an annual average rate of approximately 12.0 %. During the same period investment in housing as a proportion of GDP had risen considerably to a level between 5 % and 6 % (in current prices). It is unlikely that housing investment will maintain the same rate of increase in the future as it has already reached quite high levels measured in terms of its proportion of GDP. What is likely and more feasible is a level of housing investment which retains its present proportion in relation to GDP. If this happens, housing investment will grow at the rate of GDP growth. With the increases in per capita incomes and the changes in the structure of the economy, we could at most expect a marginal acceleration in the rate of growth of housing investment and correspondingly a slight rise in the share of GDP allocated to housing.

The potential based on 1980 capacity

Within this broad framework we could proceed to examine the requirements of financial resources for the housing sector. We can take the housing performance for the year 1980 as reflected in the census data as the base from which we can assess the capacity of the economy as a whole to mobilise resources to satisfy the housing needs in the future. During 1980, a total of 148,000 housing units were constructed. Of this, approximately 36,000 were permanent units, 83,000 were semi-permanent and 29,000 were improvised structures.

The total value of house construction in 1980 has included several components of housing demand. Part of these houses would have met the demand for replacement. Another part would have met the demand for separate accommodation as required by households at present sharing a single housing unit, and yet another major part could have satisfied the housing demand of new households. In addition, the investment in housing would have included renovations, extensions and upgrading of existing housing units, which would have been equivalent of both housing units needed as replacements as well as additional accommodation for satisfying new demand. This investment in upgrading and improvement would not be reflected in the totals of the new housing units constructed for the year.

If housing investment retains its current share of GDP and GDP itself grows at 5 % per year, then house construction during 1982-86, measured in terms of 1980 housing units, can produce the equivalent of 902,000 units with the same structural mix as in the 1980 housing stock and of the same average quality. (See Table 3). In addition, the investment now taking place in upgrading and structural alterations would grow at the same rate. An analysis of these figures enables us to ascertain to what extent further qualitative and structural changes in the housing stock are possible within this flow of resources into housing. In the projections given in Chapter 3, the new housing stock required during the period 1982-86 according to the low estimate will be 774,000 units and according to the medium estimate 834,000 units. Therefore, the "surplus" of new housing units, on the basis of 1980 equivalents and with housing

investment growing annually at 5 %, would be 128,000 units according to the low projection and 68,000 on the medium. This means that approximately an additional 14 % or 7.5 % of the resources shown in the projections as going into new construction (based on either the low or medium projection) could go into structural upgrading and quality improvements of the housing stock.

These estimates broadly indicate the resource flows that might be possible and feasible and the targets that could be set within these financial parameters for satisfying future housing needs.

If housing investments grow at 5 % a year on the 1980 base, the future scenario for housing appears to approximate to a situation in which the needs for new house construction could be met and considerable improvements in quality achieved. To the extent that the annual investment for housing increases beyond 5 % there would be larger "surpluses" to increase the proportion of the permanent stock and upgrade the existing stock at a faster pace, both in regard to the structural characteristics of the housing unit as well as the amenities. At the same time, it will be possible to provide more living space per person and increase the number of rooms per housing unit. In the period 1987 to 1991, when the population pressure begins to ease, the situation could further improve. This would be a necessary concomitant of the growth of household incomes and increasing urbanisation.

If, however, the annual growth of housing investment falls below 5 % in real terms, the housing situation could deteriorate with overcrowding, little progress in the upgrading of the housing stock and, perhaps, an increasing share of improvised housing.

TABLE 3

HOUSING OUTPUT AT VARYING RATES OF GROWTH 1982-2001
(in 1980 equivalent units—thousands)

<i>Rate of Growth</i>	4%		5%		6%	
<i>Period</i>	<i>Total</i>	<i>Average Annual</i>	<i>Total</i>	<i>Average Annual</i>	<i>Total</i>	<i>Average Annual</i>
1982-86	867.0	173.4	901.6	180.3	937.4	187.5
1987-91	1054.9	211.0	1150.7	230.1	1254.5	250.9
1992-96	1283.4	256.7	1468.6	293.7	1678.8	335.8
1997-2001	1561.5	312.3	1874.4	374.9	2246.6	449.3

It is necessary that these overall targets be kept in sight in the formation of national housing policies and objectives. Housing investment should be sustained and directed in a manner which will ensure that proportions of GDP flowing into housing and the rate of increase of housing investment will in turn promote the transformation of the national housing stock at a reasonable pace. Provided the economy is able to sustain a rate of growth of around 5 % per year in the next two decades, accelerating the rate of investment of housing as indicated would not prove to be a very difficult task. The mobilisation of resources at the desired levels will, however, require the right mix of Public and Private Sector investment in housing, a well organised flow of financing through lending institutions, and a framework of incentives which promote private savings and direct them to housing.

Macro-economic Constraints

A financing strategy for housing which is directed at achieving these objectives has, however, to work within the broad macro-economic constraints. It may not be feasible or desirable to divert a larger proportion of the savings that are currently being mobilised in the economy to accelerate, even marginally, the rate of housing investment. We saw that the present levels themselves are quite high. A diversion of resources from the available pool of savings to finance a higher level of housing investment, which at the same time would absorb a larger proportion of GDP may have adverse consequences for the development effort in other sectors. Therefore, while seeking to maintain the current levels of investment, the financing strategy should primarily aim at generating new savings which are specific to housing and which would have normally not been forthcoming for other investments.

There is an assumption here that the propensity of households to save for housing has certain features which generate savings which may have otherwise not been generated. This is discussed in greater detail in a later section of this chapter when we examine the complex processes of savings and borrowing which go into individual housing investment. At the same time, owing to budgetary

constraints and a more selective allocation of resources for development, the Public Sector share of housing investment has declined from the peak levels of 1978-1980. It is probably this Public Sector investment which made it possible to sustain the growth of housing sector investment during those years. This means that other sources of financing would have to increase proportionately if a steady rate of growth of housing investment is to be maintained in the future.

Main Sources of Funds for Housing

Role of the State in Housing Investment

The state has played a significant role in the financing of housing investment in both the urban as well as the rural sectors. We saw that the allocations from the government budget to housing programmes increased substantially during 1977-82. During 1970-77, the budgetary allocations for housing were maintained at a relatively constant level. In the Five-Year Plan for the period 1972-76, the total investment in housing, both in the public and private sectors, was estimated at an annual figure of approximately Rs. 800 million at 1972 prices. This amounted to about 5 % of GDP. The government expenditure on housing consisted of an annual allocation to the National Housing Fund and other investments on rural housing and official quarters, which together amounted to about Rs. 50 million per year. During this period the contribution of the public sector to both construction and the financing of housing was relatively small.

State investment in the period which followed—1978 to 1982—rose to unprecedented levels. Approximately Rs. 4 billion was invested on a programme under which 38,394 units were completed and 20,147 were under construction by the end of 1982. Another Rs. 387.5 million was disbursed in the form of loans for housing which included improvements and renovation. This total output of housing would be equivalent to about 50,000 housing units. This investment was primarily made on the construction of permanent housing units. If we estimate that about 170,000 permanent units were constructed during this period, using the census data for 1978-1980, we find that the state investment amounted to about 29 % of all permanent house construction during this period. As

a proportion of both permanent and semi-permanent house construction which would be in the region of 550,000, the state construction is likely to have contributed about 9 %.

The public sector housing programme, however, should not be assessed exclusively in terms of these proportions. First, it was a programme which operated in the category of permanent housing where the cost of house construction was much higher than the national average. Second, it was able to launch a nationwide programme which may not have had the same effect if it had not been organised on the same scale. These aspects of the housing programme have been examined in the chapter on Government Housing Policies and State Investment in Housing. In our evaluation of the state's role in housing investment, we need to examine how state resources could be best utilised to promote housing development so that it reaches all sectors of the population and caters to the different needs of the different income groups.

The public sector housing programme in the period 1978-82 was on the whole a high-cost one. If we compare the total state outlay during this period with the total output, it would appear that the average cost of a housing unit was about Rs. 90,000. The unit cost of the urban housing schemes was much higher. Approximately 60 % of the government outlay was absorbed in seven government housing schemes which were undertaken by foreign contractors and which catered to the upper-middle and middle income classes.

A large public sector outlay on this class of housing would have enabled higher income groups to refrain from undertaking housing investment of their own and to take advantage of the public sector programme. One could, therefore, inquire whether some part of the state investment did not replace the private sector investment, which would have taken place in the normal course. It has to be noted that the output of permanent housing units in the urban sector did not expand very significantly despite the public sector outlays. The output in 1976 had already reached 6,320 units. With public sector investment, it had risen to 7,437 in 1980.

This may not have been entirely undesirable if the state was able to function as a real estate developer and dispose of this high-cost component of housing on terms which ensured a reasonable

rate of return on the investment and to that extent replenish the state housing fund for use on low-cost housing programmes. This, however, did not take place. With the steep escalation of costs, many of the housing units that were constructed were priced outside the reach of the lower middle income groups. In most instances the government was hard put to recover the investments already made. This meant that the government was financing a component of housing for higher income groups at a time when it was facing large budgetary deficits. This component of the housing investment was therefore not the most prudent way of allocating resources in the national economy as well as utilising the resources that were available for housing.

In this context, there has been a major reappraisal and re-orientation of the state's role in housing investment. The total public sector outlay in housing according to the programme of public sector investment for the period 1983-87 would be in the region of Rs. 3.2 billion. This would represent approximately 2.5 % of the total capital investment by the public sector during this period. Scaling down of public sector outlays on housing is in keeping with the changed direction of housing programmes and policies. The state proposes to withdraw from direct construction and finance a much more flexible programme of loans to house builders which would be capable of looking after a wide range of housing investments from upgrading, and provision of amenities, to new construction. The financing strategy responds therefore to the diversified incremental process of housing improvement and construction described in Chapter 2. The emphasis in the state programme will be on low-cost housing. The impact of the programme will be much wider than the direct construction programme during the period 1978-82. In terms of mobilising household resources for housing investment it is likely to be much more effective.

Role of the Formal Lending Institutions

Another source of finance has been a group of financing institutions including commercial banks and certain special savings and lending institutions. The total volume of resources made available through them has been relatively small. The figures given in Table 1

indicate that they have at no time exceeded 7-8 % of the total flow of resources to the housing sector. The lending for housing ranged between 4 %-6 % of the total lending of the commercial banks. Nevertheless, they are an important component of finance for housing investments in the middle and upper middle-income groups of the Urban Sector. Among this group the more important lenders have been the People's Bank among the commercial banks, and the State Mortgage and Development Bank among the long-term lending institutions. While the main banking institutions have operated mainly in the urban sector and catered to those households which are able to provide sound collateral and show evidence of reliable repayment capacity, there has been a small flow of resources which have been channelled to housing through the rural banks to lower income groups in the rural sector.

The two commercial banks which have been providing the bulk of the funds for housing are the Bank of Ceylon and the People's Bank. The Bank of Ceylon stopped granting loans for housing in mid-1981. The People's Bank is at present the only commercial banking institution actively engaged in housing finance. The sections which follow provide a summary account of the operations of the main lending institutions within the housing sector. More detailed information on the activities of these institutions is available in the survey on housing finance made by the USAID Office of Housing Study—Sri Lanka Housing Finance Study, March 1982.

Bank of Ceylon

The Bank of Ceylon used to lend up to a maximum of Rs. 220,000 per loan for a period of 15 years at an interest rate of 21 %. The facility was available only to customers and was limited to 75 % of the completed value of the property. The instalment was limited to approximately 25 to 30 % of the borrower's income. It would be seen from these terms and conditions that the facility was available only to a relatively affluent group. At the time the Bank withdrew this scheme the amount outstanding on housing loans was Rs. 324.6 million; 81.7 % of the amount loaned was for construction of houses and 18.3 % for the purchase of existing houses.

People's Bank

The loans given by the People's Bank are under two programmes. They are granted for the purpose of house construction, purchase of existing houses and for extensions and repairs to houses. One lending programme is the investment savings accounts scheme, under which participants are eligible for a housing loan after they have subscribed to the account for a stipulated period. The maximum loan is Rs. 150,000 and regular contributors over a period of 12 months qualify for loans. The size of the loan is limited to 10 times the contract figure within the maximum of Rs. 150,000. The repayment period varies from 8-15 years depending on the duration of the individual investment savings account. The quantum of the loan cannot exceed 60 % of the forced sale of the land and the house when completed. The rate of interest on those loans is at present (1983) 17 %. This is 1 % less than what the Bank pays on one-year fixed deposits.

The second loan scheme of the People's Bank is intended to finance customers at a higher level of income. Those eligible to borrow are Non-Resident Foreign Currency account holders, Valued Current Account holders, as well as creditworthy current account holders of other banks who can be persuaded to transfer their accounts. Loans under this scheme are available for construction of two units up to a maximum of Rs. 300,000 for each unit. The loan is repayable in ten years and is restricted to 50 % of the forced sale value of the completed house and property. The instalment, inclusive of interest at 19 % a year, cannot exceed 40 % of the income of the borrower. Table 4 provides data of the People's Bank lending for construction, extension and repair of houses. As at the end of 1981 the total housing loans outstanding including those of staff amounted to Rs. 696.4 million. At the end of December 1982, the figure had risen to Rs. 927.2 million. As no housing loans were approved for members of the staff in 1982 and for some time in 1981, it can be assumed that in 1982 housing loans granted to the private sector amounted to Rs. 231 million. The percentage of housing loans to other domestic loans as at the end of December 1982 was 10.8 %.

TABLE 4
LOANS GRANTED FOR HOUSING—PEOPLE'S BANK
(EXCLUDING STAFF LOANS)

Year/Qtr.	Construction of New Houses			Extensions and Repairs			Total (1+2+3)	No. Loans	Amount Granted
	(1) 1-10,000	(2) 10,000-25,000	(3) 25,001 & over	No. Loans	Amount Granted	No. Loans				Amount Granted
1970 ..	184	451,167	3	110,000	212	874,667	1,793	2,089,607	
1971 ..	247	450,981	39	786,866	332	2,182,847	2,826	3,504,645	
1972 ..	243	518,657	16	401,663	284	1,320,320	2,277	3,017,842	
1973 ..	2,744	5,545,485	8	828,380	2,818	6,590,918	4,970	6,655,403	
1974 ..	2,872	6,906,452	11	1,365,350	2,986	8,595,802	4,263	6,263,730	
1975 ..	3,431	7,622,628	7	1,013,346	3,512	8,873,974	5,106	7,822,780	
1976 ..	4,104	10,519,941	32	1,738,250	4,261	13,320,191	5,125	10,352,271	
1977 ..	1,361	3,824,560	80	2,306,200	1,596	9,219,360	6,254	15,243,549	
1978 ..	818	2,873,000	92	3,218,700	1,098	10,216,200	9,911	23,347,900	
1979 ..	1,136	4,089,450	240	4,035,850	1,611	21,423,000	10,662	35,306,300	
1980 ..	934	3,534,477	481	4,075,536	1,711	50,732,772	10,760	56,794,334	
1981 ..	807	3,735,568	476	6,879,535	1,686	44,873,871	11,159	52,645,033	
1982 ..	1,978	6,555,725	716	11,643,320	3,189	70,492,631	17,912	89,997,199	
1983 Jan - March	269	1,271,463	234	2,656,432	665	20,574,578	4,602	26,486,650	

Total Housing Loans Outstanding (including staff)

	<i>Rs.</i>
December 1981 ..	696.4 Million
December 1982 ..	927.2 Million

Source : People's Bank

State Mortgage and Investment Bank

The other major lending institution in the field of housing finance is the State Mortgage and Investment Bank. It is wholly state-owned and is supervised by the Ministry of Finance. It is the only financial institution primarily engaged in housing finance. The total volume of new loans granted by the SMIB has been growing rapidly. In 1981, it was about Rs. 45 million. In 1982 it had risen to Rs. 72.88 million.

Although it is permitted to accept fixed deposits, resources are mobilised only by floating debentures. The issue of debentures and the interest rate payable requires the approval of the Ministry of Finance/Treasury. In 1981, Rs. 60 million worth of debentures were sold through the Central Bank to government financial organisations at the rate of 16%. They had to be purchased by the state financial institutions such as the National Savings Bank as the interest rates are no longer attractive to the public owing to higher rates being available elsewhere. Since January 1983, the SMIB has been authorised by the Ministry of Finance to issue debentures. The interest rates appear to be linked to the average cost of funds and not to marginal costs, which are much higher. The rates also vary according to the amount of loan and the loan itself is related to the size of the housing unit. Lending is designed to encourage construction rather than purchase. Loans are limited to 75% of the value of house property and are given for periods not exceeding 20 years. The quantum of the loan is determined by what can be paid by way of instalments, generally not exceeding about 30% of the gross income.

National Savings Bank

Another source of finance has been the National Savings Bank which has been one of the principal instruments for the mobilisation of private savings. The volume of lending by the NSB has been comparatively small, the total value of outstanding loans being approximately Rs. 102 million at the end of 1982. In the recent past, lending has been in the region of Rs. 25 million per annum. The primary objective of the NSB, however, has been to serve as a source of borrowing for the government to finance its capital development

programmes. The Bank's investments are almost entirely in government securities. In 1980, 93.2 % of the deposits made that year were invested in government securities.

Rural Banks

Rural Banks provide some funding for housing at village level. The Rural Bank can be described as the banking arm of the Multipurpose Cooperative Societies. Some Rural Banks have branches within the operational area of the parent cooperative society. As at the end of March 1983 there were 288 Rural Banks and 527 special branches. At present they are empowered to grant loans for housing up to a maximum of Rs. 10,000 repayable over five years. Although 50 % of their loan portfolio has been lent for housing, these funds probably reach only the more affluent sections of the rural population because of the restricted repayment period. The Rural Banks like other state banks are not authorised to adopt the comparatively expeditious process of realising the value of the mortgaged property of a defaulting borrower by resorting to a procedure known as "parate execution". Instead, they have to await the appointment of an arbitrator whose decision is required before they can resort to the dilatory procedures of the law courts. This has affected their efficiency in the recovery of loans. Of housing loans lent by Rural Banks 14 % to 15 % are in default although they are secured by property mortgages.

Flow of Household Savings into Housing Investment

No firm data are available in regard to the volume of household resources and savings that are directed to housing investment. Nevertheless, the data available on the total volume of house construction and other identifiable sources of housing finance such as the allocations made by the Public Sector and the lending by the financing institutions clearly indicate that the major share of house construction is financed by the resources of the households themselves. As stated earlier, this would appear to contradict some of the conclusions that are derived from the data of the socio-economic surveys and the information that is available on household budgets and capacities for saving. The processes by which households save

for housing investment do not seem to be captured fully in the type of surveys that investigate household budgets. This requires more detailed investigation if we are to understand clearly the various factors that seem to be combined in the process of capital formation in the housing sector.

First, there appears to be a considerable share of non-monetised capital formation particularly in the semi-permanent housing stock both in the Rural and Urban Sectors. This component, however, is not likely to be reflected in the national accounts and the estimates of gross domestic capital formation.

Second, the nature of the accumulation of savings that is undertaken by households for housing investments in the future appears to be of a very diverse and heterogeneous character. A parcel of land may be purchased which appreciates considerably in time and provides the opportunity for subdivision and sale of a portion to finance the house construction. A household may collect building materials over a considerable period of time with the objective of undertaking house construction when the critical capacity for undertaking such construction is reached. Many households are prepared to occupy incomplete houses and undertake the completion over a time as and when savings are available. One major objective of employment abroad appears to be the accumulation of savings for investment on housing.

The three cases described below illustrate the ways in which households mobilise resources to construct their homes.

Case 1

Mr. R., his wife and six-year old daughter moved into their newly constructed home in the suburbs of the city of Colombo in August of 1982. A civil engineer by profession, he designed and supervised the construction of his home which was carried out by a small contractor of his acquaintance. The actual construction worked lasted about one year.

Since their marriage in January 1975, Mr and Mrs R had lived for two years outside Colombo in housing provided by the Mahaweli Development Authority where Mr R was employed, and for

five years with Mrs R's parents. Mrs R was a high school teacher who worked for a private girls' school in Colombo. In 1979, they had purchased 12 perches of land close to Mrs R's parents' home.

Mr R obtained a loan from the State Mortgage and Investment Bank, amounting to Rs. 200,000. The total construction cost of his home was Rs. 350,000. The balance of Rs. 150,000 was obtained through a variety of other sources.

However, as construction progressed and costs of construction escalated, extra funds were needed to complete the house. By this time Mr R had changed jobs once again. In order to finance the completion of his house Mr R used the Employees Provident Fund contributions that he obtained when he switched from one private sector firm to another. He sold the car which was a gift from his father-in-law, obtained money from the sale of land that he had owned, and drew on a considerable amount of savings that had accumulated during the time that they had lived with his wife's parents.

About half of the non-institutional funding that went into this house was generated through their savings. The sale of their car and land realised another Rs. 60,000. The balance which made up the total of Rs. 150,000 was realised through gifts and professional consultancy income of Mr R. The monthly repayments on the housing loan were kept to less than 15 % of the total household income.

Case 2

Mr P had purchased 50 perches of marshy land on the outskirts of Kalutara town (a coastal town situated 25 miles south of Colombo) in 1968. At that time he was employed as a mail sorter in the Department of Posts and Telecommunications in Colombo and had paid Rs. 10,000 for the land. This money was obtained from the sale of another piece of land that Mr P's wife owned in a village in Kalutara District. Mr P, his wife, three sons and daughter had moved into a wooden two-room house constructed largely through family labour on his new property. Mr P retired from government service in 1976 and obtained his commuted pension. He then sold half of his 50 perches for Rs 10,500. With the money he obtained from these sources he decided to

construct a permanent house. A part of the land had been filled up over a period of about 6 years and the work continues up to now. In 1980 Mr P's eldest son obtained employment as a heavy vehicle operator at the Victoria Project of the Mahaweli Development Programme. He was able to give Mr and Mrs P about Rs. 2000 a month.

By the middle of 1980, this family was able to start the construction of their new home. Although Mr P had designed a 1,500 square foot, four-room house, the actual construction had to proceed on an incremental basis. By the end of 1983 they had completed what would eventually be the kitchen and the sitting room at a cost of about Rs. 60,000. The floor area of the completed section was about 400 square feet. Part of their old wooden walled home was now used as the kitchen as well as a bedroom for two of the sons. In the newly constructed section, which had brick walls, asbestos roof and cement floor, what was eventually to be the kitchen was used as a bedroom by Mr and Mrs P and their daughter. In April 1983 Mr P's eldest son lost his job after a work-related accident. This resulted in changing the schedule for completing their home. Since Mr P was now retired and had no regular source of income it was not possible for him to obtain a loan to complete his house.

Case 3

Mr K is employed as a chauffeur in a private organisation in Colombo. His home is in a village in the hill country, about 15 miles from the town of Kandy, where he lives with his wife and daughter. After their marriage they lived with his parents. In 1983, Mr K decided to build his own home on the land belonging to his father. It was to have one structure made of brick walls, cement floor and asbestos sheet roofing containing three rooms, and another structure for the kitchen. After completing the foundation for the main structure Mr K completed the structure that would eventually be used as the kitchen. This was made with wattle and daub walls and a roof with metal sheets and palm thatch. He and his family moved into this completed section by the middle of 1983. By the end of 1983 most of the structural work on the main house

had been completed. The floor area of this structure was about 600 square feet. By that time he had spent Rs. 35,000 on the house. Out of this, about Rs. 20,000 was obtained as loans or advances from various sources. Mr K obtained a salary advance of Rs. 5,000 from his work-place, about Rs. 6,000 from relatives or friends working in West Asia, and the rest from members of his family and relatives.

The construction of this home was undertaken by a small contractor known to Mr K. The majority of the bricks used for the walls were made on the site with both hired and family labour. The stones used for the foundation were quarried by hired labour on the site. Mr K had collected timber for the roof and the doors and windows and their respective frames were made by a carpenter related to him. The metal sheets, which were used to roof part of the kitchen structure that was now temporarily his home, were purchased from a dismantled garage at the workplace. By the middle of January 1984, Mr K estimated that a further sum of Rs. 5,000 would enable him to complete the floor, the roof and finish the plastering of the walls. He expected to do this with the money saved out of his salary.

In all three cases, income from sources other than employment had played an important part in the construction of houses. Financial help from family and friends, self-help labour and income from the sale of property had also been essential. In all three cases, the household closely supervised the construction. Materials were collected over a period of time; wherever possible, some of the building materials were either fabricated or made on the site.

Remittances as a Source of Financing

The main flow of external resources to the housing sector is from private remittances of Sri Lankans employed abroad. It is evident that during the second half of the seventies significant resources have been directed to housing investment from this source. The volume of remittances from abroad has increased from Rs. 935 million in 1979 to Rs. 6,023 million in 1982. No firm data is as yet available, but various surveys that have collected information on the uses of remittances indicate that migrants have given high priority to the construction and improvement of their homes. The data collected in several surveys indicate that investments on housing made out by remittances range from 15 % to 20 %.³

If for the purpose of defining the potential for housing investment we assume that approximately 20 % of remittances for Sri Lankans earning abroad flow into housing investments, then it would seem that approximately Rs. 2.8 billion would have been available over the period 1979-1984. This would be quite considerable and in the region of approximately 25 % of the total household resources going into housing investment during this period.

Given the present pattern of investment by migrants, there is therefore no need for any special effort to mobilise remittances for investment in housing. One of the questions relating to this component of investment, however, is the possibility of wasteful expenditure on luxury housing units. While there is likely to be some ostentatious spending, the existing legislation which places a limit on the size of an individual housing unit, will to some extent moderate the tendency and act as a deterrent.

Flow of External Aid to the Housing Sector

In addition to remittances, external funding is provided through non-governmental organisations (NGOs) and UNICEF as well as through USAID's bilateral aid programme. There are a number of NGOs, such as Redd Barna (Norwegian Save the Children Fund) and U.S. Save the Children Fund, which along with UNICEF have undertaken grant financing of small demonstration housing projects in poor urban and rural communities. These projects are generally targeted at the lowest income groups of the population. The projects are not replicable without additional grant funding.

External funding for on-going, sustainable (i.e., mainstream) housing programmes for the working poor has been provided by the Housing Guaranty (HG) Loan Programme of the United States Agency for International Development (USAID). In 1981, the Government of Sri Lanka and USAID agreed to a multi-year, multi-phase \$ 100 million HG programme. Under the HG programme, U.S. private sector lenders provide long-term (30-year) financing for low-income housing programmes. The United States Government underwrites these transactions through the provision of a full faith and credit guarantee that will compensate US lenders for any loss they might suffer. Owing to the presence of this guarantee, foreign governments are able to borrow money for housing and urban pro-

grammes at rates slightly higher than those paid by the US Government itself. Historically, these HG interest rates have been lower than prevailing rates for foreign exchange available in Europe expressed in terms of "LIBOR" (London Inter-Bank Offered Rate). In addition, the 30-year HG term is approximately five times longer than a normal commercial borrowing—an important consideration for developing countries such as Sri Lanka facing the prospect of a high annual debt repayment over the next ten years.

The HG loan proceeds are available to households of below median income (below the 50th per cent) in amounts which they must be able to afford to pay back. The \$21 million HG Phase I was in effect from 1981-1983. In Phase I it was determined that households earning an average monthly income of Rs. 1,125 in urban areas and Rs. 690 in rural areas, constituted those at the median income. AID HG financing covered the entire range of eligible shelter and infrastructure programmes under the NHDA's "Hundred Thousand Houses Programme" (HTHP) and urban programmes of UDA's Slum and Shanty Unit on a country-wide basis. It also included the Fishermen's Housing (FH) programme.

Phase I of the Programme, financed in whole or in part nearly 30,000 housing units.

TABLE 5
HOUSING GUARANTEE PROGRAMME, 1981-1983

<i>Sub-Programme</i>	<i>No. of Units</i>	<i>Cost per Unit 1981</i> \$	<i>Cost per Unit 1983</i> \$	<i>H. G. Eligible Cost (Million)</i> \$
Aided Self-Help	8,590	800	1,212	7.0
Model Villages	7,086	1,212	1,697	5.5
Electoral Housing	3,880	1,454	1,697	5.5
Fishermen's Housing	568			1.0
Rural Housing—Total	20,124			19.0
Urban Slum and Services Upgrading	9,664			2.0
Total	29,788			21.0

Phase II of the HG Programme, which amounts to \$14 million, began on January 1, 1984, and has run simultaneously with the NHDA's Million Houses Programme (MHP), contributing to its rural and urban sub-programmes. In addition, the HG programme was broadened to include eligible expenditure made by Sri Lanka's housing finance institutions, the State Mortgage and Investment

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Bank and the Housing Development Finance Corporation. Since 1981, USAID has provided approximately \$150,000 worth of technical assistance and training annually to Sri Lanka's shelter sector to support the HG programme. In future years, it is hoped that "privat." sector institutions will play a larger role and expand the programme to the Mahaweli areas.

The H.G. loan has been beneficial on two counts. It has provided support both to the balance of payments as well as the Government Budget. As the foreign funds are not directly used for housing, they become available as much-needed foreign exchange for managing the country's external account. The programme funded by the H.G. loan is not in addition to the housing programme and investments already approved by government. The loan refinances the existing annual budgetary appropriation for the housing programme. It becomes a non-inflationary source for financing the budget deficit.

External borrowing for housing investment, however, raises a number of important issues. First, housing investment should ideally come from local savings. Recourse to foreign funds in the case of housing in Sri Lanka does not appear to be prudent, since the ratio of housing investment to GDP is comparatively high. Any foreign borrowing made for housing should be such that it does not operate in a manner which finances housing investments which are not of high priority and which pushes housing investment in the medium and long-term beyond what is sustainable from local savings. Second, much would depend on the concessional element in the external borrowings obtained for housing. If the concessional element is high, then regardless of the local use of the funds, it would have a beneficial impact on the balance of payments as in the case of commodity aid, and provided the macro-economic management is satisfactory, it will release resources for investment and growth in the economy as a whole. The borrowings under the H.G. Programme need to be examined in terms of these criteria. In a situation where concessional lending will decline and Sri Lanka may have to rely on moderate levels of commercial borrowing, the H.G. Programme could be appropriately included in the effort to mobilise external resources.

Mobilising Resources and Savings for Housing

The Catalytic Role of State Financing

We have seen that there are three main sources of financing for housing. These are the State, the formal lending institutions and the households themselves. The resources that are made available to housing through them would depend on the way in which resources are mobilised by each of them, the total resources that are available after such mobilisation, and the way in which these resources are allocated to housing. In the recent past the State has provided approximately 25 % of the total resources for housing (See Table 1), and for this purpose allocated as much as 12 % of the total capital budget of the public sector. While the financing effort accomplished certain well-defined objectives of giving a lead role to house construction and providing a nationwide incentive to housing investment, it had unfavourable consequences in regard to budgetary management itself. All these aspects have already been commented upon.

State financing of housing investment over the next five years would be at a much lower level and would represent a smaller proportion of the total investment. Public sector investment in housing at 1983 prices would be about Rs. 700 million a year, and might be augmented by a further small amount by the reinvestment of repayments on loans. This investment, however, would constitute about 11 % of the total resources that should flow into housing if the housing investment should continue at the levels and rates of growth which were indicated in the estimates given in the preceding section.

The new housing policies reflected in the Million Houses Programme, however, have moved in the right direction and given to state financing the catalytic and promotional role that it could best play in order to obtain the maximum returns from its investment. Housing finance from the state and the formal lending institutions have to be conceived primarily in terms of a financial effort which could call forth resources and savings from the households and the house builders themselves. In the case of the State, such financing strategies would have to be aimed at implementing a flexible package of financing which responds to a wide range of

both the capacities as well as the needs of prospective housing investors. It has to take account of the process of housing investment and capital formation that has been described in the previous section. This means that in many instances the emphasis has to shift away from completed housing units as the objective of financing, to housing of a more incremental type better adapted to needs and capacities. This would include core housing, expansion of housing, upgrading, provision of civic amenities and so on. The present programme satisfies many of these criteria.

In financing housing investment, the state could also select certain key investments which would have a far-reaching, positive impact on housing development. For example, mechanisms such as a Land Bank, reclamation and development of land to stabilise the flow of land into the housing market, development of housing sites with the necessary infrastructure to attract prospective house builders, greater collaboration with property developers and house developers in the private sector in the field of middle class and low-cost urban housing are some of the areas in which state investment can have substantial results.

Another important aspect of the entire financing system is the efficiency with which lending is supervised and recovery is ensured. This will determine the replenishment of housing funds and the levels at which they could be recycled for new lending. In this connection the performance in the state sector has been unsatisfactory. The level of default in the direct loans given by the National Housing Department and the National Housing Fund has been quite high. Therefore, it would be necessary to examine how public sector investments in housing could be so organised that it could be channelled to the beneficiaries through the banking system.

Improving the Policy Framework of Institutional Lending

The formal lending institutions cater to a specific clientele. Given the present financing policies they will not reach out to groups beyond the income groups from which the present clientele is drawn. As the main source of lending for house-building by the

urban middle classes, they are a vital though small component of housing finance. The commercial banks as well as the other savings and lending institutions are the main mobilisers of domestic savings. In April 1983, the commercial banks held approximately Rs 22 billion in the form of time and savings deposits. The National Savings Bank held Rs 8.36 billion in April 1983.

In general, it could be said that it is unlikely that the formal lending institutions should be able to increase their resource allocation to housing to any significant degree from the present levels, considering the fact that the total volume of resources allocated to housing as a proportion of national savings as well as GDP is relatively high in a country where capital is scarce and development needs of sectors other than housing are quite pressing.

Nevertheless, there are various measures that could be taken by these lending institutions both in order to make the lending programme more productive in terms of housing output as well as to generate new savings. It would be useful for the state in collaboration with lending institutions to undertake a survey of the lending that has already been done by these institutions for the purpose of investment in housing with a view to examining the nature of the clientele, such as the income groups to which they belong, the extent to which the borrowing has been supplemented by the resources of the borrowers, the specific uses to which the loans have been put such as construction of new units, expansion of existing ones, upgrading, renovation, replacement and so on. Such an investigation would help the lending institutions to evaluate the current lending policies in regard to the class of beneficiaries, terms and conditions of lending and the specific type of housing investment undertaken with the resources made available.

While several initiatives have already been taken to improve the efficiency of the use of these resources as well as the spread of the benefits there are possibilities for further refinements and improvements. The interest rate policy may have to be examined in some depth. It may be possible for lending institutions to improve on the existing *variety of financing packages* for different types of

housing investment with different terms of repayment both in regard to duration and interest rates. Such packages would have to be tailored both to the needs as well as the repayment capacity of the clientele. By this means it might be possible to extend the reach of the institutions to beneficiaries in the lower middle income categories who now find it difficult to take advantage of the lending facilities of these institutions. A lending policy of this type would require more detailed evaluation of the needs and capacities of individual borrowers. This should also enable the lending institutions to manage the housing component in their total portfolio in such a way that there is a reasonable return flow of funds which takes advantage of the different capacities of different income groups to service their loans. Most lending institutions already process loans with great care in order to tailor them to the needs and repayment possibilities. This could be further improved and strengthened.

More use could be made of the device of *staggering rates of interest* related to such factors as the quantum of the loan, the size of the house and the period of repayment. Where beneficiaries become capable of completing repayment of their loans earlier than the stipulated period, incentives might be provided such as rebates of interest payments. On the other hand, if the burden of repayment is unduly heavy in the earlier period, and the earning capacity of the borrower is certain to increase with time, it should be possible to explore such devices as variable rates and interest and amortisation, "balloon" payments etc.

Another area in which the lending policies could be strengthened is the *investment on extensions and improvements* to existing houses which are not specifically for addition of new units. There are obviously problems pertaining to such a policy as it may not be possible to determine with any degree of certainty whether such funds are used for extensions and additions which provide more living accommodation and in that sense satisfy some part of the housing demand or whether they are employed primarily to improve the quality of housing for households which already enjoy a fairly high level of well-being. If these problems could be looked after, the provision of funds for additions and extensions could have a beneficial impact on the housing situation as a whole.

Increasing household savings specific to housing

The points that have been made regarding the mobilisation of household savings indicate that the savings behaviour of individuals and households in regard to housing has certain special characteristics. There appears to be a propensity for households to cut down on consumption and accumulate capital in the form of money and materials for the specific purpose of owning a house which it would not have otherwise done. It is this propensity that has to be fully exploited. For the most part, the process of savings that has been described takes place incrementally in diverse ways and is not easily subject to intervention and promotion. It might be worth examining whether feasible schemes of hire purchase and payments by instalments could be devised for certain types of building materials and implemented initially by an organisation such as the Building Materials Corporation.

Contractual Savings Scheme

A financing instrument which may have very significant potential is the *contractual savings scheme*. It has considerable scope for households in all income groups both in the Urban and Rural Sectors. Such schemes are also likely to generate new savings which are specific to the housing investment and which do not divert the savings already available from other sectors which have higher priority than housing. The scheme entails a contract between an individual customer and a financial institution whereby the former agrees to deposit a specified sum over an agreed period of time in exchange for the promise of a housing loan from the institution upon satisfaction of the contract. The loan amount will be a multiple of the contracted deposit figure. There is a penalty against the early termination of the contract by way of a loss of part of the interest earned on the savings deposit. An example of the popularity of these object-specific savings schemes was evident in the scheme initiated by the Bank of Ceylon for savings in relation to the future educational needs of children. It would be possible to adapt such a scheme for housing and provide a pool of resources which could also then be deployed on lending for current housing needs.

The *Investment Savings Account* scheme that the People's Bank operates is one such arrangement. But the People's Bank's scheme may have lost some of its attraction to the lower middle class house builder who made use of it most, owing to the inadequacy of the loan resulting from rapidly inflating building costs. However, the scheme still holds its attraction for the rural builder whose needs are smaller and who builds at lower cost. In 1982, 1978 loans were given by the People's Bank in the 'less than ten thousand rupee' category. Most of these are likely to have been ISA-related housing loans.

Although the People's Bank has operated this scheme with considerable success it has not been extended to the Rural Bank so far. With the wide network of such banks spread across the rural areas of the country what has so far been a lower middle-class wage-earner-oriented scheme can be made available to the poorer sections of the community to meet their smaller needs. From the Bank's point of view it will help to mobilise additional savings on a relatively certain basis. It will promote thrift and help the Bank to identify the reliable creditworthy borrowers among the rural population.

The availability of funds from the People's Bank to the rural banks will give them the strength to enter into contracts with their customers without fear of not being able to meet the new demand generated for their housing loans.

Further, if *refinance* is provided by the State Mortgage and Investment Bank or by the Central Bank to encourage Rural Banks to lend for housing, the re-lending authorities should agree to permit the lending to take place against village title. If they insist on clear title for mortgages, the whole purpose of the refinance arrangement may be defeated as rural borrowers and rural property would generally not qualify for borrowing on such terms.

The scheme proposed by the State Mortgage and Investment Bank could be extended to the Rural Banks for small housing loans.

Initially, it should be tried out as a pilot project in selected Rural Banks under the supervision of the People's Bank branch manager and his field staff until the Rural Bank can take over. Simpler mortgage and registration procedures can also be devised. At the beginning it will be useful if a continuing committee of officers from the SMIB, the People's Bank, the NHDA and the Department of Cooperative Development sit regularly to streamline procedure and find solutions to problems that may arise.

It may also be possible to extend such *contractual savings schemes to groups of rural house builders* from similar social and income levels who will join housing societies on the lines laid down by the National Housing Act. The society could contract with the bank and obtain loan funds for disbursement among the membership. It can also take responsibility for collection and repayment of the loan instalments as they take place. It should be possible to use the rural banks as the network for operating such a scheme in the rural sector.

The Housing Development Finance Corporation, which is being set up under the Ministry of Local Government, Housing and Construction, has the potential for growing into a national instrument which could augment the flow of private savings into housing investments. The HDFC has been conceived as a building society with joint participation of the public and private sectors. It will offer loans to members for the purchase, building and extension of houses. The membership in the society is obtained through the purchase of shares with a minimum share of Rs. 500. The shareholding could be cumulatively increased through subsequent investments according to the capacity and convenience of the shareholder. The shareholder would be entitled to a loan amounting to five times the savings. The savings will earn an interest of 9% a year, while the rate for repayment of the loan is lower than the rate currently charged by the other lending institutions. Shareholders who have been members for 3 years or more are entitled to an interest rebate of $1\frac{1}{2}$ %. Other benefits include free professional assistance on matters connected with house construction .

Other sources of financing

Two other institutions which mobilise resources are the Insurance Corporation and the Employees' Provident Fund together with the Employees' Trust Fund. The annual aggregate flow of savings to these institutions is at present about Rs. 10 billion. The EPF's annual investment including contributions, interest earnings and proceeds for maturing investments total approximately Rs. 1.0 billion. At present the savings that are mobilised through the Employees' Provident Fund and the Insurance Corporation are sources of non-bank borrowing for the Government Budget and are almost entirely absorbed for that purpose.

The potential of the Employees' Provident Fund and the Employees' Trust Fund for financing housing investment needs to be examined more thoroughly. The Fund has at present approximately 1.2 million active current accounts for as many wage and salaried employees. Its reach is therefore quite large and with the contributions as collateral, it could engage in a small proportion of lending for housing investments on a sound, financially viable basis. The modes of financing adopted by Singapore in the "Home Ownership for the People" and the "Central Provident Fund approved housing schemes" is an example which might be capable of appropriate adaptation for both loans for individual house construction as well as financing of Public Sector housing.

Reorganising the institutional framework

It would be seen that at present there is a wide variety of institutions engaged in lending funds for housing investments. There is, therefore, the need to rationalise the existing system of housing finance. There have been several proposals for reorganisation of the prevailing institutional framework. Several of these proposals contain the concept of an apex institution which would help both to increase the flow of resources for housing investment as well as rationalise the lending policies of various institutions which at present are engaged in housing finance.

One such proposal envisaged the establishment of a Housing Development Bank which can function more or less as a specialised

institution for mobilising and providing resources for lending to house builders. The Bank of Ceylon had contemplated the establishment of a housing bank with equity participation from the International Finance Corporation. According to a study done by the National Savings and Loan League, sponsored by USAID, the Bank of Ceylon had considered an annual contribution of Rs. 100 million. However, the proposal has not been pursued, probably owing to the government's reluctance to commit annually such a large sum by way of contribution. If the contributory base is widened to distribute the commitment among a number of financial institutions, the idea of such a Housing Development Fund might prove practicable.

Another possibility is a contributory Housing Development Fund to which the state-sponsored commercial banks, the National Housing Fund, and perhaps, the Employees' Trust Fund, could subscribe a specific sum over a reasonable period of time. If, for example, Rs. 100 million can be raised annually between the various institutions every year so that at the end of ten years there is a capital base of Rs. 600 million, the repayments on interest and capital will enable such a fund to expand its lending capacity and be self-supporting.

An alternative to new financial institutions described above, has been a proposal for the conversion of the State Mortgage and Investment Bank into a lending institution which would assume special responsibilities for housing finance. This proposal has raised a wide range of questions, such as whether the SMIB confines its lending activities to housing finance and becomes a specialised housing bank; whether it should engage in direct mortgage lending and expand its activities through a branch network or should function as a secondary lender, refinancing mortgage loans made by other banks and lending institutions.

The savings and loan study suggested that serious consideration be given to the feasibility of the SMIB divesting itself of direct lending and confining its activities to raising finance for housing and acting in a coordinating and regulatory role. Towards achieving such a development, the SMIB has recently invited the state banks to participate as direct lenders in a refinancing arrangement with it for the construction or purchase of new houses. The proposals

stipulate five categories of loans based on the quantum of the loans and a graded rate of interest directed at discouraging the larger loans. A new feature is a category of loan to property developers to finance the building of small houses. The People's Bank has raised initial objections to bearing the entire credit risk and also to the requirement of a guarantee from another commercial bank. The reporting procedure may also not be acceptable to the state banks as it seems to place the SMIB on a par with the Central Bank, which also sponsors refinance schemes vis-a-vis the state banks. The view has been expressed that if the funds are provided direct to the state banks they would prefer to lend them without the intermediary role of the SMIB. The decision whether the SMIB could be adapted for such a role or whether a separate institution should be established for the purpose needs to be taken early. Given the fact that the SMIB is primarily engaged in lending for housing, its conversion for such a role would be the most economical and rational choice. On the other hand, it may need considerable reorientation as its long-standing practices and policy orientations are not entirely adequate for an institution which will have policy-oriented and promotional responsibilities of a comprehensive nature.

However, the role of an apex institution of the type that has been described should not be overestimated. In attempts to rationalise the structure of housing finance, it may not be prudent to attempt establishing a framework which would be too rigid and hierarchical in its operation. The diversity of lending schemes and the wide range of lending institutions could be a positive feature providing access to different types of house builders and catering to the different needs. For instance, it has been suggested that the flows of housing finance could be related to the different income groups. The NHDA with its own institutions together with the new Housing Finance Corporation, could finance the low and lower-middle income categories. The SMIB could finance the middle income category and private developers, while some of the other commercial banks could finance the upper income category. What is required, however, is to improve the structure in a manner which helps to generate new savings for housing and provide access to as wide a clientele as possible for both institutionalised savings as well as institutionalised borrowing for housing investments. In such a structure, a specialised Housing Development Bank may have a

supportive role to play in both mobilising resources and ensuring that a wide network of lending institutions reaching right down to the village level function actively in promoting housing investments based on national priorities.

Conclusions

It would be seen from the foregoing analysis that the major share of the resources which flow into housing investment come out of households and their savings. This is confirmed by the conclusions derived from the macro economic data. The information available in the housing census clearly indicates that a large volume of resources have flowed into housing from households at all income levels, both for construction of new units of varying size and structural quality as well as for upgrading and additions to existing units. The bulk of this output comprises small units for low and middle income groups. This data, however conflicts with some of the data which has been obtained in several socio-economic surveys. The analysis points to possible shortcomings in these surveys, particularly as they were primarily intended for different purposes and not directed at obtaining housing information.

The flow of resources to housing will have to be contained within feasible macro-economic parameters. The projections made in the chapter suggest that if new house construction grows at approximately 5 % on the construction output of the base year, 1950, then the performance in the housing sector would be able to cope with the increasing demand, both for new housing units as well as the improvements in the quality of the existing housing stock through upgrading and structural improvements. These conclusions are based on the assumption that housing investment will absorb up to 5 % of GDP and will grow annually at the rate of 5 %, which would be the rate of growth of GDP. These appear to be feasible assumptions and suggest that financing the housing programme could be kept within manageable limits, provided the housing strategy is so designed as to make the most cost-effective use of available resources.

The chapter has examined the various flows of resources to the housing sector which include state resources, formal lending by the

banking system and other lending institutions, household savings, private remittances from abroad and external aid. The changes in the government housing policy have assigned to the state a catalytic role in housing finance. The mode of housing finance now adopted in the Million Houses Programme could provide the catalytic input and stimulate household savings. But to mobilise household savings more than a critical input of finance is needed. Other conditions such as supply of materials, prices, ready access to technical and managerial know-how for householders, the availability of construction manpower, must all facilitate housing investment. Finance must form part of a package that must combine these other elements. The success of the Million Houses Programme will depend a great deal on its capacity to offer a package. The state may also have to play a significant role in promoting the efforts of housing developers, particularly for the supply of houses to middle and low-middle income groups.

In the field of institutional lending there are a wide variety of measures which could be adopted to expand the flow of resources and extend the reach of these institutions to the lower income groups as well. This component of institutional lending would in the aggregate remain a fairly small component of the total flow. While this is inevitable, it would still be a vitally important component as it could cater to urban housing in those classes which have felt the shortage of housing quite severely. The chapter has suggested several options which need to be considered. There is scope for greater flexibility in interest rates and lending packages. Contractual savings schemes need to be promoted. The rural banks need to be brought more closely into the network and given a more active role. The information available in the entire field of institutional lending for housing has not been systematically studied and analysed so as to help in the process of policy formulation. A study of this type is recommended.

There are several other possible sources of finance which need to be explored. The funds available from external non-governmental agencies could be augmented by low-cost housing projects for disadvantaged communities. Part of the funds available through sources

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such as the Employees' Provident Fund and the Insurance Corporation might be tapped through innovative schemes such as those implemented in Singapore.

Finally, the institutional framework for house construction could be further reorganised and rationalised. It has to be noted that housing comprises approximately 20% of total capital formation in the economy and justifies a special effort of this nature. An apex institution such as a Housing Development Bank, specialising in housing finance, could play an important role in both mobilising resources and supporting a wide network of lending institutions, reaching right down to the village level. However, in attempts to rationalise the structure of housing finance, a rigid and hierarchical framework should be avoided and room should be left for diversity of lending schemes with flows of housing finance for different income groups in different financing packages. Within such a framework the lending institutions could share the task of financing. For example, NHDA with the new Housing Finance Corporation, could finance the lower and lower-middle income categories, the SMIB the middle income category and private developers, and the other commercial banks, the upper income category.

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CHAPTER 9

THE CONSTRUCTION SECTOR AND HOUSING

Introduction

This chapter examines the main features of the construction sector, its relationship to housing and how it performed during the decade 1971-81. It will analyse briefly how the sector responded to increased demand after the change in the administration in 1977 and attempts to identify those factors which may contribute to enhanced performance.

Aggregate performance of construction and housing

Construction in the national economy

Chapter 1 has provided a survey of the performance of the economy during the period 1971-81. The economy experienced very low rates of growth during the period 1971-77. With the changes in economic policy in 1977 there was a significant acceleration in the rate of growth. The economy achieved an annual average growth of 6.5 % for the period 1977-81—nearly double the average for 1971-77. The relatively slow growth of GDP was accompanied by a correspondingly low level of capital formation. The construction sector whose output mainly goes into capital formation declined in real terms by 13 % between 1971 and 1977. In 1971 the value added in the construction sector was Rs. 708 million at 1970 prices. In 1977 it had fallen to Rs. 619 million (Table 1). The ratio of nominal gross domestic capital formation to nominal gross domestic product had dropped from 15.7 % in 1971 to 12.7 % in 1974; recovered to 16.3 % in 1976 and then declined again to 14.5 % in 1977. In real terms the ratio is expected to have fallen by a larger percentage. The share of construction in GDP (in real terms) fell from 5.3 % in 1971 to 3.8 % in 1977. Although real construction output had fallen during the period 1971-77, the

component of residential construction does not seem to have suffered from a similar decline. It should be noted that the total output of construction which is included in the data for both GDP and GDCF includes residential construction, non-residential building and construction of various assets such as roads, bridges, irrigation works and power plants. If the number of completed permanent homes between 1971 and 1977 is used as an indicator of the trends during the period, the data point to a growth in residential construction. Despite the decline in aggregate savings and investments, the investment in construction of homes has continued to grow at a relatively steady level.

After 1977, the ratio of GDCF to GDP increased rapidly and doubled from the 1977 level of 14.5 % to 29.3 % in 1981. Construction output at 1970 prices rose from Rs. 619 million in 1977 to Rs. 1066 million in 1980 and then levelled off to Rs. 1013 million in 1982. During the three year period 1977-80, the real output in the construction sector had grown by an annual average of approximately 21 %. However, although there had been a massive increase in total construction output, a large part of this increase could be attributed to the construction of major capital assets such as dams and types of capital formation other than buildings. As a result, the share of building and residential construction output in total construction had fallen from 86.9 % in 1971 to approximately 70 % in 1981.¹ The composition of output in the construction sector in the period after 1977 had therefore changed significantly from what it was earlier. As non-residential building grew rapidly during this period, it is reasonable to conclude that the share of residential construction in total construction output also correspondingly declined. These patterns of activity in the construction sector have to be kept in mind when evaluating the rapid growth of inflation in the construction sector as well as the trends in productivity in the different components of the construction sector.

Employment and productivity in construction

During the 1971-81 decade, real construction output grew faster than the construction workforce. According to the census data the construction workforce had grown to 125,000 persons in

1981, (Department of Census and Statistics 1983) a 20 % increase in the 1971 workforce. Using the data for construction output for 1971 and 1981, it is estimated that productivity increased by at least 40 % during this time. This was in nominal terms, in real terms (1970 prices) the increase was 27%.

The proportion of the construction workers engaged in building and residential construction is estimated to have increased from about two-thirds of the total, 68.6 %, to nearly four-fifths, 78.5 %. Since the share of building and residential construction in total real construction output fell, the combined effect was a surprising, nearly 15 %, decline in productivity for this component of construction. These observations about productivity are tentative and perhaps subject to error. There is much scope for further research into the issue of labour productivity and its change in the construction sector.

Inflation and the construction sector

The increase in the general price level during 1971-77 averaged about 12 % a year. This was due primarily to high inflation during 1973-74 and 1977. Although the inflation rate fell to a single digit in 1978, it increased thereafter and averaged nearly 18 % between 1979 and 1981. Inflation in the construction sector was marginally higher than general inflation during the 1971-77 period. After 1977, construction inflation grew rapidly and averaged nearly 40 % (annual percentage increase of the construction deflator).

The price index for all construction followed this general pattern. For the 1971-77 period it increased at an average annual rate of 9.5 %. After 1977 the rate increased to 31.6 %. During the 1971-77 period the price increase in residential construction averaged a lower rate than total construction. This pattern was reversed after 1977 when the housing cost index increased at an average annual rate of 37.4 %. Costs did not rise as fast for construction other than houses and buildings.

Building material cost indices experienced an increase in 1973-74 but stabilised thereafter. This was true not only for cement, which had administered prices and rationing during the 1971-77 period, but also for hand-moulded bricks produced in large part by

small plants. Meanwhile, sawn timber prices rose in 1974 and remained static, and asbestos roofing sheet with a high import content continued to rise in price till 1976.

The situation changed dramatically after 1977. The impact of the investment programmes with the large construction component clearly strained supply. Between 1977 and 1981 the value of building materials imported into the country increased from Rs. 129 million to Rs. 525 million. The proportion of cement and allied products in this volume of imports was only one-fifth, 21.3 % in 1977, but after that it averaged over one half. In 1981 nearly two-thirds of the value of all building material imports was accounted for by cement and allied products. However, the country also exported cement during this time. The value of exports in 1978 was Rs. 405 million—more than three times as large as the total value of imported cement. Exports of cement in value terms declined thereafter, and in 1981 nearly Rs. 232 million worth of cement was exported.²

Meanwhile the cement price index rose by 58 % and 21 % during the years 1979 and 1980 respectively. The exports may very well have been due to previous contractual obligations that could not be ignored even though local demand was increasing and causing prices to rise.

What were the main factors which caused the steep increase in prices for construction materials? Did input prices increase or was it the result of supplies being unable to meet steeply increasing demand? This question cannot be satisfactorily answered without examining what went on in home construction.

The total number of houses constructed in 1976 is estimated to have been over 106,000 (Department of Census and Statistics 1982, p. 25). Between 1971-75 a total of about 295,000 homes were constructed—an annual average of nearly 60,000. Clearly the number constructed in 1971 is expected to have been lower, and in 1975 higher than this average. In 1977 the output of homes declined, then continued to increase steadily. Improvised homes accounted for only 7.8 % of the total number of homes constructed between 1971 and 1977. However, between 1977 and 1980 improvised housing construction increased rapidly, became a larger share of annual output of homes, and accounted for nearly 18 %

of the homes constructed during this period. Meanwhile, permanent home construction also increased. The number of such homes constructed in 1980 was nearly one-quarter of that year's output and more than one-quarter (28.7%) larger than the number of such homes constructed in 1976. The number of improvised homes constructed in 1980 was nearly 30,000 or one-fifth of the total construction of that year, and three times as large as the number constructed in 1976.

What were the causal factors? What were the effects which can be readily identified? As mentioned earlier, the investment programme of the new administration that took office in 1977, had a large construction component which included a housing programme. Between 1978-82 over 35,000 homes were constructed under the "Hundred Thousand Houses" programme. At least one-fifth of all the permanent homes constructed between 1978-82 are expected to have been the direct result of the "One Hundred Thousand Houses" programme. This took place at a time when the demand for labour and materials from non-residential construction was high, and when the migration of construction workers to West Asia was increasing.

Between 1978 (September/October) and the end of 1981, the wages of skilled carpenters and skilled masons increased one and a half times.³ Since the general price level increased by only two-thirds, real wages for both skilled and unskilled workers increased by more than two-thirds. The nominal wages premium of skilled workers remained over one-third (35%) higher than the wages of unskilled workers. It is, therefore, difficult to conceive of a substitution of unskilled for skilled workers on the aggregate because the skilled-to-unskilled wage premium increased from 34.9% only to 35.1% during 1978-81. Construction wages must have increased most probably because supply was increasing more slowly than demand. Out-migration is expected to have played a significant role in reducing the supply growth.

It is unlikely that the government housing programme caused a significant portion of the housing inflation. The concentration of investment and its sudden impact on the economy, and the slow responses in building material supply and labour supply are the

more likely causes. As stated earlier, the share of residential construction in total construction fell by as much as 15 % between 1971 and 1981 ; the greater part of this decline has taken place between 1977 and 1981. Therefore it is very unlikely that inflation in the costs of housing resulted from excessive housing demand. It is the steep growth of non-residential construction and the resulting strains on supply which account for the major portion of the price increase in construction materials ; which in turn affected the residential component. Supply-side problems once again loom large as the obvious cause of the increase in the average price of housing during the 1977-81 period.

Although some broad magnitudes of the possible causes of price escalation in housing and construction were examined, many other factors may have contributed to this situation. Even though the out-migration of construction workers to the Middle East may not have been large compared with the construction workforce, the loss of skilled and experienced workers may have had a disproportionate effect on costs. Training may have speeded up and workers with inadequate experience and skill may have been elevated to the skilled ranks out of necessity. In home building the effects may have been serious. Experience implies organisational abilities and craft skills. In an environment where general inflation of previously unknown levels prevailed, lack of planning for or anticipating cost increases in labour and materials could result in significant increases in the cost of the completed home. Lack of skill could lead to costly errors and wasteful consumption of materials.

Housing demand in the future will continue to be concentrated towards permanent homes. More space, better structures with more convenient amenities will be demanded. Meanwhile, substantial upgrading is expected to continue, with households adding space, changing the configuration, and improving the materials of the structures and services to the home. This new demand will have to be met with enhanced supplies, and in some instances better technology. How the housing sector will deal with this issue depends partly on the actors who perform the building tasks.

Residential Construction Sector

The housing construction industry which can be considered a subset of the building construction industry, essentially comprises a state and public corporation sector, an organised private construction sector, including property developers, a sector consisting of the individual small-scale (baas-type) contractors and an informal sector consisting of heterogeneous elements which include family labour and which is engaged mainly on semi-permanent and improvised type of house construction.

There are several significant features of the residential construction sector which require special attention when examining the demands which have to be met by this segment. The first relates to the composition of the housing stock and future demand. Of the net addition to the stock between 1971 and 1981, approximately 65 % were permanent houses and 31 % were semi-permanent. These trends point to the fact that the demand for housing in the future would be increasingly directed to permanent housing, although semi-permanent housing will continue to occupy a significant place in the total volume of house construction. At the same time, we observe that during 1971-81 the trends were in the direction of larger homes. The proportion of one-roomed units declined and those with two rooms and more increased correspondingly. Future demand for housing is likely to be concentrated on permanent homes with two and three rooms. It is in this category of housing that the problems of design and cost will require special attention.

Second, the residential component of the construction industry relies primarily on a heterogeneous group of small-scale contractors and craftsmen manager (baases), both for the building of houses as well as for the manufacture and supply of a wide range of building materials.

Public sector house construction

Within the state sector, the important organisations that have been engaged in house construction are the Buildings Department and the State Engineering Corporation. Both these organisations are involved in residential as well as non-residential construction. Their work is not specifically restricted to house construction. The

housing programme of the Buildings Department consists mainly of the construction of residential quarters required by public officers in the various public sector organisations and departments such as the Police Department, the Health Department, the Postal Department and the Education Department. The Buildings Department has a network of district offices established throughout the country. Its construction work is undertaken both directly by labour employed by the Department as well as through small-scale contracts awarded to contractors who are registered with the department. Certain other government agencies such as the Department of Irrigation also undertake the construction of residential quarters for their employees. However, the contribution of these departments to housing output and the construction capacity given to housing is relatively small.

The State Engineering Corporation has been responsible for a significant volume of house construction. It has also made an important contribution to the modernisation of the construction industry by introducing and adapting prefabrication technology for high-rise house construction. This technology was used by the State Engineering Corporation for building apartment complexes in State housing schemes in and around Colombo.

The formal segment in private sector construction

The formally constituted private sector organisations are those that are registered as limited liability companies, proprietary firms, or partnerships for the purpose of carrying out construction work. These organisations mainly undertake non-residential construction such as commercial and industrial buildings. They have also been responsible for a sizeable volume of house construction, particularly in the state-sponsored schemes. Annex 1 gives a list of such organisations with the number of housing units constructed by them during the period after 1977. Of the private sector building construction organisations it is estimated that there are around ten construction organisations, each capable of handling construction work between Rs. 50 to 100 million per annum and about another thirty construction organisations with construction capacities in the range of Rs. 20 to 50 million per annum (See Annex 1). Another

category of house builders who are beginning to play a recognisable role are the private sector property developers. Most of the property developers do not have their own construction workforce. They depend mainly on small-scale sub-contractors to carry out the construction work. Their role is that of financing and organising housing construction which brings certain economies of scale to the industry. These construction firms organise most of the work on sub-contracts to small-scale contractors.

The most important segment of the house construction industry is the small-scale one-man contractor, conventionally known as the 'baas'. These individual contractors do not have organisations which are formally or legally constituted as firms or companies. They establish small informal organisations, assemble a small workforce required for their tasks and obtain contracts through informal networks which keep them supplied with a fairly regular flow of work. These small-scale contractors do not undertake more than one or two houses at any given time. They usually have a few skilled workers who are competent in all the aspects of house construction. A larger team or work gang is usually formed around these key skilled workers and employed on the construction of a house. For most of the permanent house construction it is this type of contractor who is needed and employed.

The construction effort that goes into semi-permanent and improvised housing is of a different character. Most of these houses are constructed with family labour as well as assistance from informal groups whose members would give each other mutual help in tasks such as repairs, maintenance, improvement and construction of houses. For such housing, most of the materials required are obtained from the locality and the construction work itself may be extended over a long period according to the availability of labour and materials. A considerable part of the investment is non-monetised.

We do not have detailed and accurate information to ascertain the contribution made to the housing output by each of these segments in the construction industry. Nevertheless, some rough idea could be obtained from the information given in Annex 1. This gives the data on house construction undertaken by the various organisations during the period 1978-80. The largest share, nearly 5000 units, was contributed by foreign contractors. Local firms, large and small, built another 4500 units. Foreign construction organisations were employed on state-sponsored schemes for which international tenders were invited. It was felt that foreign contractors would be needed to supplement local capacities if the targets set for the housing programme were to be achieved. However, it is unlikely that the foreign construction firms would continue to form a part of the house construction industry in the country. The total number of housing units constructed by both foreign and local firms during this period, including an estimated 2000 units completed by the State Engineering Corporation, was 11,733. This performance has to be compared with the total number of permanent housing units constructed during the period 1978-80. This amounted to 94,929 units. It can be seen that the contribution of both the local and foreign firms to the total housing output was only about 12%. The balance 88% would have been constructed by the small-scale individual contractors. On the basis of house construction in 1980 when 35,957 permanent housing units were constructed and on the assumption that not more than three housing units would be completed by one small-scale contractor, the total number of small-scale contractors who are operating in the house construction industry would amount to about 10,000.

Preparing for the future

From this brief survey of the house construction industry in housing, there are a few important conclusions which emerge that deserve to be emphasised. Although the participation of the organised private sector building construction industry has been relatively small, the turn of events in the construction industry after 1981 may provide them with new opportunities in the housing sector. The negative growth rates which prevailed in the construction industry in 1981-82 followed the unprecedented spurt of

growth experienced in the year 1978. During the period of high growth, the organised construction industry had mobilised itself to meet the rising demand and had expanded its capacity, both in terms of capital and labour. The recent downturn in the construction industry has resulted in a fair degree of excess capacity in these organisations. This excess capacity could be harnessed and channelled towards the housing sector, particularly through housing property and development entrepreneurs of the type described earlier.

The more important conclusion concerns the small-scale baas-type contractor who has contributed the preponderant share of permanent housing construction. It is evident that any effort at cost reduction and productivity improvement in the housing sector would have to give a central place to this type of contractor as he is the principal agent in house construction. His knowledge and managerial and technical skills would be a key factor for more productive and efficient use of the resources available for housing.

As the economy develops and grows, housing demand will also follow suit. The type of house demanded is expected to change in the future. Different types of structures, fittings and finishes will be demanded. The work and organisation required to build such houses will be different. The skill composition required may change and the demands placed on the small contractors may be such that their capacities for adaptation may be strained. The recent cost escalation in construction may be an indication of the limits of adaptability of this sector. The types of management, scheduling of work and maintaining standards required for modern construction work is the consequence of training and long years of experience. The organisation and network that was sufficient for a particular level and mix of construction that prevailed may be inadequate for the future. Therefore, there has to be a systematic effort at upgrading and training in this informal segment of the residential construction sector. There is considerable scope for innovative programmes which would appropriately adapt modern management methods and provide the small contractor with a package of skills and know-how for scheduling of work, progress control, management of supplies and simple tools of cost control and budgeting. This could be along the lines of training small business operators with a special component relevant to construction.

Housing Design

It is only a small, affluent segment of the population which will engage the services of practising architects and consultants for the preparation of plans and designs for their houses. As financing is not a serious constraint in the case of this group of house builders, the housing units designed will be normally in the superior or luxury class. They would often include terrazzo flooring, exclusive pantries, additional toilets and imported, expensive fittings. The cost of such housing units at the prevailing rates would be anywhere in the range Rs. 350 to 500 per square foot of floor area.

The designs for the middle income house builders are most often prepared by draftsmen at a fraction of the cost incurred on the services of an architect. These designs would conform to the rules and regulations laid down by the local authorities and the Urban Development Authority. At prevailing rates, the housing units which are normally designed in this manner cost between Rs. 200 to 350 per square foot. In the recent past, property developers who have entered the housing market have been able to offer housing units at very competitive prices. As might be expected, property developers have been very cost conscious to take the maximum advantage of cost-effective design features as well as economies of scale that they enjoy and have been able to provide housing units of 750 to 1000 square feet in the range of Rs. 200,000 to 300,000. The demand for these units have been quite high and the property developers have been able to dispose of them readily.

Most of the smaller homes with one to two rooms, comprising 63 % of the total stock, are constructed without the aid of any detailed plans and bills of quantities. The large majority of these structures are in the rural sector. Semi-permanent houses will normally follow the traditional designs and technology. Various government programmes for subsidised housing in the village expansion schemes as well as in major colonisation schemes have introduced type plans which have led to modifications in the designs and structures of rural housing. Beneficiaries of these schemes have, however, been critical of the type plans as they were not easily adaptable to their particular needs. There is considerable scope for further improvement of designs for low-income housing which can both enhance quality and reduce costs. There has been

little systematic effort at applying architectural skills and design expertise to the low-income house to improve its features relating to light, ventilation and protection from heat; specialised use of space; future extension and expansion from a core unit. A programme for design improvement of this kind should receive high priority.

Construction Manpower

Informal training

Better designs and trained contractors will ultimately have to contend with the workers who will carry out the building tasks. Residential construction requires a mix of skills different from those needed for other construction. Upgrading these skills is necessary to effect change and improvement in residential construction. The majority of construction workers acquire their skills through a process of informal apprenticeship. This process usually begins with individuals being taken on to assist in unskilled tasks and to make themselves familiar with the work in house construction. The majority of construction workers are from the southern part of the country and by systems of apprenticeship entire villages become specialised in construction skills. This method of informal training and acquisition of skills provides a practical apprenticeship and a working knowledge of building.

This method of imparting skills has been traditional or indigenous. A recent study indicates that all masons in the age group 30-50 years train new hands. This accounts for about three-quarters of all masons. Only masons engaged in house-building employ trainee helpers. These masons account for about 40 % of all masons. The length of training is approximately four years. Only one quarter of the trainees end up as skilled masons. (See NIBM study¹. The same process prevails in other types of construction skills, such as carpentry and plumbing.

Institutionalised training

During the past few years institutionalised training of construction workers has grown. The traditional methods of training have

not been able to meet the demand for additional workers created by the growth in the construction industry. At the same time, exodus of skilled workers to West Asia strained supply.

The major contribution towards training is provided by the Construction Industry Training Project (CITP) which covers five major categories of construction work; namely, masonry, carpentry, electrical wiring, plumbing, steel fixing and bar-bending. The course consists of ten weeks' theoretical work and a further ten weeks of on-site practical experience. An advanced skill module of ten weeks' training conducted by the polytechnical, junior technical and affiliate technical institutes of the Ministry of Higher Education is also provided. The trainees are recruited from the industry on the recommendation of their employers. Self-employed craftsmen are also eligible. The CITP proposes to have a National Trade Test which the trainees as well as other skilled workmen in the trade could sit. The successful tradesmen would be issued a National Certificate.

Besides the construction industry training project of the Ministry of Local Government and Housing, voluntary and religious organisations as well as the Junior Technical Institutions provide training for construction workers. The training varies in course content and in the nature and extent of practical or on-the-job training.

Trade certification for skilled workers

The issue of a trade certificate would help resolve a problem now faced by the construction industry—that of a standard definition of skill level. At present workmen claiming that they are skilled join the workforce, when in fact they are semi-skilled or at times even unskilled. Certification could improve the quality of the construction worker, and help skilled workers develop professional qualities and disciplines which lead to a more productive construction labour force.

Casual labour

The majority of construction workers are casual workers and move from one employer to another, and from one project to another. As a result there is little continuity or permanence in the working

groups and work teams. It results in fluctuations in the standard of workmanship and productivity. Workers who constantly change employers do not develop loyalties to a work team and disciplines that grow from stable employer-employee relationships. In the past, many baas-type contractors were able to build work teams with informal links and strong loyalties which created stable work relationships. The West Asian exodus and the tight labour market in the construction industry have, however, tended to erode this type of informal structure.

The lack of motivation in the form of high absenteeism is quite evident in the construction industry. At a construction site average daily absenteeism could be as high as 20 to 30 %, with a monthly turnover of around 10 % of the workforce. There is also a tendency for absenteeism to be very high following the monthly or fortnightly wage payments. Since many construction workers live on site during a project, it could be attributed to the workmen wanting to visit their families. However, it could also be that they require a period of rest, being unable to work for long periods without a break of four to five days. Meanwhile, the extent to which nutritional levels and health factors are responsible for the high absenteeism and loss of output needs examination.

Changes in the construction workforce

The growth of the construction sector and the migration of construction workers to West Asia have had two effects. The loss of experienced workers and the increased demand put upward pressure on wages. This made construction work relatively attractive. The new construction workers were drawn from different educational levels, most likely higher than those who traditionally sought such employment. This by itself will help the transformation of the sector. Better educated workers may help standardisation, certification, adoption of new technology and promote better management leading to improved performance of the construction sector.

Building Materials in Housing

The building materials for housing are manufactured or made available by three distinct sectors. Some materials are produced by a few public and private large-scale firms. The majority of the materials are produced by many small-scale labour-intensive producers. Finally, there is the import sector which makes fittings and finishes available in the market.

Among the large-scale building material manufacturers, the Ceylon Cement Corporation is the sole cement producer, two private sector industries produce asbestos roofing sheets, the Ceramics Corporation produces toiletware, the Plywoods Corporation produces doors and two private sector industries (until recently) manufactured the PVC items like pipes, etc.

The small-scale industries have a large share of the manufacture of bricks, tiles, harvesting of sand, production of lime, manufacture of hinges and other door and window parts, supply of timber and products such as pressed cement tiles.

Building Materials Corporation

The Building Materials Corporation (BMC) was established in 1971 for the specific purpose of improving the supply of building materials throughout the country. It was expected to promote local building materials. This Corporation developed a network of sales agents and purchasing agents responsible for establishing contact with indigenous building material manufacturers.

Building Materials Manufacturing Corporation

With the increase of construction activities after 1977, the BMC found that demand for materials could not be met entirely by domestic manufacturers. Therefore, while increasing imports it also directed resources towards improving the domestic building materials manufacturing industry. It did so by establishing the Building Materials Manufacturing Corporation (BMMC) in 1978. Its main task was to increase the supply of bricks by means of organising people to manufacture on a piece-rate basis. The BMMC established mecha-

nised timber joinery shops, which produced door and window frames and sashes for the government housing schemes. It was also responsible for the installation and operation of metal crushers and operated a number of mobile crushers according to local demand. Dolomite projects were established at Matale. Another notable achievement was its ability to manufacture standard bricks. The BMMC products were channelled through the BMC.

The quality of most of the locally manufactured housing construction materials is satisfactory. Nevertheless, in the case of bricks there is scope for considerable improvement. Quality improvements could also be considered in the door and window frame industry and in the locally manufactured ceramic toilet items.

Substitution of materials

Increases in prices and supply problems have resulted in the substitution of new materials for traditional ones. Cement sand blocks for clay bricks and the use of pre-stressed purlins in place of roofing timber purlins, have been noted. Cement sand blocks became a common substitute for the burnt dry bricks, particularly in the large public sector housing schemes because of the irregularity of supplies of bricks.

The supply of local materials such as bricks and sand fluctuates widely depending on the weather. A regular flow of materials could be assured only if there is adequate storage to meet seasonal declines in supplies. The market does not appear to be responding to this need either on account of the cost of storage or because of other institutional problems.

Research and Development in Residential Construction

The primary concern of research in residential construction, would be to develop substitutes for materials and processes which are relatively expensive or of low quality and to aid in transforming and improving the quality of the average house. This would include such aspects as materials, designs, organisation, adaptation and assimilation of technology. Research would also have to play a vital role in the search for alternatives and improvements to the traditional wattle and daub palm thatched house.

Building materials research

Research in this area has two components : one, cost reductions in the manufacturing process and the other, cost reductions through substitutes. Cost reduction depends on many factors, cheaper materials may not necessarily result in cheaper houses. Questions of durability, maintenance and quality of service of the resulting house have to be considered. The materials have to be combined with equipment and labour to produce a house. Therefore, the impact of material costs on the other inputs have also to be considered. A continuous experimentation with designs, materials and technology is required in order to effect changes which are adopted. Meanwhile, housing construction will continue to respond to changing demand, availability of resources and technology.

An example where research may result in tangible benefits is in the manufacture of clay bricks. The traditional method results in a high wastage of energy and a product of variable quality.

The benefits of research could be seen in Singha ram blocks, an adaptation of the Cinva ram block. It is a soil cement block pressed in a manually-operated machine. It does not require firing and can be cast using soils which are not suited for clay bricks.

Other areas of research include the stabilisation of soil using cement, lime or bitumen. This stabilised earth is particularly useful as low-cost flooring material. The cost of such a floor would be less than 20% of the cost of a standard brick-paved cement rendered floor.

A concrete door and window frame have been developed as a substitute for the conventional timber door and window frames. With the unprecedented rise in the price of timber, this product could be a low-cost alternative in the future. The use of concrete frames would be almost 30% cheaper than using timber door and window frames at prevailing prices (1983). The total cost saving will depend also on relative wages among other things.

Pre-stressed concrete purlins could be used to replace expensive roof timber. With the depletion of timber resources, the pre-stressed purlin may be a useful alternative.

Roofing sheets using coir-fibre instead of asbestos fibre have been developed at costs which are almost 50% lower. However,

a roof with such sheets requires more timber for its supportive structure. Further research is needed to improve this product, particularly as asbestos fibre has been found to be detrimental to human health and as the coir substitute is an indigenous material. Experiments to reduce the weight while maintaining strength need to be conducted.

Cost Control and Low-Cost Housing

Optimal structural designing

Cost consciousness should commence at the design stage. If at this stage cost considerations are not given careful attention, it would be difficult to implement a cost-effective scheme during the time of construction. In each component of housing—foundation, flooring, superstructure and walling, doors and windows and roofing, alternatives are available which lead to significant cost reductions.

The preliminary step towards an optimal structural design would be the investigation of the ground-bearing capacities where the proposed housing units are to be located. Unfortunately this important aspect is very often neglected, as a result of which foundations of houses are in the majority of cases overdesigned. The simple item of equipment such as a *Mackintosh Probe*, which is relatively cheap, could be made use of to obtain the bearing capacities easily and expeditiously. A positive step towards solving this problem would be to make such items of equipment freely available at a nominal hire charge to designers and prospective house builders. Most areas including some of the marsh areas have soil-bearing capacities of over half ton per square foot, increasing up to about 4 tons per square foot in areas where laterite soils are available. Conventional building without resorting to seriously-modified foundations, is most often adequate.

Decisions would also have to be taken in regard to certain trade-offs between appearances, comfort and cost. For example, 9 inch brick walls are structurally stronger and superior in insulation properties than a $4\frac{1}{2}$ inch brick wall which however may be sufficient structurally. The $4\frac{1}{2}$ inch brick wall is more than adequate to support the load for the roof of a small house. Using cement sand blocks in place of brick may save costs as plastering could be avoided.

Another example is the window area provided. In comparison with the cost of the walls, the window cost is more than five times higher; therefore by minimising the window area by alternative ventilation openings, it is possible to reduce cost. Grill work which is much cheaper per square foot than windows could be considered as an alternative for selected openings.

Cost reductions could also be effected by reducing the cement content of the mortar that is used to join the brick or blocks. The usually specified and extensively used mix of 1/5 or 1/6 cement to sand has a much higher strength than the bricks or blocks themselves. Hence, a mix with a strength appropriate to the brick or block would contribute toward savings. Similarly, using stabilised earth for flooring could make considerable savings. Other solutions to reduce costs would be the incorporation of concrete door and window frames in place of timber and the use of pivots as an alternative to hinges. Bamboo strips could be woven to form panels and used for internal partition.

The variables that constitute the cost of a house are numerous and computer simulations would be a means by which optimisation for different criteria could be evaluated. For instance, the various dimensional combinations available to obtain the same internal area are numerous and may result in different wall perimeter lengths in relation to the internal area. These dimensions are in turn related to the lengths and sizes of the roof timber, the asbestos roofing sheets and valance board lengths. Other variables such as the cost of the brick walls vs block walls, plastering, the window area as a variable, the internal space arrangements could all be made into a model and optimised using computer-based techniques.

The annexes 2 and 3 give two proposals of low-cost housing units. The first proposal gives a housing unit of 300 square feet and the second proposal gives an expandable type of low-cost housing unit. Both these proposals incorporate the factors discussed such as the substitution of cement grill work in place of windows, cheaper foundations, block work without the use of plaster, a simple pitched roof without hips or valleys, etc. These housing units could be constructed under Rs. 125 per square foot

at the prevailing prices of materials and labour (early 1984). If aided self-help methods are adopted, further savings could be made.

Workmanship and Management in the informal sector

The migration of skilled construction workers to the West Asian countries, combined with the increasing demand for construction labour appears to have had adverse effects on both the quality of workmanship and the productivity of labour. In most skilled categories there was some substitution of semi-skilled workmen for skilled workmen. This situation has led to poor workmanship, inefficient use of materials and avoidable waste. These adverse effects were felt particularly in house construction where the labour intensity was higher than in the other sectors of construction. These changes in the workforce no doubt contributed to the escalation of costs in house construction.

This could be illustrated by a few simple examples. Where owing to lack of skill the wall is not constructed to the plumb line, the error has to be rectified by the demolition and reconstruction of the wall or by a thicker layer of plaster, both of which entail additional costs. For instance, an eccentricity of 1/2 inch at the wall plate level would require an additional 1/2 inch of plaster at the worst point of eccentricity gradually tapering to zero. This would be necessary on both the internal and external faces of the wall, resulting in a 50 % increase in the cost of plastering. Another common mistake that is made is the assumption by most inexperienced masons that four courses of brick work are required to build a wall to a height of one foot. This assumption is correct only in the case of the brick with standard dimensions. In reality the dimensions vary and the bricks are normally smaller in size. In order to obtain the height of one foot using four courses of brick work, the mortar joint between the two courses has to be made much thicker resulting in the excessive consumption of cement. This could be quite easily overcome by planning the courses of brick work based on the actual thickness of the bricks available.

Another factor which contributes to the escalation of costs in house construction is the inadequacy of both management and technical supervision in the large informal sector which is dominated by the small-scale individual house contractors. These contractors

are basically labour contractors who supply the labour and supervise the construction. When house construction is organised in this manner, the individual house builder himself has to undertake a major share of the responsibility. He has to coordinate the activities of several persons who each have separate tasks. He has to organise the supply of materials. He himself will have little technical know-how in regard to house construction and would depend on the contractor for advice on the quality and quantity of materials required. If the contractor is only a labour contractor, he has no strong incentive to plan and manage the use of materials in order to effect economies and cut down on cost. This type of house building, therefore, can lead to considerable waste and escalation of costs unless the individual house builder is able to bring a fair degree of management skill and knowledge and devote substantial time and effort to the task. Problems are further compounded by the fact that such cost overruns create financial problems for the house builder which results in temporary stoppages of work and further escalation of costs. In this large informal sector of house construction, there is, therefore, considerable scope for a wide range of state-sponsored initiatives for improving the basic know-how management skills and expertise of the key participants in the house construction activity.

The preparation of a proper set of drawings, bills of quantity and specifications prior to construction, is often neglected. These three documents are the means by which the designer communicates with the builder. An accurate bill of quantities is useful and important for the individual house builder. If this is available then an accurate material resource schedule could be prepared which could be related to the various items of work. Similarly, a work-related labour resource schedule can be prepared. For instance, the two schedules would indicate the quantity of materials and labour required up to the stage of the foundation. Once the foundations are completed, a check could be carried out to ascertain whether labour and materials are in keeping with the planned amounts or whether they have been exceeded. If the actual use is in excess, corrective action could be taken to prevent further occurrences.

This type of scheduling can be carried out so that a daily control is maintained. Therefore, handbooks, preparation of standard designs with bills of quantities and labour schedules, standard programmes of house construction with supply schedules and simple cost control and progress control techniques could be made available more widely.

Summary and Conclusions

During the 1971-77 period the national economy grew at an exceptionally slow pace. Real construction output declined as capital formation slowed down. Nevertheless, the available data suggest that the aggregate housing sector was resilient and that housing output had increased.

A primary ingredient of the post-1977 economic growth was the increased investment activity that took place. This investment contained a large construction component. However, the share of private (and public corporations) residential construction in total capital formation declined during this time. The demands placed on the construction sector seem to have strained its capacity and caused serious inflation within the sector. The inflation of building material prices and construction wages had been transmitted to the housing sector. Although housing activity increased after 1977, inflation of input prices would have been a disincentive and helped reduce demand growth.

The residential component of the construction sector relies mainly on the small-scale contractor and producer both for housing construction as well as for the supply of building material. It is on this segment that the performance of the housing sector depends. There is great scope for improving productivity in this segment through well-designed programmes which could impart a package of management skills and know-how on various aspects of construction activity. Handbooks, preparation of designs, standard pro-

grammes on housing construction with supply schedules, cost control and progress control techniques, should be made available more widely through programmes of non-formal training.

It is in the category of low-income housing units with one, two and three rooms that a more organised effort is needed for improvement of design and reduction of cost. Within the constraints of the low-income house there is considerable scope for enhancing the quality of the home with various basic improvements through innovative designing related to the needs of the low-income households as well as to environmental factors. Similarly, cost reduction could be achieved both through improvements in design as well as choice and substitution of construction materials.

The construction workforce has undergone considerable change in the recent past. The migration of skilled labour has resulted in accelerated training which has brought new cadres into the workforce. The work gangs in the past which worked continuously for small-scale contractors have to some extent been replaced by a more volatile workforce. With the increase of wage levels, the higher grades of construction labour have attracted workers from higher educational levels. The programmes of training need to take into account these changing characteristics of the construction workforce. The informal apprenticeship of the past may no longer be sufficient to produce a quality workforce. The present initiatives for more formal training of craftsmen and for certification of their skills will, therefore, have to be strengthened and its coverage broadened.

Improvement in housing for those below median income requires a well-targeted research and development effort. This must include the development of appropriate new building materials, alternative housing designs and methods and techniques of construction, all of which help to reduce cost and at the same time maintain and improve quality.

TABLE 1

ANNUAL GDP AND CONSTRUCTION OUTPUT

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982
GDP (1970 prices) Rs. Millions	13,187	13,209	13,631	14,138	14,585	14,987	15,431	16,078	17,401	18,501	19,575	20,706	21,756
Annual Growth %	..	0.2	3.2	3.7	3.2	2.7	3.0	4.2	8.2	6.3	5.8	5.8	5.1
Construction Output (1970 prices) Rs. Millions	744	708	651	665	712	549	685	619	794	960	1,066	1,034	1,013
Annual Growth %	..	-4.8	-8.0	2.1	7.1	-8.8	5.5	-9.6	28.3	20.9	11.0	-3.0	-2.0
Proportion of Construction in GDP (both in 1970 prices)	5.6	5.3	4.8	4.7	4.9	4.3	4.4	3.8	4.6	5.2	5.4	5.0	4.6

Source: Central Bank of Ceylon Annual Reports, 1974, 1978, 1982

TABLE 2

**GROSS DOMESTIC FIXED CAPITAL FORMATION (GDCF) AND ITS SHARE
IN GROSS DOMESTIC PRODUCT 1970-82**

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	
1. GDP (Current Factor Cost) Rs. Mn.	..	13,187	13,647	14,720	17,920	23,302	25,691	28,232	34,684	40,473	49,782	62,246	79,337	91,878
2. GDCF (Fixed Capital) (Current Market Prices) Rs. Mn.	..	2,359	2,140	2,206	2,493	2,972	3,699	4,595	5,035	8,521	13,246	20,845	23,279	30,228
3. GDCF/GDP %	..	17.9	15.7	15.0	13.9	12.7	14.4	16.3	14.5	21.0	26.6	33.5	29.3	32.9
4. Fixed Capital formation in Building and Residential Construction by Private Sector and Public Corporations CFBR (at Current Prices) Rs. Mn.	..	993	993	927	1,029	1,334	1,304	1,547	1,498	2,213	3,833	6,270	7,906	8,988
5. CFBR/GDCF %	..	42.1	46.4	42.0	41.3	44.9	35.2	33.7	29.7	26.0	28.9	30.1	34.0	29.7

Source : Central Bank Annual Reports 1975, 1978 1984.

TABLE 3
LABOUR PRODUCTIVITY IN HOUSING AND BUILDING
CONSTRUCTION 1971 AND 1981

	1971	1981	% <i>Increase</i>
Construction output (1970 prices) Rs. Million	708	1,034	46.0
Labour force ('000)	103.6	124.8	17.0
Housing and building as percentage of total construction	86.4	70.0	19.4
Percent of construction labour force in building and residential construction	68.6	78.5	14.4
Labour productivity in total construction (1970 prices) Rs.	6,836	8,288	21.2
Labour productivity in housing and building ..	8,660	7,382	-14.7
Labour productivity in all other construction ..	2,852	11,556	305.2

Sources: Central Bank of Ceylon, Annual Reports, 1971 and 1981.

Department of Census and Statistics. The Economically Active Population, Preliminary Release No.4. (Census of Population and Housing, 1981)

See Ganesan, S. (1976) and NIBM (1983).

TABLE 4

CONSTRUCTION COST INDICES AND INFLATION 1971-1982 (1969 = 100)

ITEM	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982
CEMENT	100	100	116	164	164	164	164	191	292	636	723	814

	Index	Inflation	16.0	41.4	0.0	0.0	0.0	16.4	52.9	217.8	13.7	12.6
BRICKS	89	89	124	156	156	156	156	268	285	393	388	442

	Index	Inflation	39.3	25.8	0.0	0.0	0.0	71.8	6.3	37.9	-1.2	13.9
ASBESTOS SHEETS	109	111	144	213	254	295	286	327	411	607	637	70.6

	Index	Inflation	29.7	47.9	19.2	16.1	-3.0	14.3	25.7	47.7	3.3	12.6
SAWN TIMBER	100	100	101	129	129	129	129	217	378	634	814	814

	Index	Inflation	1.0	27.7	0.0	0.0	0.0	68.2	74.2	67.7	28.4	0.0
HOUSING	106	110	123	140	160	163	173	252	348	519	617	645

	Index	Inflation	11.8	21.1	7.4	1.9	6.1	45.6	38.1	49.1	18.9	4.5
NON-RESIDENTIAL BUILDING	109	117	134	174	181	186	199	234	320	463	548	586

	Index	Inflation	14.5	29.8	4.0	2.8	7.0	17.6	36.7	44.7	18.3	6.9
OTHER CONSTRUCTION	109	115	130	166	169	175	187	220	278	386	457	493

	Index	Inflation	13.0	27.7	1.8	3.5	6.8	17.6	26.4	38.8	18.4	7.9
ALL CONSTRUCTION	108	114	129	164	171	175	186	247	327	469	558	592

	Index	Inflation	13.1	27.1	4.3	2.3	6.3	32.8	32.3	43.4	18.9	6.1

Source: Central Bank of Ceylon—Review of the Economy, 1979, 1981, 1983.

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1. Ganesan, S., 1976, "The Building Industry in Sri Lanka and Problems of Common Interest to Developing Countries, *Engineer*, Vol. 4, No. 2.
and
National Institute of Business Management, 1983, *Assessment of Training Needs in the Construction Industry*.
2. Central Bank of Ceylon, *Annual Reports 1972, 1979 and 1983*, Colombo, Sri Lanka.
and
Department of Census and Statistics, 1983, *Census of Population and Housing 1981. The Economically Active Population : Preliminary Release, No. 2*.
3. Central Bank of Ceylon, Statistics Department, *Price and Wage Statistics, December 1979 and October 1983*.

ANNEX 1

HOUSING SCHEMES CONSTRUCTED 1978—1980 BY
CONSTRUCTION ORGANISATIONS

Foreign Contractors

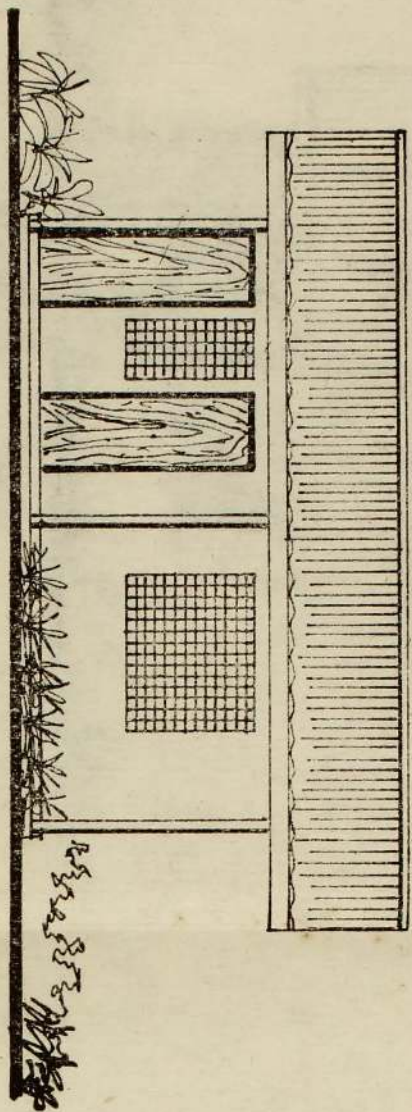
1. Rukmale Housing Scheme	501	Units	SBTP of France
2. Raddoluwa Housing Scheme	2022	"	Keang Nam of South Korea
3. Trincomalee Housing Scheme	366	"	SBTP of France
4. Hantane Housing Scheme	300	"	Compagnia Progetti Construzi- nio (CPC)
5. Ranpokunawatte Housing Scheme	1760	"	Keang Nam of South Korea
Total	4949	"	2 organizations

Local Leading Contractors

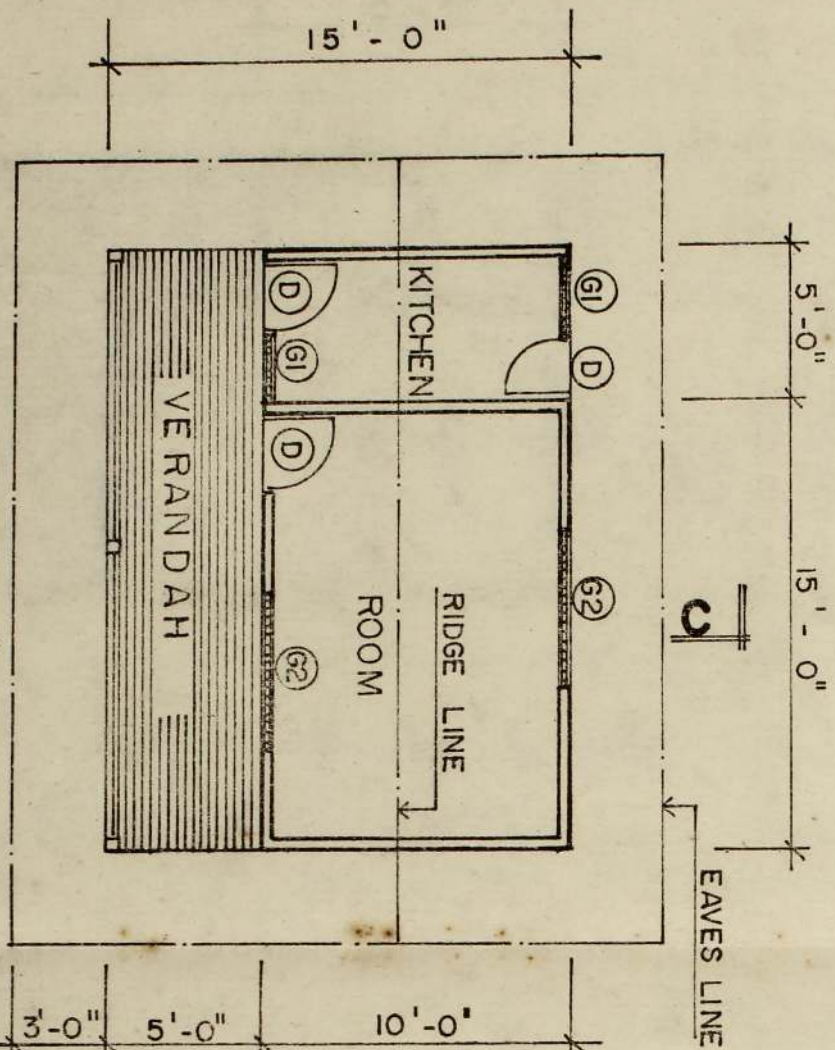
1. Mattegoda Housing Scheme	1122	Units	Navaloka Construction Co.
2. Wickramasinghapura Housing Scheme	705	"	Walkers
3. Police Quarters, Kollupitiya	202	"	S. P. Muttiah & Co.
4. Beira Lake Housing Scheme	96	"	Colombo Commercial Co. Ltd.
5. Mihindu Mawatha Housing Scheme	74	"	Ceylon Development Engineering
6. Vipulasena Mawatha Housing Scheme	50	"	Link Engineering Co. Ltd.
7. Bullers Road Housing Scheme	48	"	I.C.C. Ltd.
8. Lock Gate Lane Housing Scheme	30	"	Colombo Commercial Co. Ltd.
Total	2327	"	8 organizations

Other Local Contractors

1. Iskolawatte Housing Scheme	100	Units	Tissa Builders
2. Kurugahakotuna, Kolonnawa	64	"	Artisans Ltd.
3. Newham Square	51	"	Walker & Greig Ltd.
4. Udanagama	100	"	
5. Egodawatte, Weligama	64	"	A.I.D. Group
6. Egodauyana, Moratuwa	85	"	Cryshantha De Silva
7. Dambuwewatte, Gampaha	129	"	Samacon Ltd.
8. Arruppola, Kandy	39	"	A. M. I. Marikkar
9. Badulla Public Servants' Quarters	23	"	H. S. Fernando & Sons
10. Public Servants' Quarters, Moneragala	19	"	Semage & Co.
11. Hambantota Public Servants' Quarters	35	"	V. A. Upanishamy
12. Maddumagewatte, Nugegoda	188	"	Majeedsons
13. Panagoda Housing Scheme	30	"	Suzuki Engineering Ltd.
14. Bambarakele Nuwara Eliya	30	"	Development Constructors, Kotmale
15. Kurunegala Public Servants' Quarters	15	"	Samacons Ltd.
16. Mawathagama	91	"	(Not Known)
17. Tangalle Public Servants' Quarters	15	"	F. Ratnayake
18. Mutiyangana, Badulla	98	"	Hiat Lev. Co. Ltd.
19. Sudhumpola, Kandy	36	"	Lekamge Associates
20. Anuradhapura Public Servants' Quarters	25	"	3 M Construction
21. Kalmunai Masoor Maulana	40	"	Dev. Surveys & Construction
22. Mahaliyawatte, Galle	60	"	7 contractors
23. Wembupuni, Kalmunai	40	"	Dev. Surveys & Construction
24. Kalyaddi, Batticaloa	14	"	Master Builders
25. Kindawatte, Dehiwala	33	"	Construction Liaison Ltd.
26. Public Servants' Quarters, Nuwara Eliya	11	"	Puniyadasa
27. Navatkuli, Jaffna	298	"	6 contractors
28. Icemolawatte, Weligama	50	"	8 contractors
29. Sinnaurani, Batticaloa	30	"	V. V. Karunaratne
30. Dias Place	324	"	Samacons
31. Ambagahawatte, Wennappuwa	52	"	(Not Known)
32. Manning Town Public Servants' Quarters	16	"	Ceylloyds
33. Wedagama, Dompe	25	"	Lanka Builders
34. Dewinuwara	257	"	Number of contractors
Total	2487	"	More than 50 organisations



FRONT VIEW

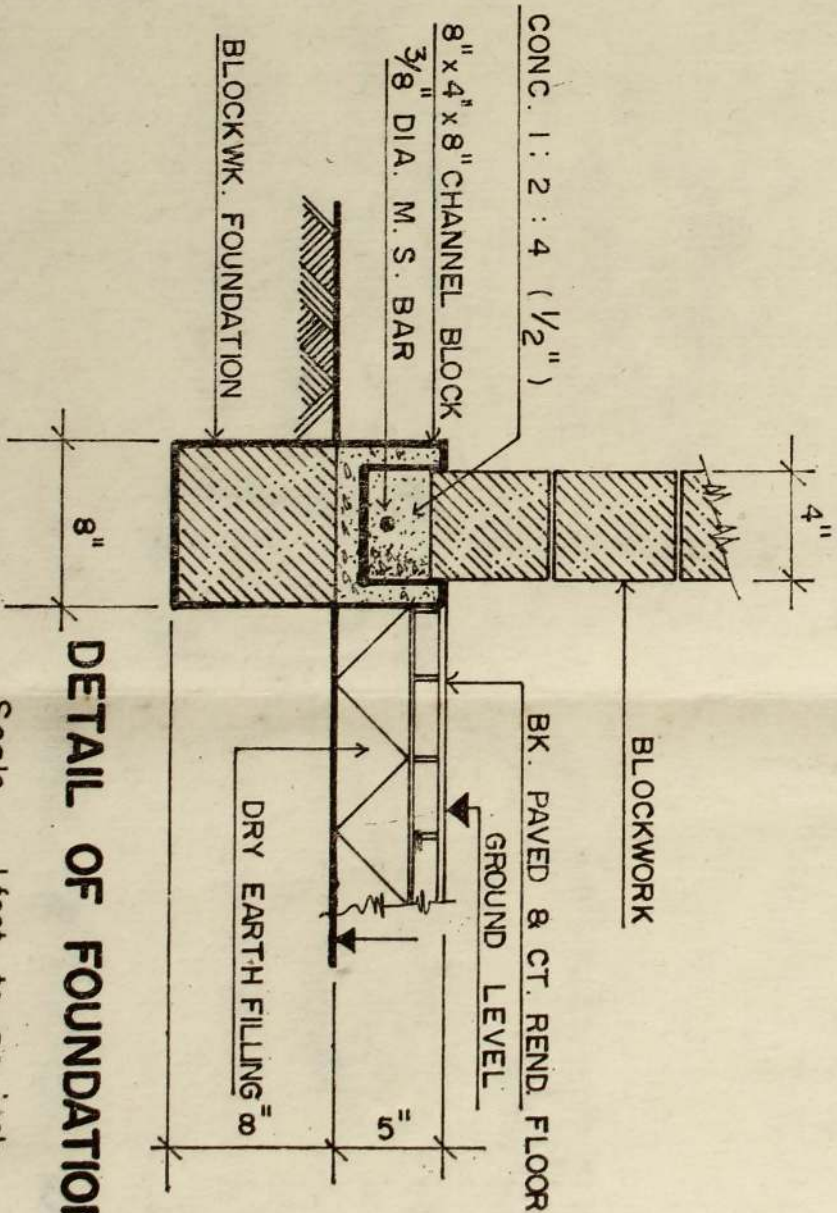
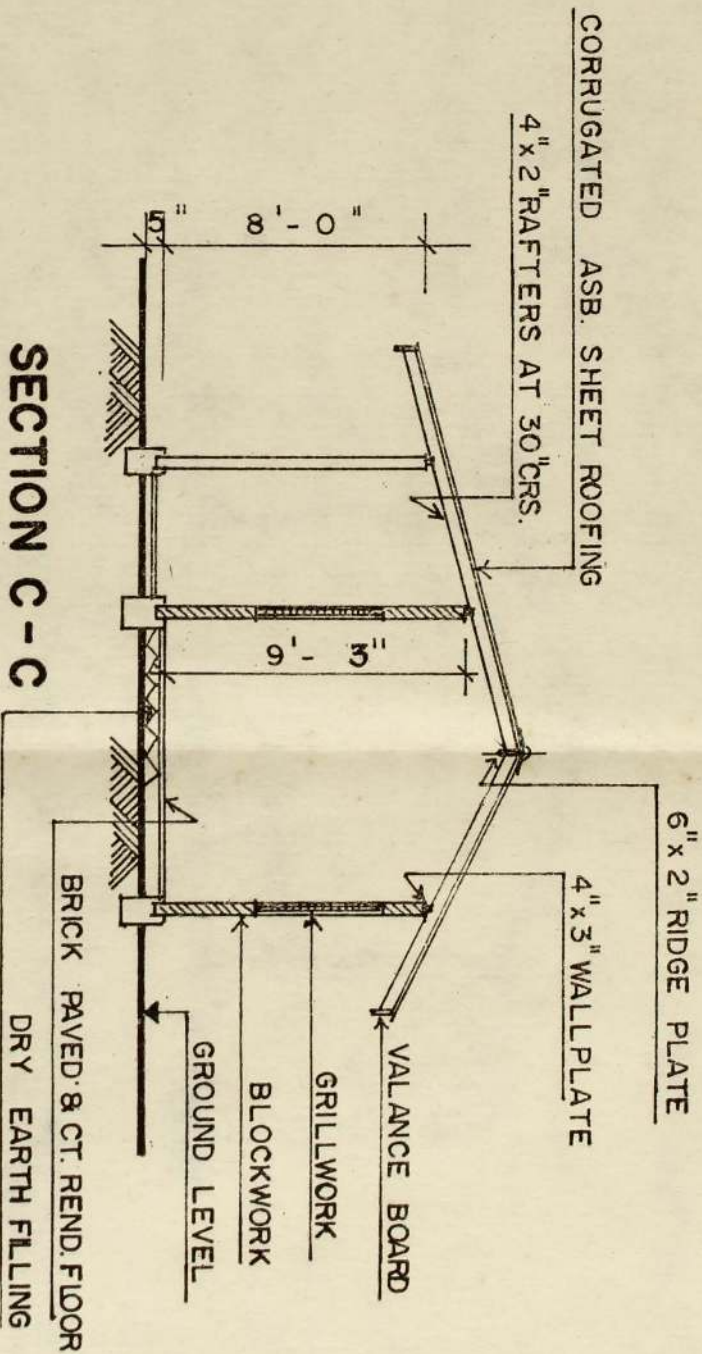


PLAN

Scale - 8 ft. to an inch

D	2'-6" x 7'-0"	PLYWOOD DOOR	3 nos.
G1	2'-0" x 4'-0"	CEMENT GRILL	2 nos.
G2	5'-0" x 4'-0"	DO	2 nos.

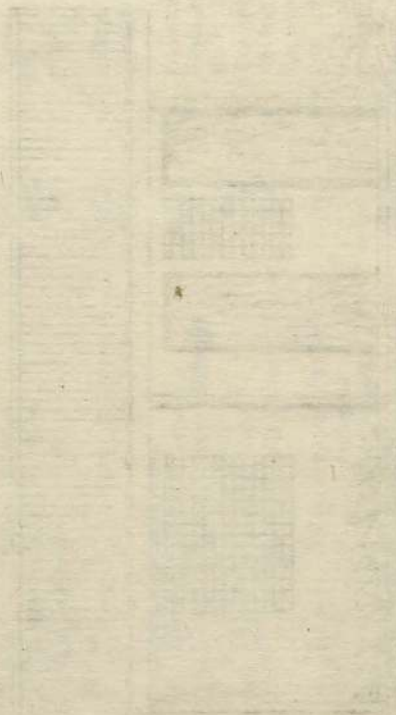
SECTION C-C



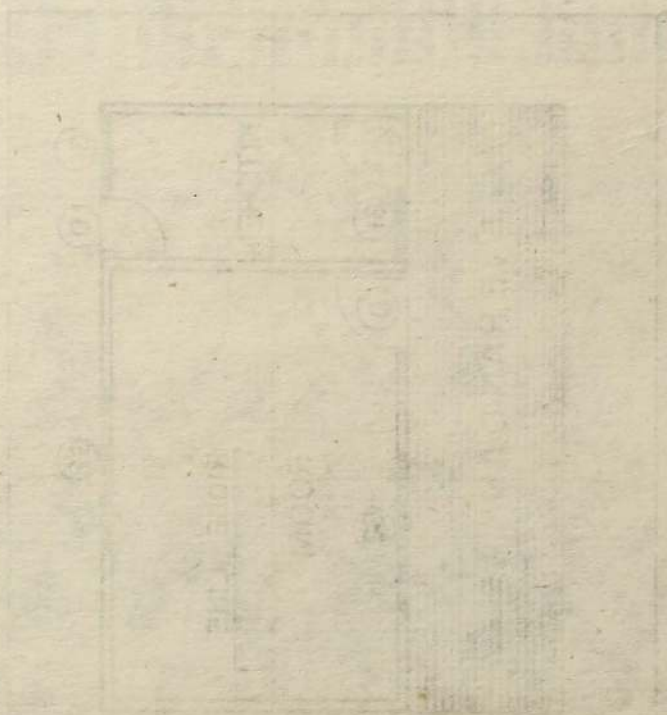
DETAIL OF FOUNDATION

Scale - 1 foot to an inch

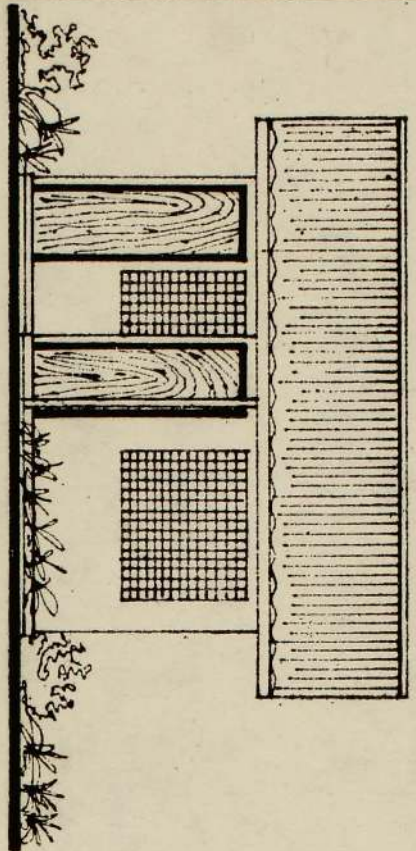
NOTE
Toilet not considered, as assumed to be separate from house.



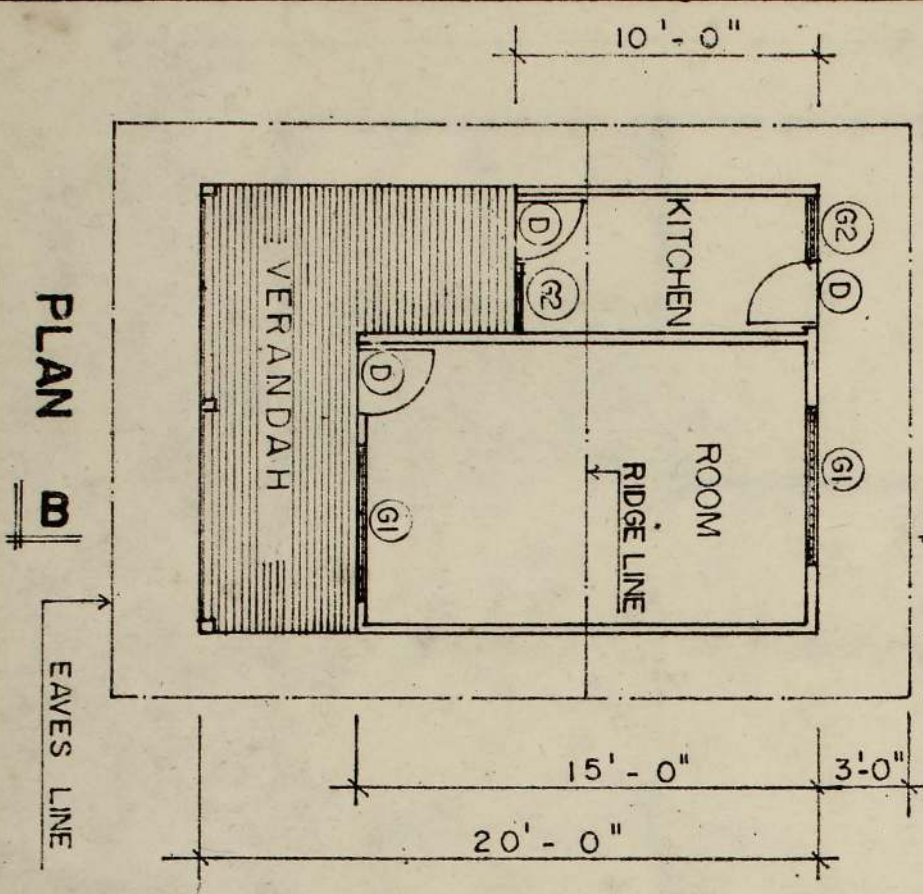
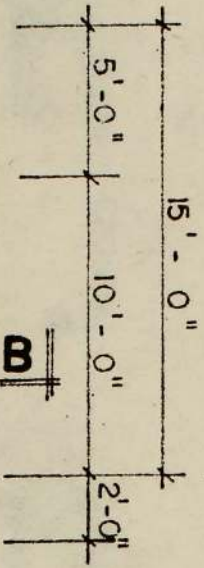
FRONT VIEW



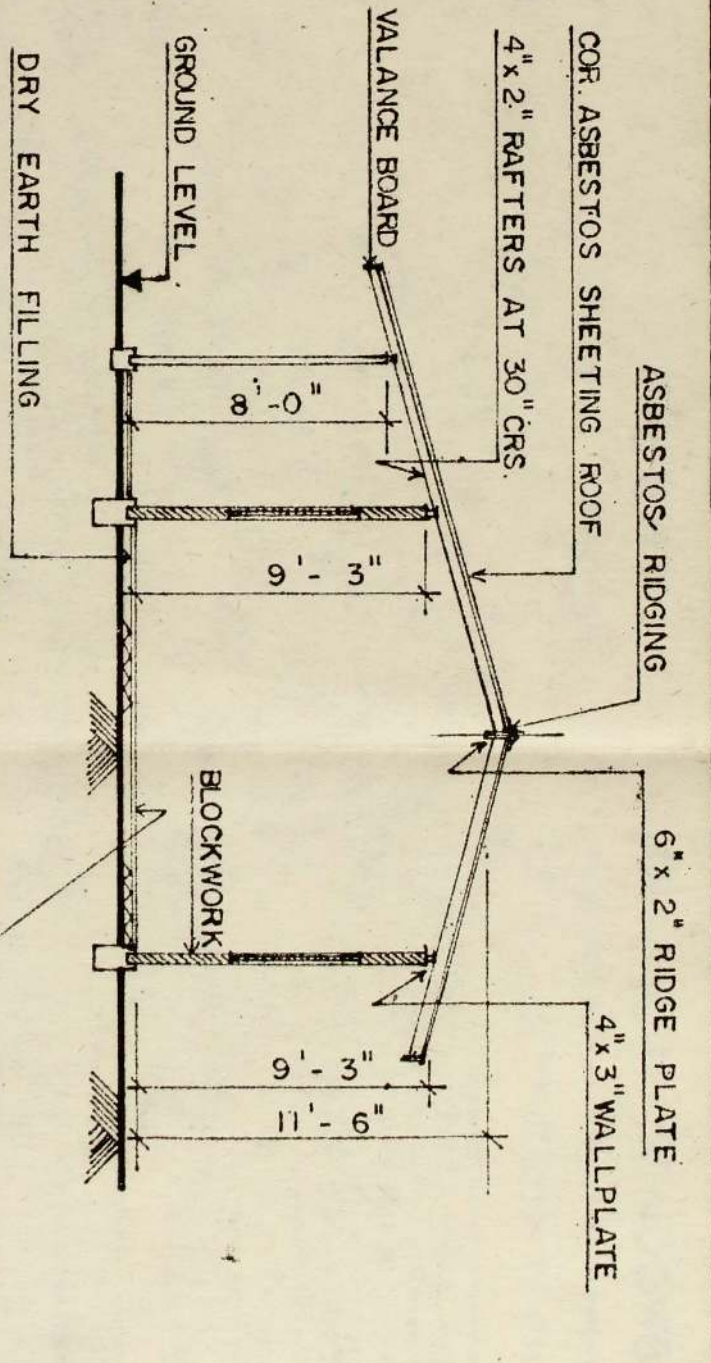
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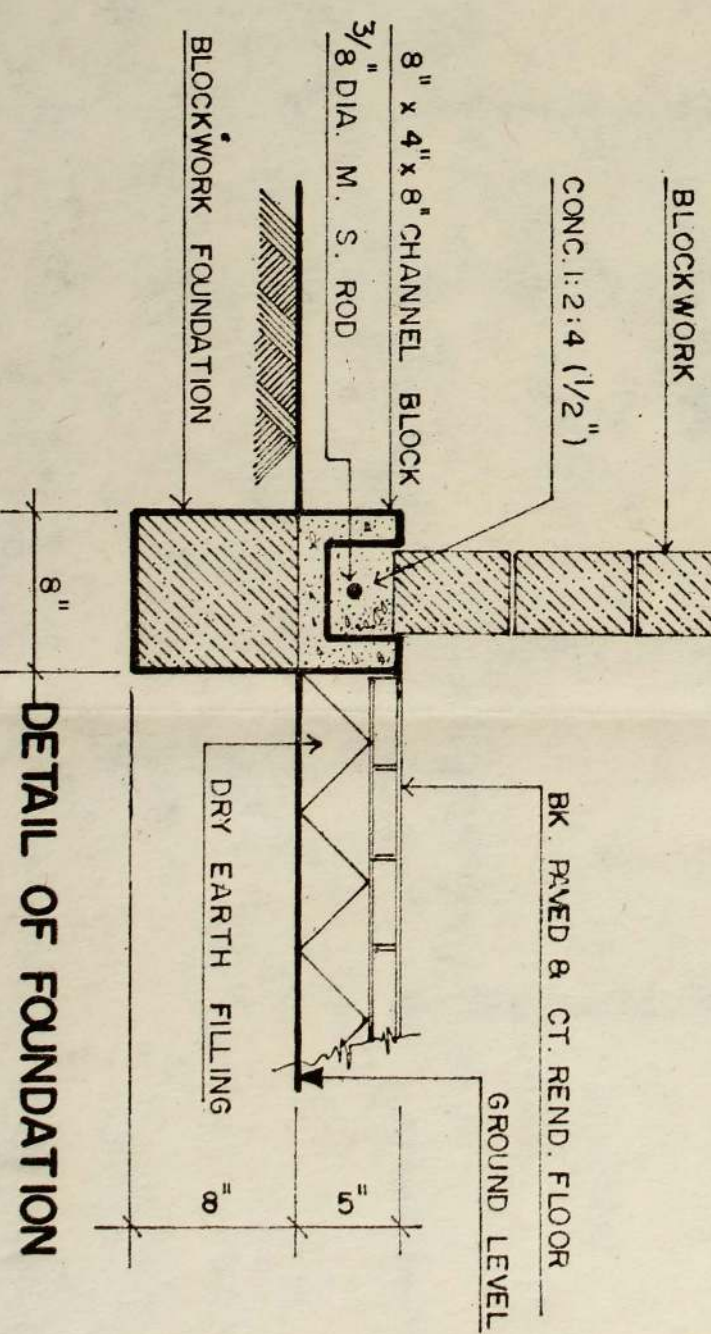
FRONT VIEW



PLAN



SECTION B-B



DETAIL OF FOUNDATION

Scale - 8 ft. to an inch

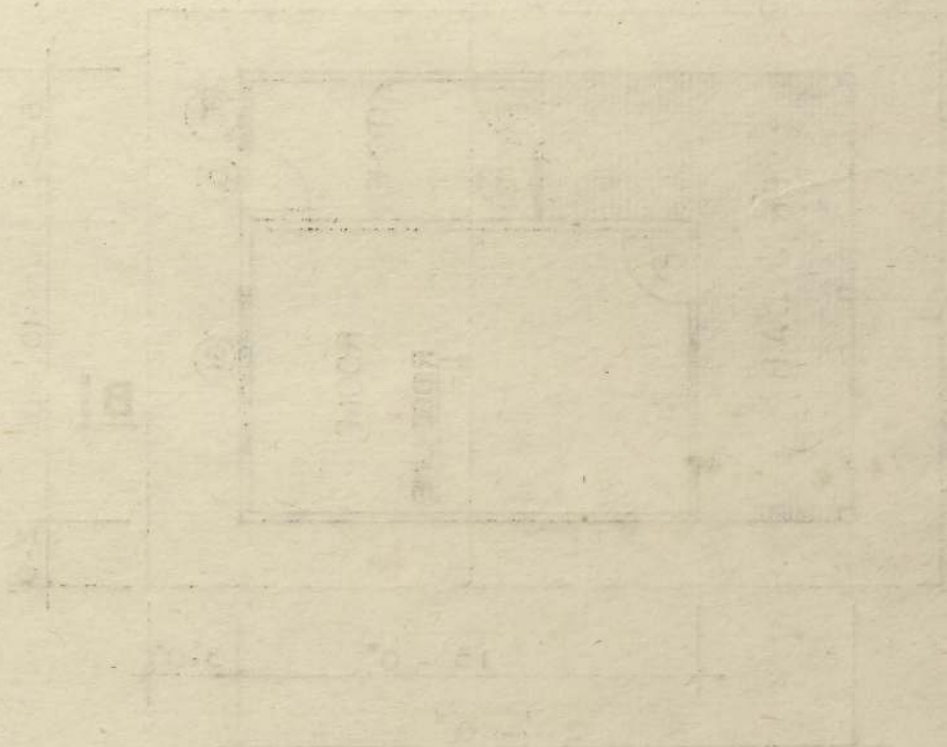
Scale - 1 foot to an inch

D	2'-6" x 7'-0"	PLYWOOD	DOOR	3 nos.
G1	5'-0" x 4'-0"	CEMENT	GRILL	2 nos.
G2	2'-0" x 4'-0"	DO		2 nos.

NOTE - Toilet not considered, as assumed to be separate from house

PLAN D

EAVE 1/2"



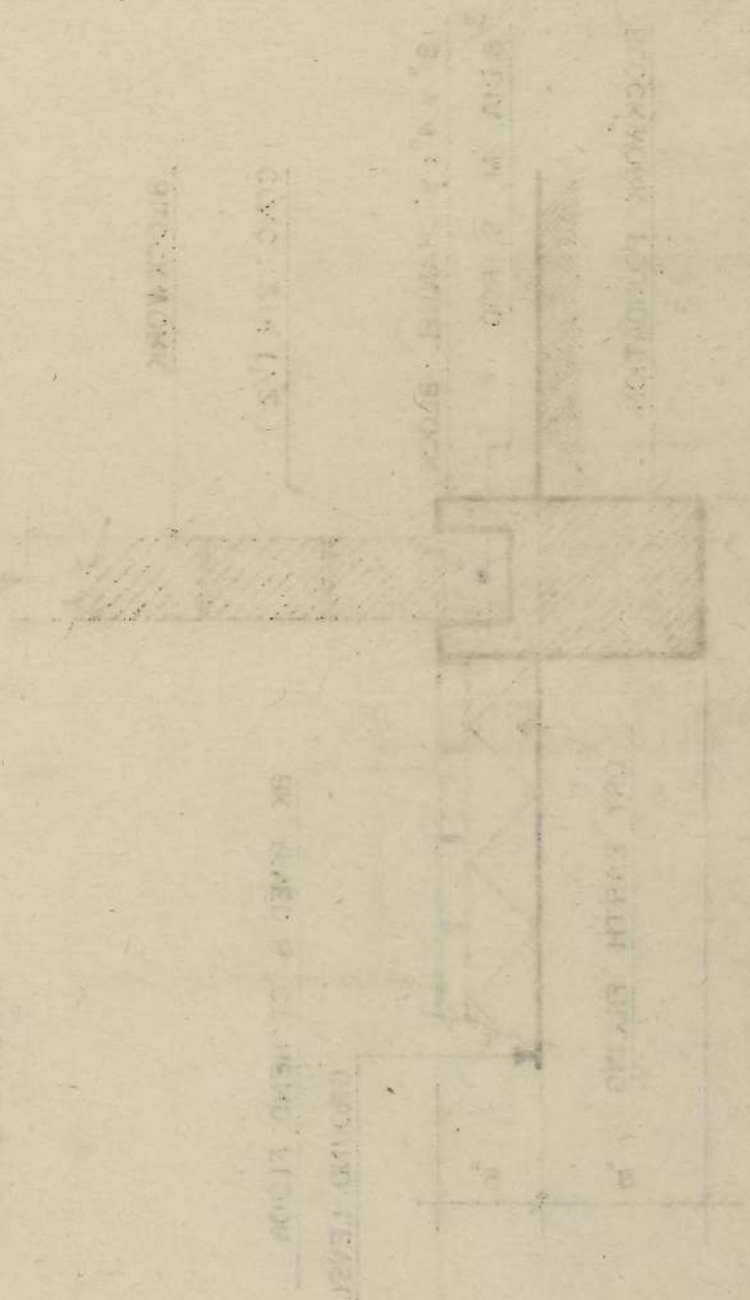
FRONT VIEW



3'-0" x 4'-0"	10'	5'-0"
3'-0" x 4'-0"	CEMENT	5'-0"
3'-0" x 4'-0"	PLASTER	5'-0"
3'-0" x 4'-0"	DOOR	5'-0"

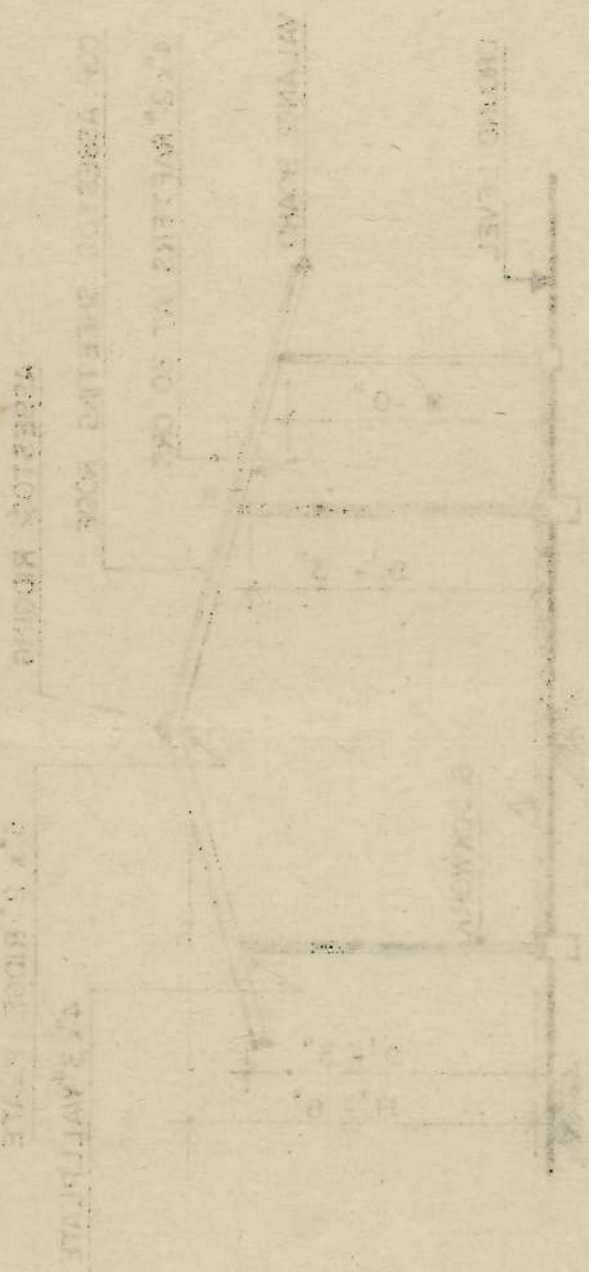
Scale - 8 1/2" to 10' dia. wall

DETAIL OF FOUNDATION



SECTION N-B

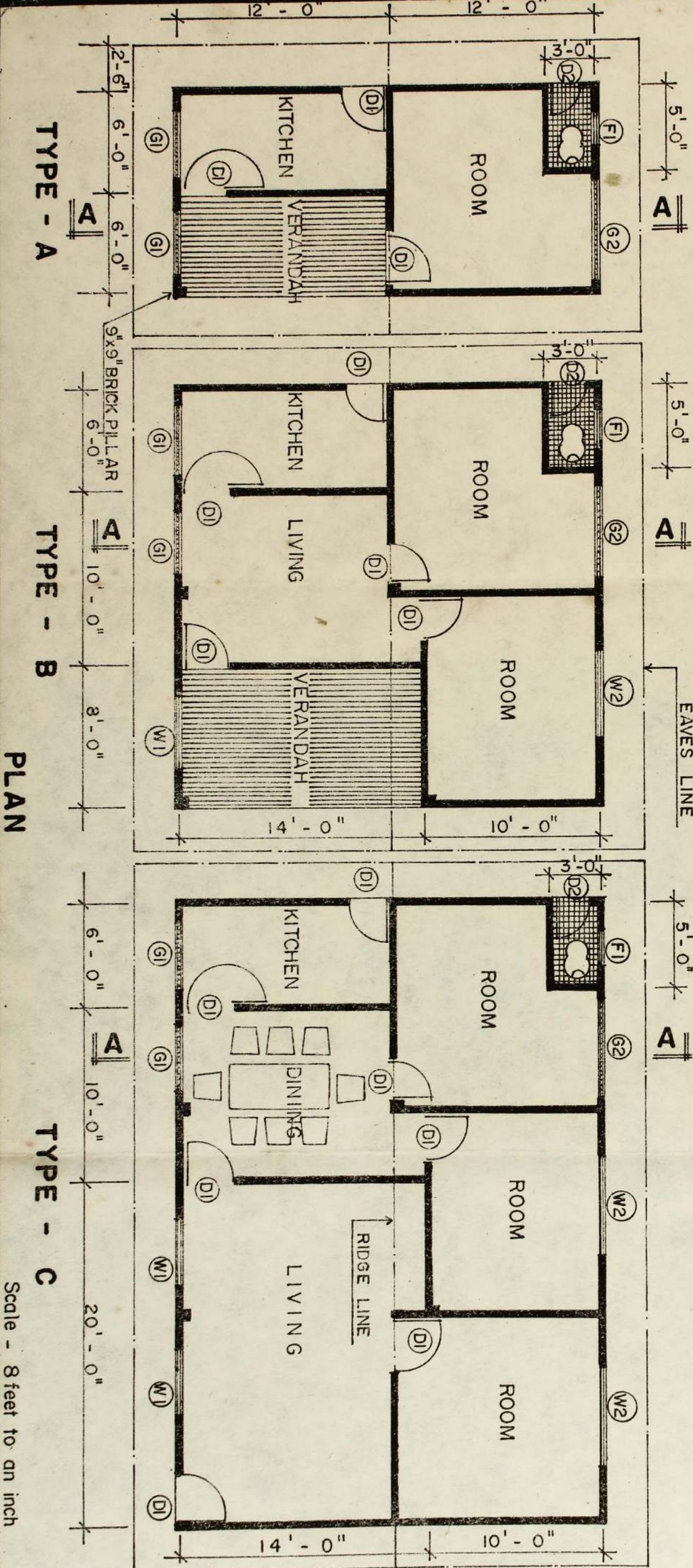
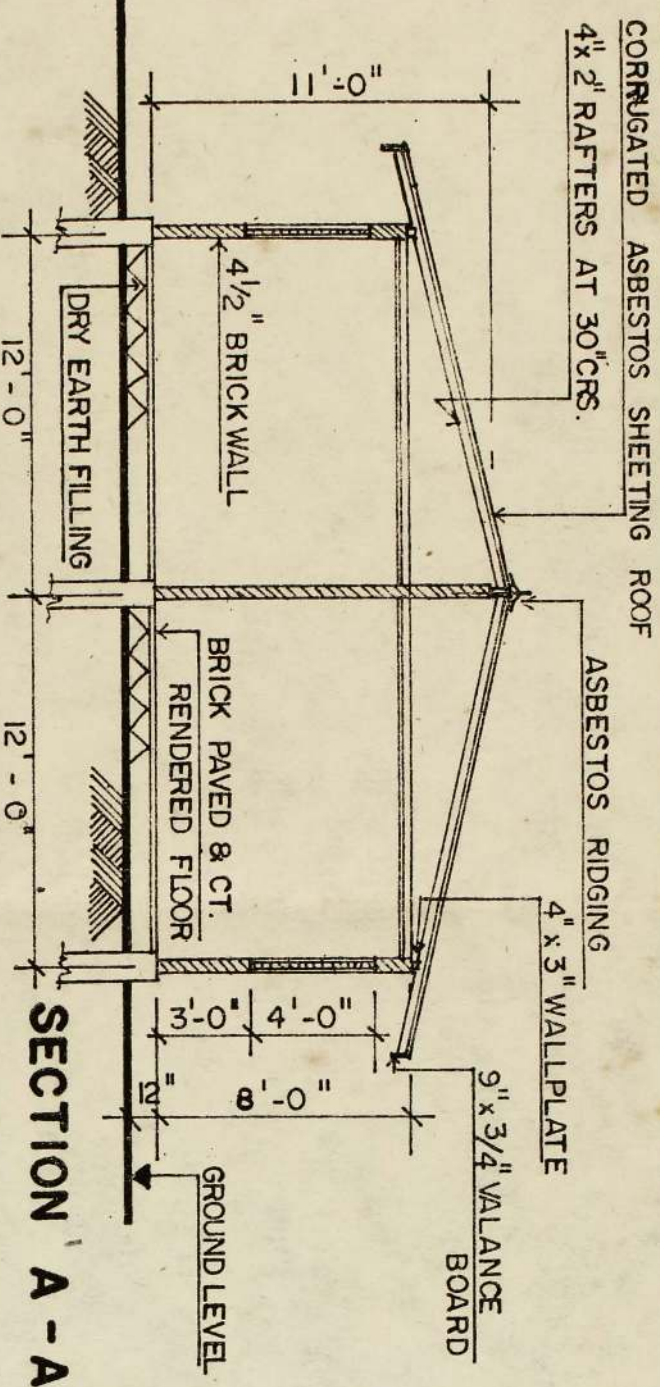
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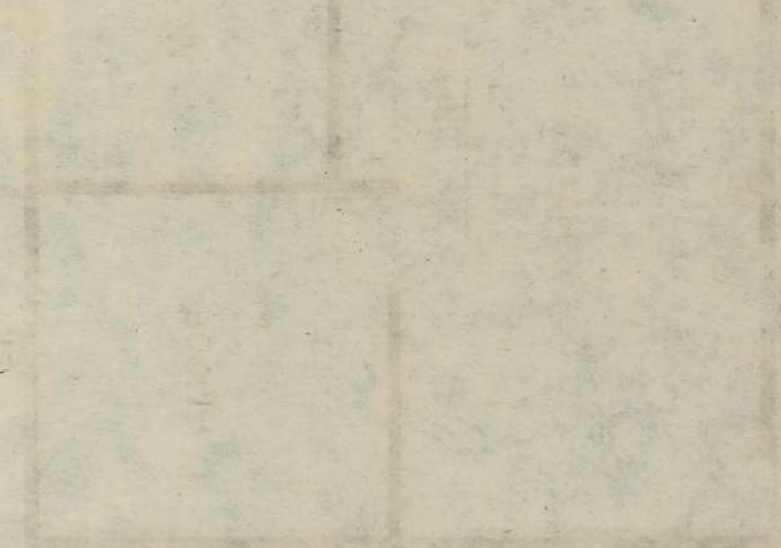
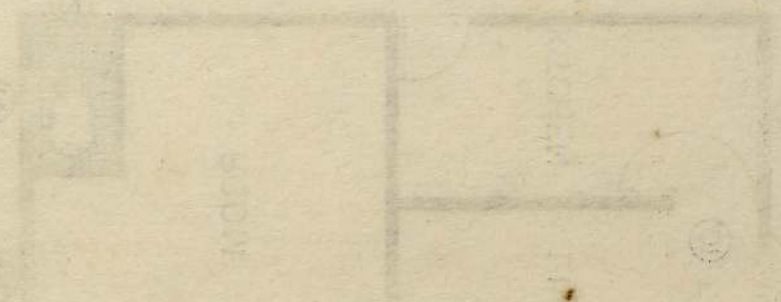
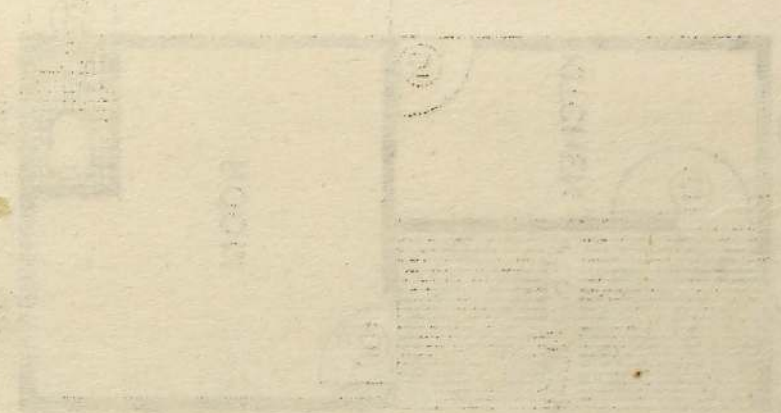
ANNEX 3

SCHEDULE OF DOORS AND WINDOWS

NO	NO			TYPE	SIZE	DESCRIPTION
	A	B	C			
03	05	07		D1	3'-0" x 7'-0"	PLYWOOD DOOR (Ordinary type)
01	01	01		D2	2'-6" x 7'-0"	DO (Marine type)
-	01	02		W1	4'-0" x 4'-0"	LEDGED & BATTENED WINDOW
-	01	02		W2	6'-0" x 4'-0"	DO
01	01	01		F1	2'-0" x 1'-0"	GLAZED FANLIGHT
02	02	02		G1	4'-0" x 4'-0"	CEMENT GRILL
01	01	01		G2	6'-0" x 4'-0"	DO



TYPE - A



SECTION A-A

SECTION OF DOORS AND WINDOWS

CHAPTER 10

CONCLUSIONS : KEY ISSUES IN A NATIONAL HOUSING STRATEGY

This chapter brings together the more important conclusions in the study and defines some of the key elements which should form part of a national housing strategy. It first examines the lessons to be derived from the performance of the housing sector in the 1971-81 period and the policy implications of the trends in housing investment and output. Next, the overall objectives of housing policy are discussed, and the profile of future housing needs delineated. The chapter then proceeds to identify the major policy initiatives that must form part of a national housing strategy. These cover the role of the state in dealing with the urgent problems of housing of disadvantaged groups (such as slums and shanties and estate housing), housing in the metropolitan urban areas and how these need to be integrated with strategies of urban development; the management of land as a resource for housing; the various flows of financial resources for housing investment, their capacity to fulfil future needs and the way they could be mobilised and augmented; the informal character of the house construction industry and the special efforts needed to upgrade managerial and technical skills in this sector; the research and development required to reduce costs and improve quality of housing for low income groups; and, finally, the improvement and rationalisation of the administrative structure and institutional framework for housing and enhancement of its capacity for policy analysis and evaluation. Many of these elements are part of the existing housing activities. They need to be strengthened and developed into a consistent strategy, and the objectives and targets for each of these elements articulated more clearly and explicitly.

The Housing Output and Changes between 1971-1981 The Policy Implications

The changes that took place in the period between 1971 and 1981, the two census years for which detailed information on the housing stock is available, clearly indicate that there has been a discernible improvement in the housing situation both in regard to the availability of housing units as well as the average quality of the residential unit. Structurally, the housing stock underwent a significant transformation during this period. The proportion of housing in the permanent category recorded a substantial increase from 35.4 % of the total stock in 1971 to 41.8 % in 1981. What is of special interest is that in the net addition to the permanent stock, nearly three-fourths was in the rural sector. In regard to space, the share of one-room houses in the total housing stock dropped appreciably from 35 % to 30 %, reflecting both the increase of per capita space as well as more specialised use of space within the housing unit. All these are important indicators of the improvement in the quality of life.

However, in the provision of amenities, such as water supply and toilet facilities, the improvement has proceeded at a much slower pace, indicating that in the bundle of shelter services, the households assign higher priority to structural improvements and the availability of space.

The analysis of changes that have taken place in the 1971-81 period also draws attention to the complex and heterogeneous character of housing investment. The net additions to the housing stock comprise only a part of the housing investment. A substantial share of the resources that go into housing consists of extension, additions and replacements. There is a constant process of upgrading which is taking place, semi-permanent structures are being converted into permanent structures; amenities are improved; the increase in the number of rooms is leading to more specialised use of space. The increase in the average number of rooms per housing unit during the period 1971-81 alone amounts to the equivalent of 500,000 housing units of the size in 1971. These additions evidently become a substitute for new housing units, particularly in situations where new households are formed and are accommodated in the

initial phase in one of the parental housing units. Similarly, replacements of the old housing stock do not seem to be taking place through a simple process of demolition of the old unit and construction of a new one. Improvement, renovation and upgrading seem to substitute for the wholesale replacements, particularly in the category of permanent housing.

These processes by which housing needs are satisfied both in terms of additional space and enhancement of quality, are very important for a low income country; they form an integral part of improvement and adjustments for problems of shelter for a large part of the population. However, this very important part of housing investment has often been ignored both in the estimates of housing demand as well as in national housing strategies. It has received low priority in lending policies. A housing strategy directed at the housing needs of the mass of the population must support these processes and incorporate them into investment programmes. The virtue of the Million Houses Programme is its flexibility which enables it to give an important place to this component.

Although in terms of volume of housing output it would seem that the outcome for the ten-year period was fairly satisfactory and that the growth of the housing stock outpaced population growth in both the rural and urban sectors, when we project the trends of the 1971-81 period into the future, we find that the rate of transformation of the housing stock measured in terms of improvements in structure, space and amenities, is as yet very slow. The analysis in Chapter 2 shows that at current rates, it would take about 50 years before the entire housing stock enters the permanent category. Similarly, it would be several decades before the total population will be housed in units with two rooms or more. The provision of basic amenities such as toilets presents prospects which are even worse.

Overall Objectives and Socio-Economic Profile of Housing Needs

The main objectives of the proposed National Housing Strategy for Sri Lanka are twofold. First, it has to create the market conditions, provide the incentives, and facilitate the flow of resources which

augment the supply of new housing to meet the needs of the new households. Second, it must accelerate the upgrading and transformation of the housing stock in order that housing of adequate quality is available to the population as a whole.

Over the period 1981-91, the output of house construction to satisfy both replacements and new demand has to be in the region of 1.6 million units. But apart from the new housing units there would be further investment undertaken on upgrading, structural improvements and additions, and extensions to existing housing units. The aggregate data which is available do not enable us to quantify this separately. It is, however, clear that the changes in the structural mix of the existing output as well as the increase in the average number of rooms, reflect a considerable volume of such incremental investment. The housing strategy needs to define and articulate this component more clearly, promote a much faster rate of transformation of the country's housing stock as discussed in Chapter 2 and set medium and long-term targets towards this end. The long-term improvements in the quality of housing should be projected in terms of a quality index of the type indicated in Chapter 2.

A particular level of improvement in the quality of the housing stock has associated with it a rate of transformation of the stock. Since the quality of the stock is dependent on housing features, improved quality over time implies improvement of features at a particular pace. For instance, for the housing quality index to reach 75 (out of an ideal of 100) by the year 2000, structure, amenities and space must improve. For the structure index to reach 75% of the ideal within this time-frame, the rate of transformation will have to be more than one and a half times as large as the average for the 1971-81 period (see Chapter 2). Setting targets for housing quality that are to be achieved within a given time-frame will therefore imply that housing transformation will take place at a certain rate. The transformation rates indicate the possible quality improvements over a given period of time.

The majority of the housing output indicated above, both in terms of new units and upgrading of existing ones, will be made by households in the low income and lower middle income categories. In terms of the socio-economic data in the Central Bank Socio-

Economic and Consumer Finance Survey of 1981/82, they belong to the six income deciles from the second lowest to the seventh. Their incomes ranged from about Rs. 500 to Rs. 1,500. The large number of housing units with one, two and three rooms in the 1971-1981 period were constructed by this group. As we observed in the housing survey discussed in Chapter 5 while size of house generally increased with increase of income, there was a significant number of housing units of the smallest size occupied by households with the higher incomes in this sample. At the same time, households with lower incomes were in occupation of the larger housing units in this category. If the improvements in housing quality which are targeted above are to be achieved, the large majority of the new housing units constructed for these six income deciles will be two and three roomed houses. It is also the households in these deciles which will undertake the bulk of the upgrading, structural improvements and extensions, as it is for this group that the transformation and improvement in the quality of housing is a strongly felt need.

The bulk of the householders in these low income and lower middle income categories have had to rely very largely on their own resources. Their housing investment illustrates the processes of incremental investment and diverse adjustments to their housing situation that have been described. While a small minority of them have benefited from state-sponsored programmes and housing schemes, most of these groups have had little access to institutional lending. It is mainly to these that the Million Houses Programme will cater. This component of housing investment, therefore, assumes the highest priority. Housing strategies have to be directed at promoting savings and facilitating the flow of required financial resources. The productivity and efficiency of the informal housing construction sector which services this component has to be improved. Individual home builders in this category have to be serviced adequately. The research and development effort in housing for improvement in design and low cost technologies which both improve quality and reduce costs, must focus primarily on the needs of this household segment. Many of the issues of financing, the state's role in housing, and the house construction industry have been discussed in this perspective.

Below this large bulk of investors, that is, the low and lower middle income households is the 10 % which constitutes the lowest income decile with incomes below Rs. 500. This would constitute a mixed group, including new families who are sharing housing units, as well as severely disadvantaged households who do not have the capacity to make any significant investment in housing. In the top three deciles, one is likely to find two groups of house builders. One would be the urban middle class with limited resources who have acute problems of mobilising finance at their income level for the type of houses demanded by them. The second group would be those who either have adequate resources of their own to invest in house building or are sufficiently credit-worthy to borrow from banks and other lending institutions. For the urban middle class, which has acute problems of housing finance, the housing strategy must include policies and financing measures which are specially directed to support this group. These would include improvements in institutional lending, and programmes of house developers targeted to this group. The top 30 % would be the socio-economic group living largely in urban and semi-urban areas and occupying housing units which are permanent structures built according to modern designs.

These figures indicate the broad dimensions of the pattern of demand in the housing sector. But within these components of housing output that have been enumerated, there are other priorities which have to be emphasised. In the housing strategy for the next ten years, there are three disadvantaged segments which have to be selected for action on a priority basis. These are the slum and shanty communities in the urban sector, the resident working population in the estate sector, and the bottom two income deciles in the rural sector. The first two segments have been clearly identified and their location is known. Programmes have been formulated to deal with their housing problems, although as we shall see later, these are as yet very limited in coverage when considered in relation to the needs that have to be satisfied. In the case of the rural poor, the deprived groups are dispersed in the entire rural sector. They would consist of households with very poor access to productive assets such as land. They would also include casual landless labour and encroachers on state land who are unable to participate in state-sponsored programmes of irrigation and agricultural settle-

ments. In all these three groups, the resources which the households can command are not adequate to make any significant dent on the problem. The state has to move in and support these households in a substantial way. At present there isn't evidence of a comprehensive public programme for this segment of households. However, including a large proportion of such households in the present public housing programmes, which expect partial cost recovery through loan repayment by beneficiaries, will seriously weaken these programmes. It is essential, however, to keep the equity considerations in housing policy in clear perspective. In the attempt to provide widespread access to basic housing, through direct public sector initiatives which contain an important subsidy element, the absolutely disadvantaged groups cannot be ignored. Therefore, those households which are unable to participate even in heavily subsidised public housing programmes, will have to be addressed through specially designed programmes.

Urban Housing and Urban Development

The diverse housing problems of the urban sector would require the close coordination of urban development policies with housing policy. This has been facilitated by the present Ministerial structure where Housing, Local Government and Urban Development are brought together. This aspect of coordination between housing policy and urban policy as a whole would need to be taken into account and further strengthened for the future.

It is in the Colombo urban sector that the most urgent problems are encountered. Both the slow rate as well as the pattern of urbanisation in Sri Lanka have been moderating factors in the housing situation. We saw that the urban sector, including that of Colombo, has expanded very slowly and its share in the total population has declined in the period 1971-81. The growth of the Colombo city has been even slower, resulting in the relatively rapid urbanisation around the city and the dispersion of residential communities in the neighbouring areas. Policies relating to urban development would have to draw on past experience and the way in which this unique rural-urban balance as well as the expansion of the Colombo area have been able to avoid the high concentration of urban population.

Although urbanisation has proceeded at a slow pace in the past, future developments are likely to accelerate this pace. By the end of the 1990s the land resources which sustained the massive re-settlement programmes in the past four decades would have almost entirely been utilised, leaving little room for continuing this process and transferring the population to new settlements. The structural changes that are taking place in the economy will themselves lead to a higher rate of urbanisation. There is, therefore, need to cater to urban housing demand in a variety of ways.

Current policies contain many of the elements which make it possible to retain the rural-urban balance. We observe that the urban growth has been highest in the medium-sized towns. At the same time, the trends in internal migration, including national policies for resettlement of the population, have helped in producing this dispersed pattern of urbanisation in medium-scale urban centres. Present urban development programmes for Colombo are geared to develop the infrastructure and property for residential communities in areas outside the main concentrations. Urban development policies must, therefore, facilitate the urban transformation in an outward direction. These policies are linked to a medium and long-term strategy regarding the development of the urban sector in Colombo. Such a strategy must maintain a balance between high-density construction on high-value land in the city centres, on the one hand, and "decentralisation" of the residential administrative and other functions to relieve the pressure on the centre, on the other. Many of the objectives set out already guide the approach to urban planning adopted by the UDA. At this stage what might be needed is an appraisal of current initiatives and future plans to ensure that they are properly aligned to these objectives.

Problems of slums and shanties in the Colombo city

There is need to adapt and modify some of the current approaches to the problem of shanties and slums. An important criterion in working out the optimal solutions for the problems of slums and shanties would inevitably be the ratio of the value of land to the value of the buildings located on it. A medium and long-term plan for the transformation of the Colombo city will have to pay serious

attention to this aspect. It would have to facilitate the shifts in the pattern of land use, the concomitant changes in the built environment and the way in which low-value structures on locations which are rapidly rising in value would have to be replaced. Such a perspective requires some adaptation and modification of the approaches to the upgrading of slums and shanties. This means that upgrading would have to be appropriately balanced with relocation.

There is need for a realistic mix of the types of housing in high-density urban areas such as the Colombo city, where increasing demand for housing continues to press on scarce land resources. In such a mix a component of apartment buildings would have a place. Such a component, however, would require investment either by the state or by property developers. In the latter case, the legal and financing framework should facilitate such investments. It could be possible for property developers to use some of the financing mechanisms used by them at present, such as advances from prospective buyers.

Another interesting feature of urban housing is the significant proportion of households with home businesses. These cover a wide range of income-earning activities which can be conveniently located in a part of the house. These arrangements have enhanced the capacity of households to finance housing expenditure and investments. Urban and housing policies should, therefore, take account of this phenomenon and facilitate such activities without unduly restricting them, when imposing conditions and regulations that are essential for residential zones. This also applies to public sector rental housing.

Transforming the housing stock in the rural sector

The problems of rural housing are of an entirely different character. They do not relate so much to additional residential accommodation as the upgrading of existing stock and provision of amenities. The study draws attention to the growing demand in the rural sector for permanent housing. This would have its repercussions on housing finance as well as on the construction industry. The housing investment in the rural sector will move progressively

from the non-monetised informal types of financing and the self-help type of construction to more formal types of borrowing and to construction which makes a demand on skilled labour and permanent materials. National housing policies and the financing system for housing would have to be attentive to this perspective. For example, the changing conditions could demand a more active role for the rural banks.

The housing strategy must also identify more clearly the pockets of poor housing in the rural sector and regional disparities in the availability of amenities such as water and sanitation. Chapter 3 discusses this aspect.

It would appear that the housing stock which has the lowest proportions of permanent housing units are in the districts of Matale, Hambantota, Vavuniya, Mullaitivu, Moneragala and Anuradhapura. In the distribution of state effort and the allocation of resources for housing these areas should receive priority. The low quality of the housing assets that are revealed in this analysis may be also an indicator of the general social and economic conditions in these areas. In such a situation the improvement of housing would have to form part of an integrated rural development effort.

As with urban housing, investment in housing in the rural sector includes a wide variety of housing activities. Upgrading, renovation and extensions and additions probably figure to a larger degree than the urban sector. The current housing policies which allow for a wide range of options in regard to housing investment is, therefore, in the right direction.

The study draws attention to the role of new settlements in the Mahaweli project in the demand for new house construction in the rural sector. The Mahaweli area, according to rough estimates, will produce approximately 30 to 40% of the new housing units required, over a period of 15-20 years. The Mahaweli Development programme also looks after the financing of the housing investment through resources generated by the project itself. It must be noted that this component of housing falls outside the Housing Ministry. This has to be taken into account in the national housing strategy and in the allocation of resources for housing.

Estate Sector

The Estate Sector contains the segment of the national housing stock which is the lowest in quality. It has the lowest proportion of permanent housing and the highest proportion of one-room units. With the transfer of the large plantations to the state, under the Land Reform Law, action has been taken to improve the housing conditions in this sector. But at the current rate of improvement the transformation of this housing stock would take an inordinately long period. The housing problems in the Estate Sector, therefore, call for new and more innovative strategies. One element in such strategies would be to develop residential settlements in which aided self-help housing programmes can be implemented and where eventually it would be possible for occupants to own their housing units.

Land for Housing

What has been said in regard to urban housing indicates that the policies in this area are intrinsically linked to the management and use of urban land. It is in the urban sector that the problem of land for housing manifests itself in all its complexity.

The changes in the pattern of land use and, consequently, the distribution of the residential population is part of the larger strategy for urban development and urban transformation. Within this there are several components which require attention—first, the augmentation of the supply of land in urban areas; second, the more efficient and intensive use of available land, and third, the nature of urban planning which can cope with the problems of the rising demand for land in the main urban locations.

The first set of issues highlights the importance of long-term planning for the reclamation of land around the Colombo region. A clearly thought out reclamation programme will take into account who will use the land and the purpose for which it will be used. Therefore, reclamation will have to fit with the plans for urban development. Meanwhile, such activity will have to pay heed to costs of reclamation and recovery of those costs. A systematic and intensive effort has to be undertaken for the identification of all available

land belonging to the state, and such land has to be properly inventoried. Finally, an integrated policy for managing the supply of land for urban housing cannot neglect the considerable extent of vacant private land which is not being released to the market for a variety of reasons. This includes both land with disputed title as well as large extents of unused land available in residential premises. The former calls for a comprehensive state programme for clearance and registration of title. One method would be to vest such land in the state and compensate owners who could establish their claims in court for a special agency established for the purpose. The second problem may call for special disincentives, such as a wealth tax, which will induce owners to release such land to the housing market.

Several other issues which have relevance for land policies relating to urban planning have already been discussed under urban housing. The further development of secondary urban centres and residential sites outside Colombo is an essential element. The government's proposals for the collaboration of the NHDA with private sector house and property developers in the development of suitable residential sites outside Colombo have to be given priority in urban planning. Along with them, the Land Bank of the NHDA could be enlarged in scope and developed as an effective mechanism which can help to acquire and stock land in areas which are designated for development and to regulate the market for urban land. Both the Land Bank and property developers could become commercially viable ventures which can be undertaken on a systematic and planned basis by the NHDA.

The problems of urban land are wide-ranging and complex and call for a variety of measures. The custody of land and the responsibility for its use and development is distributed among a large number of state agencies. The institutional framework that has been developed in the recent past provides the scope for formulation and implementation of a comprehensive land policy for urban housing and urban development. It would, therefore, be useful if a working group or task force is assigned the responsibility of examining the urban land problems in all their diverse aspects and recommending a coordinated set of measures which cover the various issues that have been raised.

Housing Needs and Housing Investment

The forecasts of housing needs in Chapter 4 do not vary very widely from other estimates that have been made recently in regard to housing needs for the next ten years. All these estimates appear to hover around the figure of approximately 1.5 million housing units for this period. Such an estimate also seems to be consistent with the volume of house construction that was witnessed at the beginning of the 1980s according to the data recorded in the 1981 Census.

The methodology used in the study is different from what has been used in most of the available forecasts. It uses a number of variables which have relevance for policy, in addition to the variables conventionally used. It is based primarily on the demographic variables of net family formation and takes into account inter-generational arrangements of sharing, as well as transitional forms of improvised housing that are likely to continue in special situations such as new settlements. The forecasting method is capable of further refinement.

What is given in the estimates is the numerical total of the housing units that would be required, regardless of their size and structural quality. When we use the volume and the mix of the housing output which the Census give for the year 1980, we can draw fairly reliable conclusions regarding the capacity of the system to finance the housing investment needed.

The analysis of investment needs in Chapter 8 has attempted to define the macro-economic limits within which housing investment has taken place in the past and would have to take place in the future. It is important for housing policy to relate itself to a macro-economic framework of this type. From past experience it would seem that housing investment amounted to approximately 4 to 5 % of GDP. It will be seen that housing investment has been growing in the recent past at the rate of approximately 5 to 6 %. What is of special interest in regard to the trends in housing investment is that even during the first half of the seventies when the rate of growth of the economy had declined sharply, housing investment had not suffered a serious setback and housing output had grown at a steady pace. This is reflected in the census data on new house construction during 1971-75. While it is true that the rate of house

construction accelerated in the latter half of the seventies new house construction grew at a fairly even pace over the whole period.

Houses have been built and have apparently been produced in all income categories, particularly as the large share of the increment to the housing stock falls into the category of housing with one and two rooms. There has also been a considerable degree of upgrading of houses and this has taken place largely in the low-income housing stock where houses have been upgraded from the semi-permanent to the permanent category. There has been a drop in the one-room housing units and an increase in the share of the two and three-room units. All these go to indicate that housing investment has been taking place in all income categories. This contradicts the evidence of some of the socio-economic surveys which suggest that housing investment is beyond the capacity of most households.

Furthermore, the trend in house construction in the mid-seventies leads one to the conclusion that the large increase in the public sector investment in housing was not an indispensable condition for the growth of housing investment. To some extent these investments would have substituted for private investment which would have normally taken place. This has important implications for state policies. It indicates that state investment in housing plays a relatively minor role in terms of volume and that if it is to be effective, it has to assume a catalytic role which supports and accelerates private investment flows.

If we assume the volume of state investment will continue at the level that has been projected in the 1983-87 programme of investment—i.e., the level considerably scaled down from the 1978-83 level—we can examine whether a continuation of the trends in housing investment that we have witnessed in the private sector will be able to cope with the demand for housing in the next ten-year period. These projections indicate that if investment continues at the present level—i.e., around 5 % GDP—and housing investment continues to grow at a rate of approximately 5 %, then the housing output which is produced on the basis of the 1980 volume and mix will be able to cope with the needs. The investment will allow for a significant improvement of housing quality over the 1980 mix, after satisfying the quantitative needs on 1980 norms.

The chapter on finance provides an indicative estimate of the share of resources that might be available for quality improvement assuming that housing investment will grow in real terms according to rates that appear to be feasible. These macro-economic and financing parameters need to be clearly defined in the national housing strategy, and the goals and targets for new housing and the structural transformation of existing stock set realistically within these parameters. The different elements of the housing programmes at present, whether they be the Million Houses Programme, slum and shanty upgrading, or lending for middle class house construction, are as yet not conceived and brought together within such a framework.

The possibilities for improving the system of housing finance in a number of areas are varied. Institutional lending by itself is limited in its reach and caters only to the credit-worthy middle-income house builders. If it is to reach further, it would have to adopt more innovative approaches such as the contract savings account of the People's Bank or an adaptation of the Bank of Ceylon's schemes. The study also discusses the scope for including the Employees' Provident Fund in a small part of the housing finance system in a manner which will be of mutual benefit to the fund as well as to the house builders. The procedures that are followed by some of the banks, particularly the State Mortgage and Investment Bank, to tailor lending to the capacity of borrowers and their individual needs and adapt the terms of repayment accordingly, provides an example of what could be done in this field to stretch the available resources to capacity. Capacity to borrow is linked to the present income levels of the borrowers. Modifications of lending policy which take account of the increasing incomes of borrowers would be able to bring the lending within reach of a larger group. When this is taken into account there are several possible permutations and combinations and innovative adaptations of lending policy. These are discussed in the chapter on finance. There is scope for extending the reach of institutional lending by including rural banks in the network. To do this it would be necessary to free them of existing constraints regarding collateral and recoveries. In all these areas there is scope for evolving a flexible system of housing finance which would call forth more household savings for housing investment.

Institutional lending would also need to emulate the example of the state programmes in so far as the range of housing investments is concerned. Housing investments on additions to existing homes, extensions, construction of annexes which are not new housing units, have probably been a significant means of satisfying new housing demand. Institutional lending policies would have to adapt to these needs.

A rationalisation of the financing system of housing must also consider the feasibility of a proposal which has been mooted on several occasions—i.e., a specialised banking institution in the field of housing with resources mobilised through a contributory housing development fund. Some of the essential features of such a fund are briefly commented upon. The virtue of an apex institution of this nature is that it could promote housing finance, help in the coordination of lending policies in this field and see that the various activities of savings institutions and agencies lending for housing are mutually supportive of national objectives.

The Role of the State in Housing Investment

Several chapters deal with various aspects of the public sector housing programme and the role of the state in housing investment. We saw that many of the programmes could not achieve the objectives they set for themselves to reach particular target groups of beneficiaries owing to the heavy escalation of costs. This was partly due to the rapid inflation experienced in the economy as a whole as well as the shortcomings in implementation and cost control. Some of the programmes such as the Model Village programme appear to have had an important demonstration effect in mobilising the housing effort on a national scale, but in terms of cost per unit they were not widely replicable as schemes within the reach of average rural households.

In macro-economic terms, the housing investment imposed heavy burdens on the government budget, which was running into massive deficits and a large volume of expansionary financing. Housing, unlike other government capital projects, had to rely almost exclusively on domestic financing and, therefore, had the

effect of aggravating the budgetary problem. (The U.S. Housing Guarantee Loan came at the end of this phase of heavy investment).

The major reorientations in the housing programme have taken into account the problems and shortcomings of the public sector investment in housing during the 1978-83 period. The public sector investment in housing is now seen essentially in terms of two objectives.

One deals with segments of the housing sector where housing needs are acute and where the households cannot cope without state support and intervention. This part of the state's activities will include disadvantaged groups such as slums and shanties and the resident workforce in the estate sector. Second, the major financing role of the state is expected to be a catalytic one, as stated earlier, that of stimulating and facilitating household investments in housing. The programme of a million houses contains many of the elements of a flexible system to perform such a role. It operates in a manner which stimulates supplementary savings of households and caters to all components of housing demand.

The new programme has drawn on the most cost effective elements of the 1978-83 programme. The budgetary allocations have been scaled down. The state has withdrawn from large-scale construction of new units. It finances housing investments for low-cost housing for a wide range of options which cater to the different housing needs of households. The programme, consequently has a much wider reach. The present Million Houses Programme can, therefore, lead to the type of low-cost solutions which have been discussed earlier, core housing, extensions and additions, upgrading. As it focuses on low-income groups, the housing investment will lead to a faster rate of transformation. Its impact, however, has to be carefully assessed.

First, the programme is providing 'bridging finance' as it were, for a process which is already taking place at all income levels. The total volume of lending will not exceed approximately 10% of the national investment on housing. The performance has to be examined to find out whether the programme is augmenting the flow or whether it leads to substitution. Second, the investments are widely dispersed in small amounts for diverse purposes. It is

necessary to ascertain whether borrowings are fully used for the purposes for which they are obtained. If the state's catalytic role is to be effective, the lending has to be selective, assigning priority to such items as financing of core houses, supplementary finance for completion of new housing units, additions and extensions which, given the conditions of the borrowing household, would ease congestion and substitute for new housing; structural alterations which upgrade the unit from the present semi-permanent or improvised condition; provisions of urgently needed amenities such as water and toilets. There has to be some order of ranking in the criteria used for lending, and these might be related to some targets and apportionments related to each of the criteria mentioned above. Judged by these criteria, the processes of lending tend to be rather indiscriminatory. Third, past experience indicates that state lending to low-income households has posed intractable problems of recovery. The agricultural credit schemes are a glaring example. A system of regular evaluation of performance of the Million Houses Programme is, therefore, a task of high priority.

One of the basic problems with the state sector concerns the recovery of its investments. This has received attention in the Million Houses Programme. Attempts have been made to devise forms of collective responsibility for repayment through the local institutions such as Gramodaya Mandalayas. The Thrift and Credit Co-operative Societies, TCCS, which operate in the rural sector, have been chosen as the financial institutions that will assist in the implementation of the rural sub-programme of the MHP. Many new TCCS will have to be established and existing ones developed in order to implement the MHP successfully. The recovery of loans is to be entrusted to these institutions under the supervision of the Gramodaya Mandalayas. The previous experience of the TCCS has been in granting small loans with a relatively short term. Administering a new component of lending with longer repayment terms could strain the capacity and viability of these organisations. In order to ensure efficient performance in loan recovery the TCCS may need assistance. It is conceivable that if strained, the TCCS will shift the burden of recovery and administration away from themselves. The strength of these institutions in granting small loans may not be matched by their capacity for organising and

administering recovery. The record on recovery so far, based on NHDA-sponsored pilot projects, is reassuring. However, a set of clearly worked out and tested sanctions and controls is urgently required in order to maintain this performance on a much larger scale.

The problem of recoveries would also apply to a significant part of the rent-purchase schemes in the middle income categories in the urban sector. It would be useful to explore whether tripartite arrangements could be made for a bank, such as the State Mortgage and Investment Bank to take over the outstanding liabilities. Under such arrangements occupants could be granted loans to acquire the property, the state could thereby recover the total sum due through these loans, and the bank could effect normal recoveries on loans for which the houses would be given as collateral. Some such radical change in the recovery system is called for if the state is to recover the large amount of capital which is tied up in the houses which have been built and given on rent-purchase or on rent. The recovery of this capital could lead to a substantial replenishment of the state funds that are made available for housing.

As the urban component of the Million Houses Programme gets under way, serious consideration will have to be given to the role of local authorities, Municipal and Urban Councils, in promoting housing development. At present the local authorities play a small and almost insignificant role in housing development. The recent public sector housing programmes have bypassed these bodies which have statutory powers to collect property taxes and provide a range of civic amenities. To facilitate the capacity for decentralised decision-making these local authorities should be developed and actively promoted. The MHP presents a good opportunity to involve local authorities more actively in housing development.

The Construction Industry and Housing

The efficient use of resources for housing would depend a great deal on the productivity of the house construction industry and its capacity to offer the most cost-effective solutions to the current housing problems. The massive increase in the state investment programmes in all sectors has made inordinate demands on available

manpower and other resources in the construction industry as a whole. The steep increase in the high-cost investment programme on housing undertaken by the state, put great pressure on the housing component of the construction industry. Prices of materials and cost of labour escalated sharply, the latter partly due to the outflow of construction skills to West Asia. Despite these problems, the industry has been able to adjust to the increasing demand and to step up the supply of both labour and material.

There are several special features of the house construction industry which influence its productivity and output. One such feature is the reliance on the small-scale contractor who is responsible for the bulk of house construction. Along with current programmes which are directed at the supply of trained craftsmen and skilled workers in the construction industry, attention should be directed at improving the managerial and technical skills of the large cadre of small-scale contractors. The informal character of the house-building activity throws a great burden on both the small-scale contractor and the individual house builder. There is considerable scope here for state-sponsored initiatives to improve the skill and the productivity of these key participants in house construction. The chapter spells out some of the possible measures that might be taken in this area in the form of appropriate training, basic technical and management handbooks, and other similar initiatives for upgrading the sector.

Another urgent task is the development and dissemination of low-cost housing technology to meet the needs of the large majority of low-income house builders who are able to invest only in one and two-room housing units. There are various economies that could be effected from the foundation to the roof of a small housing unit. The research and development in low-cost housing technology has already begun work on a number of promising lines for both the substitution of low-cost materials. These efforts need more resources and more systematic sponsorship from the state. Attention has also been drawn to the need to apply engineering and architectural skills to improve the quality and comfort of the low-cost house. Well-designed improvements in a few critical elements of the house relating to heat, insulation, light, ventilation and

arrangement of space within the house make a significant change in the quality of the small residential unit which is within reach of the low-income household.

In regard to the quality and supply of local building materials, an organised effort is needed to improve the quality of the local brick industry by promoting the use of kilns of better design and improving the skills of the manpower now engaged in the industry. Problems relating to the irregularity of supply of such materials as brick and sand require investigation. These interruptions in supply result in significant cost-increases. Regularity of supply would require both a build-up of stocks which can even out the seasonal variations in supply, as well as improvements in supply during the seasons when production takes place. It would be necessary to examine why the market does not function at present to enable this process to take place and to take action to create the conditions which promote such a process.

The Administrative Structure

The administrative structure and the organisational framework for housing have evolved over the years. In the post-1977 period it has had to develop the capacity to cope with an enormous increase in its work load. The demands that were made on the administrative system during the 1978-83 period were, therefore, of a radically different character from what was required of the system in the pre-1977 period. We have seen how this has had a mixed outcome. The new allocation of ministerial functions has made it possible to coordinate policies over a wide field encompassing both housing and urban development. Two new important institutions were created during this period—the National Housing Development Authority and the Urban Development Authority.

On the other hand, the enormous increase in the housing programme resulted in many ad hoc adaptations and improvisations and in the sharing of work which to some extent cut across the rational allocation of functions. The manner in which the Ministry has acquired a wide-ranging capacity for dealing with the diverse problem of housing and urban development enables it now to take the process of rationalisation further.

The present framework provides scope for the organisation of the main clusters of activity around the two major institutions—the National Housing Development Authority and the Urban Development Authority. The Ministry of Local Government, Housing and Construction could also internalise the capacity for in-depth evaluation of housing policy and housing investments. The Ministry hitherto has been receptive to critical evaluation and reappraisal of its programmes and has mobilised external expertise for this purpose. It is opportune now to build this capacity more firmly into the Ministry itself. There is, perhaps, need to supplement the present capacities with a small component which devotes itself to the macro-economic analysis of housing policy and housing investment. Priority should also be given to establish well-defined criteria and carefully considered priorities to guide the process of decision-making in such areas as the selection of beneficiaries, the allocation of resources to different programmes and to different regions, and recovery procedures.

The Need for a Comprehensive Housing Strategy

In this context, there is need for a clearly articulated comprehensive national housing strategy and plan which brings together the various elements which have been discussed. These elements—whether they be urban housing and urban development, housing, land policies for housing, housing of disadvantaged groups, upgrading of the house construction industry, and training research and development—are present in different programmes of the Ministry. These, however, have not been conceptualised and formulated as yet as a medium-term national housing plan or a comprehensive national housing policy in which the targets of housing development are set in the form discussed earlier, and in which all the components mentioned are clearly seen in the interrelationships and made mutually supportive and consistent for achieving housing objectives. While the Million Houses Programme has integrated many of the elements of such a policy, it necessarily confines itself to a part (though the major part) of the housing demand. Problems of urban housing and urban development which should command high priority, critical aspects of financing and land management, programmes for severely disadvantaged groups, are some of the aspects that lie outside the ambit of the Million Houses Programme.

Housing and Development—Some Broader Issues

The role of housing in development needs to be examined more carefully as many of the current assumptions regarding its non-productive character and its limited contribution to economic growth do not appear to be based on a sound understanding of all the interrelations between housing and economic growth.

First, it is probable that housing investment will generate savings which are not likely to be available for other purposes owing to its special character and the satisfaction it provides for a specific set of needs. This is seen in the processes by which resources are mobilised for housing investment. These include the incremental nature of the savings made for housing investment over a period of time; the motivation provided by housing as the largest single household investment on a consumer durable; the way in which resources are mobilised from different sources; the way in which households go into occupation of incomplete houses and are satisfied to go through an incremental process of house-building.

Second, housing directs the expectations of households and their pattern of demand to the improvement in the quality of life. As has been pointed out often, this may have a positive impact in generating economic activities and employment in several areas where local supply capacity is available such as construction materials, furniture and other utility consumer durables for low-income and middle-income households. The nation-wide campaign for the improvement of housing which has been spearheaded by the Housing Ministry and given high visibility through the personal leadership of the Prime Minister, could, therefore, have far-reaching effects which are not easily quantified in the conventional economic analysis.

The rationale for state investment in housing would lie in the achievement of some of the objectives which have been outlined above. The housing experience in Sri Lanka and the range of projects undertaken offers a vast amount of useful material for careful empirical investigation of the social benefits and costs of housing. This would be a valuable exercise for housing planners as it could provide the basis for defining more clearly the role of housing in the economy and the social infrastructure as a whole.

APPENDIX I

DERIVATION OF THE LIMITS OF UPGRADED NUMBER OF HOUSES

Let the change in the stock during a period be equal to the volume of construction minus the net loss to the stock—

$$SCH = C - NL$$

$$NL = (D - U) \quad \text{where } U \text{ is entry to component category of the stock through upgrading and } D \text{ is loss due to demolition or depreciation}$$

$$SCH = C + U - D$$

This expression is used for the three components of the stock

$$SCH_p = C_p + U_p - D_p \dots\dots\dots(i)$$

$$SCH_{sp} = C_{sp} + U_{sp} - U_p - D_{sp} \dots\dots\dots(ii)$$

$$SCH_i = C_i - U_{sp} - D_i \dots\dots\dots(iii)$$

Where SCH is stock change

C is construction volume

U is upgrading volume

D is retirement from stock

Subscripts p, sp, and i refer to permanent, semi-permanent and improvised housing respectively.

Improvised units are assumed to be not upgraded directly to the permanent category.

Adding expressions i, ii and iii we obtain

$$SCH_p + SCH_{sp} + SCH = C_p + C_{sp} + C_i - (D_p + D_{sp} + D_i) \dots\dots\dots(iv)$$

$$\text{Therefore } SCH_T = C_T - D_T \dots\dots\dots(v)$$

where T refers to total stock the sum of p, sp and i.

The values of SCH and C values are known for all three components.

From equation (i) $U_p - D_p$ is obtained

$$U_p - D_p = SCH_p - C_p$$

Since $\min D_p = 0$; $\min U_p = SCH_p - C_p$

If $U_{sp} = 0$ i.e. no improvised units are upgraded to the semi-permanent category then from (iii).

$$\max D_i = C_i - SCH_i$$

Using equation (v), $\max D_{sp} = C_T - SCH_T - (C_i - SCH_i)$

From equation (iii) $\max U_{sp} = C_i - SCH_i$

$$\begin{aligned} \max (U_p + D_{sp}) &= (C_{sp} - SCH_{sp}) + \max U_{sp} \\ &= C_{sp} + C_i - (SCH_{sp} + SCH_i) \end{aligned}$$

Using equation i, ii, iii and v maximum values for D_p , D_{sp} , D_i and U_{sp}

Because $\max D_i = C_i - SCH_i$

$$(D_p + D_{sp}) \geq D_T - (C_i - SCH_i)$$

Now the upper and lower bound estimates for upgrading and demolition of the stock can be obtained.

APPENDIX II

Deriving the Relative Rate of Transformation RRT

Consider the two expressions below :

$$ST_{t+n} = ST_t (1 + R_T)^N \dots\dots\dots (i)$$

$$S_{jt+n} = S_{jt} (1 + R_j)^N \dots\dots\dots (ii)$$

Where ST is the total stock of housing

S_j is the stock with characteristic or feature j

R_T annual rate of growth of the total stock

R_j annual rate of growth of stock with characteristic j

t is the initial year

N growth period in years

The two expressions indicate that the initial stock will grow at a given rate and the new stock after N years is obtained by i and ii,

Dividing ii by i.

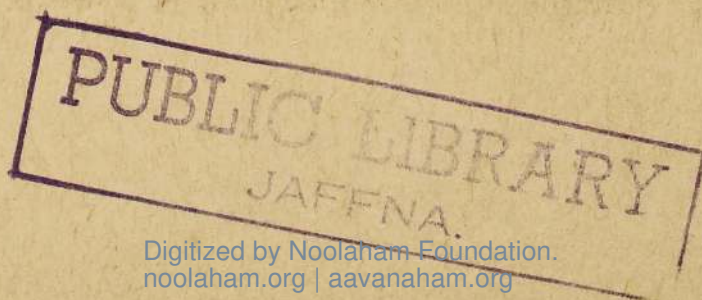
$$\frac{S_{jt+n}}{ST_{t+n}} = \frac{S_{jt}}{ST_t} \left[\frac{1 + R_j}{1 + R_T} \right]^N \dots\dots\dots (iii)$$

Let $K_{jn} = \frac{S_{jt+n}}{ST_{t+n}}$ and $K_{jt} = \frac{S_{jt}}{ST_t}$

and $RRT_j + 1 = \frac{1 + R_j}{1 + R_T}$

Then expression iii is transformed to

$$K_{jn} = K_{jt} (1 + RRT_j)^N \dots\dots\dots (R)$$



This is a familiar growth equation; the proportion of housing with characteristic j at time t , K_{jt} ; will grow to a proportion K_{jN} after N years at an annual rate of RRT_j ;

From R an expression for N is obtained and is given by (s)

$$N = \frac{\text{Ln} (K_{jN}/K_{jt})}{\text{Ln} (RRT_j + 1)} \dots\dots\dots (s)$$

Where Ln is the natural logarithm.

The time taken for the proportion of the stock with characteristic j to change from K_{jt} to K_{jN} at RRT_j is derived from past rates of R_T and R_j and N is found for a specified K_{jN} . The value of K_{jt} remains constant because the initial values of S_{jt} and ST_t are known and are constant.

The same RRT can result from different combinations of R_j and R_T . Using a RRT derived from past average values of R_j and R_T does not necessarily imply that the same individual R_j and R_T obtain over the entire period of N years.

$$\text{Since } 1 + RRT_j = \frac{1 + R_j}{1 + R_T}$$

for RRT_j to remain constant say of value $C-1$, it is necessary that $(1 + R_j) = C(1 + R_T)$

$$R_j = CR_T + (C - 1) \dots\dots\dots (v)$$

which means that RRT_j will remain constant even with changing R_T and R_j if expression (v) is maintained. Therefore, knowing RRT from past values enables the estimation of N even if the stock and

its characteristic component under study grow at rates different from those used to calculate RRT, provided expression (v) holds.

The expressions (R) and (S) provide a convenient method by which to assess the behaviour of the housing stock over a sufficiently long period of time. If the RRT for characteristic j remains unchanged, the time taken for a given proportional change in the composition of the stock can be estimated. It is seen from expression (s) that for a specified K_{jN} (with K_{jt} already known) as $\ln RRT_j$ increases, N decreases, which is equivalent to the statement that given K_{jN} and K_{jt} , N is a decreasing function of the difference between R_j and R_T . For sufficiently small values of R_j and R_T the difference is equal to

$$\ln ((1 + R_j) / (1 + R_T))$$

Therefore $N = F (K_{jN} , (R_j - R_T), K_{jt}) \dots\dots\dots (vi)$

However, it may be such that the difference between R_j and R_T is related to K_{jT} and K_{jN} . For instance once K_{jN} has reached 1, $R_j = R_T$

In terms of policy, the information about the time needed to transform housing from one set of characteristics to another is of great practical value. For instance let us assume it is observed that on the basis of the 1971-81 performance, it would take a set of time spans

$$\begin{array}{l}
 N_{ijk} \quad i = 1 \dots\dots\dots n \\
 \quad \quad \quad j = 1 \dots\dots\dots m \\
 \quad \quad \quad k = 1 \dots\dots\dots p
 \end{array}$$

- Where i is the subscript for sector
- j is the subscript for the characteristic
- k is the subscript for the proportion of the stock

The measures can be used in this way not only for sectors but also for regions. Comparison of the time spans highlights the policy effort required for similar proportional change. For example, if the relative rates of transformation remain constant, in the rural sector it takes a set of times (N_{R1} N_{R2} N_{R3}) for three quarters of the stock to have at least water-seal toilets, brick or cabook walls and clay tiles or asbestos roofs. Meanwhile in the urban sector the corresponding time set is (N_{U1} N_{U2} N_{U3}). Comparing the two time sets indicates the differential effort required for similar proportional change.

APPENDIX III

Some Aspects of Regional Variation of Rural and Estate Housing

In 1981, only five out of the 24 administrative districts which span the territory of the country, had a *rural* population share which was less than the national average. Three of them, Colombo, Jaffna and Trincomalee had a high proportion of urban population, and the remaining two, Nuwara Eliya and Badulla, had a high component of estate population. Five districts accounted for over four-fifths of the estate population, which was 6.3 % of the total population.

The Rural Sector covered territory with a wide variety of agro-climatic features. The level of economic development in the Sector was uneven in the various districts. The data available for the Rural and Estate Sectors of the districts, preclude a complete discussion of the housing characteristics and their regional variations. Therefore, the full set of housing characteristics discussed in terms of the total stock and its sectoral components cannot be examined in the case of the districts. However, the variations in the subset indicate the nature of regional variation in housing characteristics.

Materials of the Structure

Among the different districts, the proportion of occupied houses with mud walls ranged from a low of about a third to a high of over two-thirds. Of five districts that had the low proportion two had high urban population proportions, Jaffna and Colombo; and two had high estate proportions, Nuwara Eliya and Badulla. The districts with a lower rural population proportion had a lower proportion of houses with mud walls. The districts where the proportion of mud-walled houses was high in the Rural Sector had urban populations of less than 50,000 persons. They were Matale and Kurunegala in the hill country, Vavuniya, Anuradhapura and Polonnaruwa in the Dry Zone of the North Central Province and Hambantota and Moneragala in the southern Dry Zone.

The correlation coefficient between the proportion of houses with mud walls in the Rural Sector and the proportion of urban population was -0.74 for districts with an urban population of less than 50,000. Therefore for districts with a small urban sector the higher the urban population proportion the lower the proportion of mud walled houses. When the districts with an urban population of over 100,000 persons were considered, the corresponding correlation coefficient was much lower, -0.42 .

The Estate Sector stock had a high proportion of occupied units with brick, stone or cabook walls. However, two districts which had small estate populations, Matara 20,000 persons, and Kurunegala 11,000 persons, had over one-third and two-thirds of their respective estate houses with mud walls. In the districts which contained the bulk of the estate population, the corresponding proportion was less than one-fifth.

In seven districts, the proportion of the occupied housing stock in the Rural Sector with palm-thatch roofing, was less than one-third. These districts had either large urban or estate populations. Colombo, Kalutara, Galle and Kandy had a large Urban Sector while Nuwara Eliya, Badulla and Ratnapura had large estate populations. Jaffna which has the third largest urban population had nearly half of its occupied rural stock roofed with palm thatch. The districts with a high proportion of palm-thatch rural stock, over two-thirds, were Hambantota, Vavuniya, Mullaitivu, Batticaloa, Trincomalee, Kurunegala, Puttalam and Anuradhapura. Among these, Hambantota, Kurunegala and Anuradhapura had over two-thirds of the occupied rural stock made with mud walls.

The majority of the Estate Sector housing stock had metal sheet roofs. The districts with a high proportion of their respective Estate houses with roofing other than metal sheets had an estate population that was small in absolute number. The proportion of the rural houses with mud floors varied from a low of under 40% for the urbanised districts of Colombo, Gampaha and Kalutara, to over two-thirds for seven districts, all of which had low urban populations. They were Matale, Kurunegala, Hambantota, Moneragala, Anuradhapura, Vavuniya and Mullaitivu, all with less than

50,000 persons in their respective Urban Sectors. The floor material for the estate stock of the different districts followed the pattern observed for roofing materials.

The average number of rooms for the rural houses showed a wide variation. Four districts, all of them in the north and north-east, had an average of two rooms or less for their respective occupied rural stocks. These districts, Mannar, Vavuniya, Mullaitivu and Batticaloa also had high proportions of their rural stocks with mud floors and palm-thatch roofs. Half the districts had an average of 2.5 or more rooms per housing unit.

Amenities

The proportion of rural houses with access to piped water was low. Even in Colombo District only 2.1 % of the housing units in the Rural Sector had access to piped water. However, in four districts, Kandy, Nuwara Eliya, Badulla and Mannar, a significant proportion of the rural houses was serviced with piped water. The first three districts are in the hill country with a large estate sector.

Mannar District has benefited from a ground water resource that can be tapped through small pumps. The proportion of units which depend on rivers and tanks for water service, varied from over 15 % (for six districts, Mullaitivu 87 %) to under 5 % (for eight districts). The districts where the proportion of the rural housing stock serviced with tank or river water was high included three in the hill country and three in the Dry Zone.

In eight districts the majority of the rural houses did not have access to formal toilet facilities. Six of the districts, Jaffna 53.5 %, Mannar 80.9 %, Vavuniya 84.8 %, Mullaitivu 87.8 %, Amparai 73.2 % and Trincomalee 71.1 %, are in the north and north-eastern part of the country. In Puttalam and Anuradhapura districts over three-fifths of the rural stock had no formal toilet facility.

When a few of the characteristics of the Rural and Estate houses of the different districts are examined, the following pattern emerges. The rural stock of Matale, and Kurunegala in the Wet

Zone hill country, had structures of poor quality and poor access to toilet and water facilities. Anuradhapura, Vavuniya, Mullaitivu, Hambantota and Moneragala in the Dry Zone of the North, East and South had similar low rural housing conditions. Particular features of low quality in the materials of the structure and amenities were distributed unevenly among the different districts. Some aspects of housing quality were associated with the size of the Urban and Estate Sectors of the respective districts. Districts with a large urban population seemed to have 'better' quality rural housing stock. The size of the Urban Sector is an indicator of a particular district's economic strength. A large Urban Sector implies a particular economic mix not only within that sector but also perhaps throughout the entire district. Therefore, the Rural Sector in such districts could be considered to have a stronger economy and better housing conditions.

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