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SPACE AND THE GENERATION OF SOCIO ECONOMIC INEQUALITY ON SRI LANKA'S IRRIGATION SCHEMES[1]

M. P. Moore, F. Abeyratne, R. Amarakoon and J. Farrington*

Tops and Tails.

The recent burgeoning of social scientific research into the topic of water management in Sri Lanka and in a number of other Asian countries[2] is generating more sustained interest in the inequalities which have been observed between what are conventionally termed 'top-end' and 'tail-end' cultivators on irrigation schemes. No less useful for being imprecise, the 'top-ender' and 'tail-ender' refer broadly to the distance, on gravity flow irrigation schemes, between the farmer's irrigated plot and the point at which water is issued into the channel system. This distance is, everything else being equal (see below), a good indicator of the farmer's access to irrigation water.

For two reasons, 'top-enders' almost always obtain more water per unit of land than 'tail-enders,' and thus enjoy more success in their cultivation. The first reason is that the volume and pressure of water in irrigation channels is greater at the top ends. Even without any human interference, the harsh facts of hydraulics favour 'top-enders'. The second and related reason is that it is physically much easier for 'top-enders' rather than 'tail-enders' to poach or steal from the irrigation channels more than their allotted share of water.

1. The authors wish to thank the staff of the Agrarian Research and Training Institute's Water Management Project, especially C. M. Wijayeratne, for help with this paper, above all for permission to quote the statistics in Table 2. Christie Silva and Robert Wade made useful comments on an earlier draft.

2. The literature on water management in Sri Lanka is growing rapidly, although much is still to be found only in official documents or other papers not widely available. A useful general introduction to this topic for Southeast Asia is Taylor and Wickham, 1979.

Like so many other scientific categorisations, the 'top-ender/tail-ender' schema is more valid the larger the number of observations. It is not necessarily a good predictor of the water supply situation of each individual farmer. It is quite possible that an irrigated plot located near the very top end of a system should have a poor water supply. Conversely, some farmers located in 'tail-end' positions might enjoy a relatively good water supply. Such exceptions occur because distance of the field from the irrigation water source is not the sole determinant of access to water. Other factors such as topography, soil type, irrigation system layout and water management modify, but in no way neutralise, the effect of distance pure and simple. For fairly obvious hydraulic reasons, and as is demonstrated empirically below, the degree of relative disadvantage suffered by 'tail-enders' is proportional to the total size of irrigation schemes. In the Sri Lankan case, it is on large schemes such as Gal Oya and Uda Walawe where the plight of 'tail-enders' is most severe.

Most Sri Lankan irrigation schemes take the form of a storage reservoir from which water is issued through a main sluice (or sluices) to two (sometimes one or three) main channels. From there the water is delivered through a network of distributary channels and field channels to the farmers' fields. Generally speaking , 'top-enders' are those with fields near the head end of main channels, distributary channels and field channels.

Outline of the Paper.

The present paper grew out of a socio-economic research project into farm power and water use in Sri Lanka's dry zone irrigation schemes.[3] Supplementing the information generated by this project with other contemporary data obtained in an *ad hoc* way, this paper attempts to meet three main objectives.

3. The project was conducted jointly by the Agrarian Research and Training Institute, Colombo and the University of Reading. For details see Farrington et al., 1980; and Farrington and Abeyratne, 1982.

4. Data obtained from this project are cited in the tables as 'Farm Power Project'. For details of how these data were obtained see Farrington et al., 1980.

The first is to demonstrate beyond reasonable doubt the fact of substantial consistent economic inequality between top-enders and tail-enders (henceforth no diacritical marks).

The second and main purpose is to analyse the various processes through which this inequality is generated on irrigation settlement schemes. For it is not solely unequal access to irrigation water which is at issue here. There are in addition a number of other factors related to the process of developing and settling lands under irrigation projects, and to the spatial patterning of these schemes once they are complete. These settlement-related processes are particularly important in Sri Lanka, for here, more than in any other Asian country, the development of new large-scale irrigation schemes over the past half-century has gone hand in hand with the settlement of new populations.[5] Irrigation and settlement advance together.

The third purpose is to mention some of the implications of these processes for the broader issues of socio-economic differentiation and capitalist development in rural Sri Lanka.

It is useful to begin not with empirical data but with an elaboration of an abstract model of the processes generating inequality between top-ender and tail-ender in the course of the development of an irrigation scheme. This model is drawn from fragments of information relating to many actual schemes. It abstracts from the particular historical, topographical or physical circumstances which shape the development of individual schemes, and focuses instead on the commonalities. To do so it is convenient to assume that each new scheme is located in a hitherto-unpopulated area. The fact that in practice schemes such as Gal Oya have incorporated some pre-existing populations has not radically affected the scenario sketched out below.

For analytical convenience the factors giving rise to inequality between top-enders and tail-enders may be divided into three categories:-

5. For a useful and still relevant account of this settlement process see Farmer, 1957.

(i) Those arising from the physical design and the management of the irrigation facilities.

(ii) Those arising in the process of construction and land settlement.

(iii) Those arising from the spatial layout of the completed scheme.

Each set is discussed separately below.

Inequalities arising from Physical Design and Management of Irrigation Facilities.

It is a general rule in gravity flow irrigation schemes that those located near the point of water release obtain the best and most reliable supply. Design and management can reduce but not eliminate this inequality. Unfortunately, for a number of reasons it has not proved possible in Sri Lanka to do much to alleviate these 'natural' tendencies.

Let us take first the issue of irrigation design.[6] Our concern is only with the large scale schemes undertaken (mainly) since the 1930s. Ignoring a design innovation introduced over the past decade and therefore able to effect (marginal) improvements only on the very latest schemes, and on a small fraction of the irrigation area[7]- the important features of the physical design may be schematised as follows:-

(i) The prime focus was on the settlement aspect: the political imperative to give a land allotment to as many families as possible. Only in the 1960s did the question of the efficient use of the land become a major concern, and likewise with water in the 1970s.

(ii) The schemes were designed and constructed by civil engineering cadres who were not oriented to or experienced in agriculture or irrigation water use.

6. For a more detailed elaboration of this section see Moore, 1980.

7. The reference is to the standardised and relatively small field channel area, ideally not exceeding 40 acres, which is a feature of the contemporary Mahaweli Project design (ibid: 33).

(iii) Costs, which were met almost entirely by the Sri Lankan government, were to be kept as low as possible, while considerable emphasis was placed on the provision of housing, roads and other (non-irrigation) physical infrastructure.

(iv) In consequence, the water distribution infrastructure was constructed as cheaply as possible . The channel network was sparse and control structures few. Individual field or distributary channels were stretched to 'serve' as large an area as possible. Channels nominally of the same status- ie. field channels and distributary channels–were of widely differing lengths, both in total and in relation to each acre served.[8]

(v) Political pressures on occasion obliged engineers to incorporate into command areas land which they knew could not be adequately irrigated given the availability of water.[9]

The broad consequence was that it was physically difficult to supply water to some tail-end areas. Some such areas, most notoriously but not only in the Gal Oya scheme, have *never* received irrigation water.

Management might in principle have alleviated the situation despite the paucity of physical control structures. However, for a complex mixture of reasons which have been raked over elsewhere

8. For example, a study of part of the Mahakandarawa scheme reveals that one distributary channel was 4 ft. in length for each acre served, and another 119 ft - a ratio of 1:30. For field channels the corresponding ratio between extremes was 1 : 6 (see Irrigation Department, Sri Lanka, and Tropical Agriculture Research Centre, Ministry of Agriculture and Forestry, Japan, 1975 : 44)

9. Such pressures may have various outcomes. The author knows of a case where, under a new irrigation scheme, large and powerful farmers owning lands in the area scheduled as the top end tract managed to have this area excluded from the actual command area because, under the practice of giving each allottee an equal small plot, they would have lost land. In consequence, to justify the scheme tail end areas had to be developed. Yet they cannot receive water, both because they are too far from the source and because those large farmers who got themselves excluded from the project illegally pump water from the main channel as it passes their lands.

and not yet fully comprehended,[10] there has in fact, and especially until very recent years, been very little management of water on large-scale irrigation schemes. In the extreme but not uncommon case, there is little control beyond the head sluices from the storage tank. The channel network begins to resemble a man-made river system. In this situation of *de facto* hydraulic anarchy (below the sluice), there is little to prevent top-enders from taking the lion's share of the water available, at great cost to tail-enders and to the national economy . Top - enders can thus regularly harvest a better and a more reliable crop, and then enjoy the benefits which greater wealth can bring: purchase of tractors; better education for their children; indulgence in politics; investment in businesses; or leasing of land from those land allottees who for financial or other reasons are unable to undertake cultivation themselves (see below).

Inequalities arising in the Construction and Land Settlement Processes

There seems little doubt that unequal access to irrigation water is the major single cause of socio-economic inequality between top-enders and tail-enders, and for that reason it has been treated first. A chronological ordering of the analysis would however dictate that one first examine the consequences of the actual construction and settlement process. Since we are talking here of history than processes which can currently be observed,[11] our information is less complete than we would wish. It seems however important to sketch out at least the main outlines.

The construction process is normally 'top-down' in a topographical sense. That is to say, work on the storage reservoir—construction of the bund, the sluices and the spill—is completed first. Then the main canal is begun, along with, or closely followed by, the distributary and field channels and the houses, roads etc. in the paddy tracts at the top end. Last of all come the tail-end tracts. One consequence is that the main construction work camp, and thus

10. See, for example, Chambers, 1975; Moore, 1980; and references therein

11. For reasons which need not be elaborated here, the pattern of construction activities on the current Mahaweli project is rather different from that experienced on existing schemes.

very often the main town on the scheme, is located close under the main bund and thus near the top-end paddy tracts. Another is that those allotted land at the head end can be settled first and begin cultivation, often with generous quantities of the water which has as yet no use in the undeveloped tail end tracts. Top-enders obtain a head start.[12]

This head start may be increased if, as has happened on some schemes, national settlement policy changed during the construction period. Physical facilities provided for settlers have gradually been reduced over the years. The size of the standard land allotment has progressively been reduced.[13] The policy of providing a ready-built brick and tile house has been abandoned in favour of giving the allottee a (now small) grant to help him build his own house. The allottee is no longer faced with a ready-cleared and levelled paddy land plot, but asked to do the job himself, albeit with some government assistance. Among others, the Padaviya and Kaudulla (Stage I) schemes were thus affected. Their tail-enders, having received smaller allotments and less assistance in housing, began life under especially unfavourable conditions, and with less prospects of catching up. The resulting differences in housing and living conditions are painfully obvious to even the casual observer.

A common reaction to the evident harshness of life on tail-end tracts—the inadequacy of irrigation water supplies (and thus very often scarcity of drinking water) and the need to clear and level land and build a house with own labour—has been for tail-end allottees to abandon or never even take up their allotments. There has however always been someone willing to take over any land, regardless of hardship. On the tail ends of some schemes the original allottees have been replaced, often to a very large extent, by people who

12. Impressionistic information obtained from officers who have been personally involved in land settlement strongly indicates that (a) many allottees, especially those originally from the Dry Zone, are initially well aware of the advantages of the top end location; and (b) that the more economically and politically powerful are able to manipulate the land allocation procedures to obtain top end plots for themselves.

13. For an outline, see Richards and Gooneratne, 1980 : 123-127

are nominally 'encroachers'. Some encroachers have indeed eventually been given legal title to the plots to which they assumed rights. [14] Others however remain, or were for long periods, without legal entitlements, and were in consequence disadvantaged through being unable to obtain certain kinds of resources from government agencies. They were for example not able even to apply for cultivation loans. Since those who did obtain such loans have generally and increasingly not repaid them, this has been a valuable source of income for some.Similarly, when under conditions of limited water availability in the second (*yala*) season cultivation has been concentrated in top-end areas (the *bethma* system), tail-end encroachers were not eligible for a share in this land.[15]

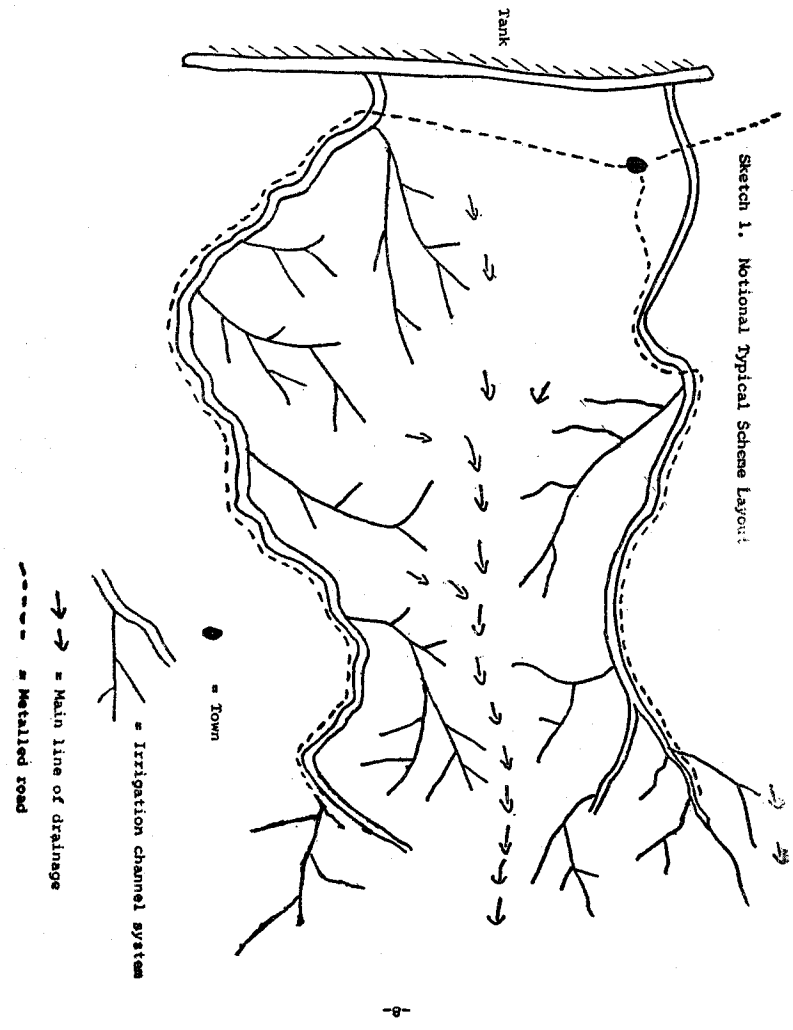
Inequalities arising from Spatial Layout of the Completed Scheme

The cumulative sources of inequality inherent in normal functioning of a completed irrigation scheme are at least hinted at various points above. One can distinguish two spatial determinants of inequality which affect particular population groups in similar but not quite identical ways: factors relating to place of residence; and factors related to location of paddy field. This distinction is necessary because one can usually find a (relatively small) population which is relatively privileged on one of these dimensions and not on the other: those whose houses are located in favourable top-end positions, but whose paddy fields are tail-end. However in general house plots and paddy land plots were sited close together in the original land allocation process. (Residential allotments are scattered throughout the scheme on non-irrigated land). Those who are top-enders in the irrigation dimension are also top-enders in the residential dimension. It is partly for this reason that, as the data below illustrates, the differentiation between top and tail-enders is so very clear on Sri Lankan irrigation schemes.

The importance of residential position arises not only from the fact that the main town—and thus the site of most government offices—tends to be located towards the top end of the scheme. (There may

14. This is true, for example, on the Kaudulla scheme.

15. In principle, under the *bethma* system all land allottees are given cultivation rights for the season in paddy tracts to which water can be most easily delivered.



Sketch 1. Notional Typical Scheme Layout

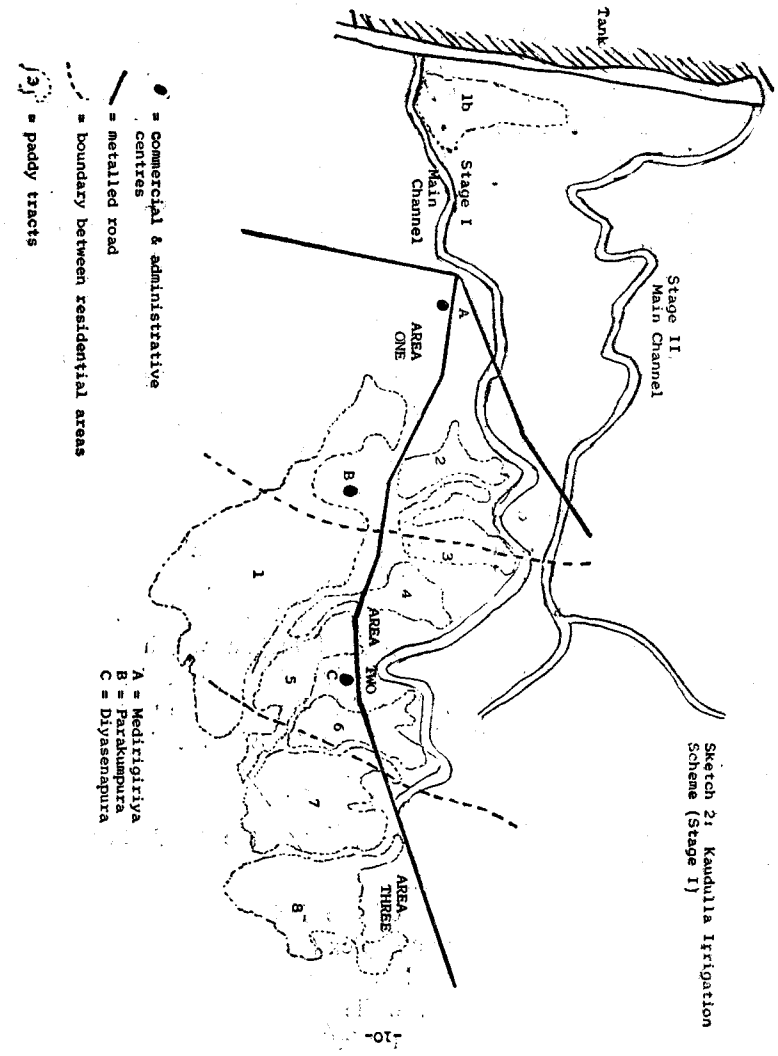
-8-

be a second town/bazaar, but this, if large and important, is rarely lower than about halfway down the scheme in distance).[16] This spatial patterning is supported and accentuated by the road layout. This tends to follow the contours of the main channel, and to focus on the main town at the top end of the scheme. External roads leading to the scheme tend to lead directly to this main town (See Sketch 1)

Transport, communications and service provision are organised in a dove-tail fashion (See Sketch 1). Services, power, information and access to the outside world are spatially concentrated in and around the head ends, especially in the head end town. It is for many reasons advantageous to live there: transport time and costs are less; it is much easier to obtain service from government agencies through personal contact, ability to be persistent or knowledge of when officers are actually available; information of all kinds becomes available more quickly and more accurately; the greater density of population and services makes it easier, for example, to obtain a private loan at reasonable interest or to find a tractor available for hire on the day required; there are greater chances of becoming, or attaching oneself to, a politically influential person; advanced education facilities are available.

All these advantages of top-end living are enhanced if one has a paddy land allotment not just at the top of the scheme in general, but somewhere close to the top of the main channel. Transport time and costs are reduced, and supervision is easy. By contrast, those with paddy allotments at the end of the field channels, even if on top-end paddy tracts, may face longer travel and, because of the tendency of roads and paths nearer drains to get flooded during heavy rains, greater costs and obstacles in transporting farm inputs and produce or in persuading tractor owners to come for hire work. Top-end residence and land location are advantageous for topographical as well as for purely spatial reasons.

16. The 'typical' scheme we have in mind here is one with a command area of say, 2000-20,000 acres. The larger the scheme the larger the number of urban/commercial centres. The 'top-end bias' however does not vary very much.



Sketch 2: Kaudulla Irrigation Scheme (Stage I)

Empirical Evidence

Having sketched out the apparent causes of inequality between top and tail-enders, some empirical evidence may be brought to bear. It would be ideal if one were able to separate out evidence of the fact of this inequality from evidence on the causes. In practice however, because of the cumulative nature of the processes involved, the same sets of data are evidence on both points. No attempt is made below to separate the two.

The evidence which can be presented here is both less complete and less subtle than one might wish . Some of the most convincing is the evidence of one's eyes when travelling around irrigation schemes. A partial substitute—sketch maps of the physical layout of a large number of irrigation schemes—cannot conveniently be reproduced here.[17] The sets of statistics reproduced below however indicate very clearly much the same conclusions. The authors have utilised various sets of data which have become available in the course of a number of recent and current research projects relating to irrigation water use, above all the study in which they have been involved on farm power and water use on the Uda Walawe, Padaviya and Kaudulla irrigation schemes.[18] In addition, special studies were made of the spatial functioning of the Kaudulla scheme (Stage I only). This was an especially useful site at which to investigate these issues because for a number of reasons one would expect—and indeed can clearly see:*less* top-tail inequality here than on any other scheme of comparable size. It thus provides a rigorous test of the general ideas.

The main factors minimising inequality on the Kaudulla scheme are:-

(i) The relative abundance of the irrigation water supply. As part of a developing complex (now scheduled as Mahaweli Area D), Kaudulla has not yet reached the limits of settlement development, while at the same time it has a capacious storage tank (in relation to the irrigated area), which has since 1976 been able to receive Mahaweli water

17. For some such evidence see Farrington et al., 1980: maps 1,6 and 10.

18. See reference in footnote 3.

from the adjacent Minneriya tank.[19] Water is often scarce in the *yala* season, and tail-enders receive less than top-enders (see below). However, tail-enders can usually depend on receiving reasonable quantities of water, at least in the *maha* season. The extremely smooth topography is ideal for gravity flow water distribution, while, unlike on most schemes, in Kaudulla parts of the system are designed such that the drainage water from one area enters the irrigation channels serving other areas. The proportion of water-retentive soils (low humic gleys) is higher than on many other irrigation schemes.[20] The data in Tables 1 and 2 reveal clearly the results of this relatively low degree of inequality between top and tail-enders at Kaudulla: a lower degree of inequality in agricultural performance between top and tail-enders than in the other three schemes for which data are presented.

(ii) Unlike in the neighbouring older Minneriya scheme, no large 'middle class' allotments have been allocated. Allotments vary from three acres of paddy and two acres of highland on most of Stage I (the right bank canal, the area studied), to two acres of paddy and one of highland on the tail-end of Stage I and on Stage II (the left bank canal area). Unlike in Minneriya, few very large accumulations of capital are in evidence among the allottee population. [21]

(iii) Farm power—and the consequent opportunities for capital accumulation—is unusually widely distributed among farming households in Kaudulla. To an unusual degree draft animals are widely distributed, singly and in pairs, among farming

19. The ratio of the storage tank capacity to the irrigated area commanded is larger on Kaudulla than for any other of the fourteen Sri Lankan schemes with a command area of more than 7,500 acres (Farrington et al., 1980: 7). For a general account of the physical configuration of the Kaudulla irrigation scheme see Holmes et al., 1980.

20. For a comparison of soil types on the three schemes studied by the Farm Power Project, see Farrington et al., 1980 : 173, 180 and 181.

21. In relation to the ownership of tractors, evidence for this point is given in Farrington et al., 1980 : 48 and 50.

households. Two-wheeled tractors are mainly for own use, while four-wheeled tractors, where employed, are mainly hired from the neighbouring Minneriya scheme.[22]

(iv) The scheme is not very large. It has an irrigated command area of about 10,500 acres, and is only the tenth largest irrigation scheme in Sri Lanka.[23]

The prospects for egalitarian material progress are at least as great in Kaudulla as on any other large irrigation scheme in Sri Lanka. This relative egalitarianism is indeed in evidence in the socio-political sphere. Farmer attendance at the pre-seasonal water meetings tends always to be very high compared with other schemes, and farmer participation in the meeting somewhat pronounced. This makes all the more significant the evidence below on spatial inequality within the right bank area (Stage I) of the Kaudulla scheme.

Location and agricultural profits

Any doubts about the fact that top-end farmers consistently produce higher per acre paddy yields than tail-end farmers could not survive the crushing weight of evidence generated by several recent studies. Some of that evidence, relating to four schemes, has already been published and will not be reproduced here.[24] The data in Tables 1 and 2 are derived from farmer samples covering four other schemes which collectively account for a big fraction of the area under the larger irrigation projects.[25] The first rows of data reveal very clearly a constant tendency for paddy yields to decline from top to tail. In the case of the Gal Oya data summarised in Table 2, an independent index of irrigation water availability was compiled. Just as one would expect, this correlated closely with crop yields,[26] thus confirming statistically something which is

22. Ibid : 48-54 and 65.
23. Ibid: 7.
24. See Ranatunga et al., 1981: 38.
25. For example, the four schemes represented in Tables 1 and 2 cover 55% of the land irrigated in schemes with individual command areas exceeding 7,500 acres (Farrington et al, 1980: 7)l
26. The existence of this correlation for a single season's data is reported in, Uphoff et al., 1981 19. C. M. Wijayaratne, in a private communication has confirmed that the same conclusions were obtained from data relating to all other seasons.

obvious on the ground: that tail end farmers obtain lower yields because they have poorer supplies of a crucial input—irrigation water. The consequences for the farm economy are very clear from the lower rows of data in Tables 1 and 2. The value of recurrent inputs (other than water) per acre does not vary very much or very consistently between top and tail ends, except perhaps that top-enders tend to use relatively more purchased inputs, such as fertiliser, per acre, and tail-enders to use relatively more family labour.[27] What does vary is cost of production per bushel of paddy produced. Because they obtain so much higher yields per acre as a result of superior access to (unpriced) water, top-enders have lower production costs per bushel of paddy produced. Correspondingly, both the profits they obtain per acre of land and the returns they obtain per unit of family labour input are relatively high.

This difference in the economics of production between top and tail-enders can be perfectly and usefully presented in terms of the classical economic concept of land rent, ie. the *unearned* income which accrues to some persons simply by virtue of their control over land rather than the productive use they make of that land. The productive capacity of the land under irrigation schemes has been enhanced through public investment. Yet the benefits of that investment are heavily concentrated in the hands of those who have managed to obtain control of land in favourable water supply locations.

Location and capital accumulation

It would be surprising if the higher profits obtained through paddy production at the top end of schemes did not result in greater capital accumulation in the hands of top-end cultivators. The available data do not surprise.

One such set, relating to the three locations studied in the Farm Power Project, is summarised in Table 3. There is a very close connection between location and ownership of farm power, especially the more remunerative types of farm power which, through hire,

27. For more discussion of this point see Farrington and Abeyratne, 1982: 251-223.

themselves contribute strongly to further capital accumulation. [28] Ownership of four-wheeled tractors, and, to a lesser extent, the much less expensive two-wheeled tractors, is strongly concentrated at the top ends of Uda Walawe and Padaviya. Only in Kaudulla—which is any way much more egalitarian in a locational sense, and dependent on hire of four-wheeled tractors from Minneriya (see above)—is this relationship not present. There is no such pattern in the case of the ownership of the much less expensive and less profitable source of farm power: draft animals. Their distribution is any way very much affected by access to grazing land,[29] and in this tail-ends may often have an advantage.

A second set of data relate to housing standards, which have elsewhere in Sri Lanka been found to be a reliable if unsubtle index of wealth and income more broadly.[30] In those cases where all colonists were originally provided with the same standard two-roomed colony house, further construction should provide a good index of relative rates of improvement in income. The relevant data are available only in relation to a sample of twenty six allottees on the Kaudulla scheme. These allottees are divided equally between those with paddy land at the top of Tract I and those with land at the very tail-end of this long tract, who in relation to water supplies are almost as much tail-enders as those with fields at the end of the main channel. The results conform to the general model. Since settlement in about 1960 top-enders had added an average additional 2.4 rooms to each house, and tail-enders only 1.4 rooms.[31]

28. For a summary of the evidence on tractor ownership and capital accumulation, see Ibid: 211 - 213.

29. This is especially true where cattle are grazed rather than stall-fed.

30. Moore, 1981a.

31. It may be useful to mention here that this top-end sample have paddy lands located within an average of about half a mile from their houses on approachable all-weather if unsurfaced roads. By contrast, tail-end farmers are obliged to travel an average of about four miles to their fields, the last half mile or so on roads which are badly eroded and impassable except on foot—and with difficulty—in the rainy season.

It is significant that one particular set of data did not reveal any very clear or consistent pattern of increasing inequality between top and tail-enders: data relating to land controlled. One obvious hypothesis is that top-enders, with their higher agricultural profits and greater levels of wealth, would begin to accumulate additional land at a faster rate than tail-enders. One could however counterpose to this the hypothesis that competition for well-watered top-end plots would be relatively high, with correspondingly greater rates of land fragmentation at top-ends.

Data collected in the course of the Farm Power Project about historical changes in land controlled (owned, leased, mortgaged) do not permit us to choose between these competing hypotheses, partly because the data themselves are suspect.[32] Such data as are available do not suggest any very clear or consistent tendency for top-enders to accumulate land and/or tail-enders to lose it. The one quantitative conclusion which does emerge very clearly is that the superiority of water supply at top-ends tends to lead to a relative shift in irrigated acreage from tail-ends to top-ends. At the top end farmers find it well worthwhile to expand their irrigated plots by encroaching on reserved land along canal banks and road-sides and by converting 'highland' to paddy land. Conversely, land scheduled for irrigation at tail-ends may be converted to other less profitable uses. For example at Padaviya (Lower Main Channel), where the most detailed investigation was conducted, actual irrigated acreage in the 1979-80 *maha* season was 115% of the allotted acreage in the top-end tracts, 113% in the middle tracts, and 101% in the tail end tracts. Correspondingly, 9% of the allotted irrigated acreage was not actually irrigated in the top end, 7% in the middle, and 38% at the tail.[33] It is widely recognised that this process of spatial rearrangement of actual irrigated area has been much more profound on the Gal Oya scheme. Detailed statistics are not available.

It is common knowledge to those familiar with Sri Lankan irrigation schemes that the 'official' (and legal) situation with regard to both location and *de facto* control of allotted irrigated land is substantially different from the reality. Encroachment and formally

32. Farrington and Abeyratne, 1982: 254.

33. Ibid: 253-255.

illegal fragmentation, leasing, sales and mortgaging are common. One cannot however conclude that these changes are a major component of the dominant pattern of socio-economic differentiation between top and tail-enders. The spatial and the strictly socio-economic class dimensions of economic differentiation do not coincide completely (see below).

Location and services

It has already been indicated above that government offices and other services on irrigation schemes tend to be concentrated in towns or villages near the top end. This general point, so obvious to the eye, could only be substantiated on paper after an exhaustive census which the present authors have not had the resources to conduct. Some more readily available information however throws light on aspects of the general patterns, especially in relation to government institutions.

On the Kaudulla scheme government offices are heavily concentrated in and around Medirigiriya town, with a few secondary facilities at Diyasenapura (see Sketch 2). The location of the *houses* of government officers reveals a similar pattern of concentration (Table 4). This information relates only to a small fraction of those persons occupying government posts on Stage I of the scheme. They are however the more powerful persons with significant influence over agricultural and land matters, and thus the important officers from the farming point of view. (For a list see footnote to Table 4).

These same officers are in most cases—and in a formal sense illegally—themselves engaged in cultivating paddy land, mainly but not only within irrigated lands on the scheme. Of the forty -seven officers identified, forty-four resided on the scheme, and thirty-four (72%) were identified as paddy cultivators. These officers between them cultivated twenty-three plots of irrigated land in the Stage I area. As Table 5 shows, their plots were heavily concentrated in the top-end paddy tracts. Thus in their extra-official as well as in their official roles, these officers find their activities focused on the top

end of the scheme. There are few reasons for them to visit the tail-ends or to enter into social and economic relationships with the people living and cultivating there. Contact with officers is easier for top-enders.

A very striking illustration of the consequences of unequal access to government officers was obtained from the Kaudulla scheme in the course of a detailed study of the management of water in the 1980 Yala season. In that season irrigation water was scarce, and it was decided to practise a *bethma* cultivation. Water was to be delivered only to top-end tracts (tracts 1-5), and only to the top ends of some of these tracts. Farmers whose permanently -allotted land did not qualify for water were to receive temporary allotments by dividing the allotments which were to receive water. Yet in fact, and apparently very typically, relatively few tail-end farmers actually ended up cultivating. At best they were 'paid off with some compensation by the top-end farmer whose land they were scheduled to share.[34]

The information in Table 6 on pupil-teacher ratios in different parts of the Padaviya scheme illustrates a different aspect of inequality in service provision. Regardless of any spatial inequality in the provision of schools—and on this we have no reliable data—the quality of the education provided, as measured by the ratio of teachers to pupils, is higher on the top-ends and lowest at the tail-ends. This finding conforms precisely to the widely observed situation in much of Sri Lanka. Schools and other public facilities located in places which are more desirable from the staff's point of view—ie. near towns and public transport—are better staffed than the more remote and less attractive locations.[35]

34. For details and statistics see Murray-Rust and Moore, 1982.

35. For information on this point at the regional level in Sri Lanka see Moore, 1981b: Chapter 6. The authors know of no public source of information to substantiate the point in relation to the micro-level, but have found abundant support in a range of *ad hoc* enquiries.

Location and Socio-Political Organisation

The superior wealth of top-end populations and their closer spatial and social interaction endows them with greater political power. Table 7 suggests that, on the Kaudulla scheme, this is matched by more effective socio-political organisation. The density of voluntary and political associations in relation to population increases from tail to top of the scheme. The information below on the socio-economic status of those identified as local leaders by two samples of farmers (at top and tail-ends respectively) points in the same direction. Tail-end leaders are mainly ordinary allottees with few non-agricultural sources of income and few institutional connections. Those at the top end are wealthier, better connected, and involved in a range of relatively profitable economic activities outside agriculture.

Characteristics of identified top-end leaders (Tract I):-[36]

Mr. A — Justice of the Peace; Director of the Multipurpose Cooperative Society; Chairman of the United National Party branch.

Mrs. B — Chairwoman of the Womens' Rural Development Society; Secretary of the Sarvodaya Society; Chairwoman of the Gramodaya Mandalaya; prominent member of the United National Party; wife of a 'Contact Farmer.'

Mr. C — Vel Vidane; prominent member of the United National Party; owner of a four-wheeled tractor and a lorry; paddy trader.

Mr. D — Chairman of the Rural Development Society; Secretary of the Sarvodaya Society; shop owner.

Characteristics of identified tail-end leaders (Tract 8):-

Mr. E — Chairman of the United National Party branch; ordinary farmer.

36. In the cause of the Farm Power Survey sample farmers were asked to name the persons they regarded as influential in their locality. These lists are derived from their responses.

Mr. F — Former Chairman of the Rural Development Society; owner of a two - wheeled tractor; ordinary farmer.

Mr. G — Chairman of the Rural Development Society; Secretary of the Buddhist Society ; ordinary farmer.

Mr. F — Vel Vidane; Chairman of the Buddhist Society; ordinary farmer.

Mr. G — Vel Vidane; Secretary of the Sri Lanka Freedom Party branch; Chairman of the Death Donation Society; ordinary farmer.

Mr. H — Chairman of the United National Party branch; Secretary of the Death Donation Society ; ordinary farmer.

CONCLUSION: The Pattern of Socio-Economic Differentiation

Space is undoubtedly a very significant factor in the emergence of socio-economic and socio-political inequalities in irrigation settlement schemes. The information given here is incomplete in a number of respects. It would be interesting to know not only how far but also exactly how top-enders are able to take advantage of their location, power and contacts with government officers to obtain privileged access to public-allocated resources: official credit; seed of new paddy varieties; allocations of land under the *bethma* system, etc. More fundamentally, how far are the inequalities recorded here between tops and tails the result of mechanisms set in train in the settlement process, and how far do they arise from pre-existing inequalities? How widespread was the phenomenon of more powerful, acute or wealthy allottees using their resources to ensure that they obtained top-end land allotments during the initial land allocation process?

Such questions might be regarded as being purely of historical or academic interest. Unfortunately for those concerned with the more immediate policy implications, there are few direct recommendations which could be made. Policies to improve water management or to direct farm power investments to draft animals rather than to four-wheeled tractors could be expected to dampen the pro-

cess of differentiation into wealthy top-end and poor tail-end populations. The process itself is however powerfully rooted in almost 'natural' spatial processes. It is too late, except perhaps on the yet undeveloped Mahaweli lands, to re-design schemes such that public facilities and private trade and other services are directed towards tail-ends. Only the most optimistic could see any prospect of shifting the spatial balance of these activities on existing schemes. There are topographic as well as socio-political obstacles on top of the weight of inertia and resource scarcity.

It is perhaps to the academic social scientist rather than to the practical policy maker that these results will be of greatest interest. For they raise a number of questions related to the as yet inadequately researched (or even debated) question of the dynamics of socio-economic differentiation and the development of capitalist relations of production in Sri Lanka's Dry Zone agriculture. Comments arising from this paper must be restricted, for one is straying into a different and as yet largely virgin research area. Perhaps this virginity itself merits a comment. For it is striking that socio-economic research into Dry Zone irrigated agriculture should have been so concerned with ringing alarm bells about the way in which the original allotments on irrigation schemes have been either fragmented through sub-division and tenancy or engrossed into larger units through mortgaging, leasing and sales.[37] This is indeed a very natural concern given the original intention to develop an egalitarian small family-farming economy. And the study of changes in land control is a necessary aspect of any study of differentiation and capitalist development. What is missing is any serious and theoretically-informed study which takes into account the accumulation of capital other than land, and the place of capital in production and social relations generally. For the apparently-egalitarian society of small family farmers created at the moment of land settlement does not last for long. Privately-owned capital is of increasing importance in shaping production and social relationships. One would like to know how, how far, and where this is true, in order to develop some idea of the broad trends in socio-economic development in the Dry Zone.

37. See, for example, Amerasinghe, 1977; Wanigaratne, 1979; and Siriwardhana, 1981.

The research reported above suggests the following three points relevant to any study of changing production relations in the Dry Zone:-

(i) Within the command areas of irrigation projects, location in relation to water supply is a major determinant of the profitability of cultivation and thus of the prospects for private capital accumulation. The unearned 'rent' arising from public investment in land development may be a major source of private profit.

(ii) Because of the relative tenacity with which land allottees try to hold on to their allotments, private capital accumulation is not adequately revealed in any study of the fate of land allotments on irrigation schemes.

In the first place, as has been evident at for example Padaviya and Kaudulla, large rapid accumulations of land tend to take place *outside* the boundaries of irrigation schemes. Those with tractors and protection against eviction for what is often formally encroachment are able to cultivate large extents of rainfed paddy on Crown Land or to lease large extents of land, irrigated or dry, outside scheme boundaries: [38] Here they do not face the very considerable problems which they would face if cultivating within scheme boundaries: persuading large numbers of allottees to cede cultivation rights in a situation where population is dense and the legal rights of allottees very clear.[39]

In the second place, the possibilities of private capital accumulation are often greater in services (eg. tractor hire), commerce and transport than in agricultural production itself.

38. Considerable evidence of this was obtained in the course of the Farm Power Project.

39. This is not to say that this does not occur, but simply that it is generally easier outside scheme boundaries where population pressure is less and the legal situation less inhibiting.

(iii) On irrigation schemes virtually all agricultural inputs except labour are wholly or partly provided by the state—water, land, credit, seed, fertilisers, pesticides, etc. In the first place, favourable access to state agencies is almost a precondition for profit-making and capital accumulation within agriculture. In the second place, and perhaps more importantly, it is the public sector itself which appears to be providing a large proportion of the agrarian capitalists. With their wide network of contacts, ease of spatial mobility, access to telephones, external sources of working capital, privileged access to information, and influence over the interpersonal allocation of land, water, credit and other publicly-provided resources, the middle and junior level public officers resident for long periods of time in one place are ideally placed to create a genuine agrarian capitalist class in the Dry Zone.

TABLE 1

The Economics of Paddy Production According to Field Location on Three Irrigation Schemes

Scheme		Uda Walawe		Kaudulla		Padaviya	
Field location within scheme:-		*Top*	*Tail*	*Top*	*Tail*	*Top*	*Middle*	*Tail*
No. of farmers sampled	a	76	29	49	48	21	46	18
Average yield, bushels per acre, maha 1979-80 and yala 1980 seasons	b	52	38	65	58	83	69	62
Average fertiliser use, lb per acre, maha 1979-80 season ..	c	95	48	163	133	66	165	43
Cost of production of paddy (Rs. per bushel), both seasons[1]	d	27	32	32	38	28	29	37
Net returns per hour of family labour inputs (Rs), both seasons[2]	e	5.1	3.2	4.8	4.5	.3	6.5	3.6

1. This figure includes the cost of family labour imputed at the local wage rate
2. Labour of different kinds (ie. according to sex and age) and in different occupations has been adjusted to adult male equivalents as explained in Farrington and Abeyratne, 1982: 108

Source: Farm Power Project Survey

TABLE 2

The Economics of Paddy Production According to Field Location on Three Sub-Systems of the Gal Oya Project

	Uhana-Mandur Sub-System						*Left Bank Main Channel*		*Gonagolla Channel*	
			Top	*Middle*	*Tail*		*Top*	*Tail*	*Top*	*Tail*
Average yield (bushels per acre)[1]	..	.. a.	53	46	33		48	33	45	37
Cost of[2] (per acre)	..	.. b.	1231	1155	1416		1230	1522	1106	1182
production (Rs) (per bushel)	..	.. c.	35	49	53		30	53	29	55
Net returns per family labour day (Rs)[2, 3]	..	.. d.	+27	+34	—48		+28	—11	44	—8

1. Figures relate to the average of four seasons from Maha 1979-80 to Yala 1981, and were collected through sample crop-cutting.
2. Figures relate only to the Maha 1979-80 season.
3. These figures have been adjusted to adult male equivalents.

Source: Data from a sample of 536 farmers. The figures were calculated from the forthcoming 1980 Yearbook of the Sri Lanka Water Management Project, to be published by the Agrarian Research and Training Institute, Colombo. Permission to use them was kindly given by C. M. Wijeyeratne and other members of the ARTI's Water Management Group.

TABLE 3

Location of Tractor Ownership on Three Irrigation Schemes: Number of Tractors Owned per Thousand Acres of Paddy Land[1]

Scheme	*Uda Walawe*			*Kaudulla*			*Padaviya*		
Main channel	*Right bank*			*Upper main*	*Lower main*		*Upper main*	*Lower main*	
Type of Tractor	4 *wheels*	2 *wheels*		4 *wt*	2 *wt*	4 *wt*	2 *wt*	4 *wt*	2 *wt*
Top end tracts ..	4.5	28.9		0.7	2.1	2.7	9.8	10.1	6.0	44.4	14.7
|	2.0	20.7									
|	4.2	18.2								13.8	17.9
v	2.4	20.4									
Tail end tracts ..	1.2	12.2		0.7	2.0	3.4	5.8	2.5	2.5	2.2	2.9

1. These data cover all tractors owned by persons resident on the schemes in 1979. The tracts are grouped as follows, from head to tail: Uda Walawe—1-7, Chandrikawewa, 9-11, 12-14 and 15-19; Kaudulla Upper Main Channel—1-6 and 7-12; Kaudulla Lower Main Channel — 1-4 and 5-8; Padaviya Upper Main Channel — A-D and E; Padaviya Lower Main Channel — 1-5, 6-10 and 11-13.

Source: Farm Power Project Survey. For more details see Farrington et al., 1980 : 45-52.

TABLE 4

Location of the Houses of Selected Government Officers in the Kandulla Scheme (Stage I) in Relation to Population

Residential location[1]	*No. of officers from selected categories*[2] *resident in the locality*	*Estimated total no. of households*[3]	*No. of households per officer resident*
Area one - top	34	1329	39
Area two - middle	8	570	71
Area three - tail	2	913	457
Total	44	2812	567

1. See Sketch 2.
2. The officers selected were the 'field' and supervisory (ie. non-office) staff of those departments which have the greatest influence in matters connected with agriculture and land: the Regional Manager of the Agricultural Development Authority; Agricultural Instructors and field extension staff of the Department of Agriculture; the field staff of the Land Commissioner's Department; the Assistant Government Agent and *Grama Sevekas;* the Divisional Officer and Cultivation Officer of the Agrarian Services Department; the Technical Assistant and field staff of the Irrigation Department; bank managers; and police officers.
3. Encroachers are included. The figures are however necessarily approximate.

Source: Data collected in the Farm Power Project, mainly by R. Amarakoon, with the kind assistance of the Colonisation Officer and his staff.

TABLE 5

Location of the Paddy Fields Cultivated by Selected Government Officers in the Kandulla Scheme (Stage I)

Location of paddy lands		*No. of plots*[1] *cultivated by selected officers,*[2] *Maha* 1981-2 *Season*	*No. of plots cultivated by officers per* 1000 *acres of paddy land*
Top — Tracts 1-3		15	6.5
Middle — Tracts 4-6		5	5.8
Tail — Tracts 7-8		3	2.1
Total		23	5.0

1. Separate plots cultivated by the same person have each been treated separately.
2. Officers as in Table 4.

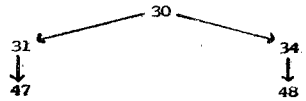
Note: Incomplete information on the size of these plots suggests that they tend to be larger nearer the tail end. Note also that several plots cultivated by officers resident in and serving Stage I of the scheme were located at the top end of Stage 2

Source: Farm Power Project.

TABLE 6

Pupil-Teacher Ratios in Schools on the Padaviya Scheme According to Location, 1979:

Number of Pupils per Teacher in the Schools Serving each Locality[1]

	Upper Main Channel	*Lower Main Channel*
Top end tracts ..	..	
Middle ..	..	
Tail end tracts ..	..	

1. The tracts are grouped as follows: top end (ie. Padaviya town area) tracts A and B of Upper Main Channel and 1-4 of Lower Main Channel; middle of Upper Main Channel-tracts C and D; middle of Lower Main Channel-tracts 5-10; tail end of Upper Main Channel-tract E; tail end of Lower Main Channel-tracts 11-13.

Source: ARTI, 1980: 8

TABLE 7

Density of Voluntary Associations According to Population in Residential Areas, Kaudulla (Stage I), 1981.

Residential Location[1]	*No. of voluntary societies*[2]	*Average No. of households per society*	*Estimated % of households resident on encroached land*
One —Top ..	22	60	35%
Two — Middle	7	81	17%
Three — Tail ..	9	101	25%
Total ..	36	78	28%

1. See Sketch[2]

2. Includes Rural Development Societies (10); Women's Rural Development Society (1); Death Donation Societies (also serving as credit societies) (9); United National Party branches (5); Sri Lanka Freedom Party branches (3); Sarvodaya Societies (5); and Community Association (1).

Source: Farm Power Project

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THE EVOLUTION OF LAND POLICIES IN SRI LANKA—AN OVERVIEW*

A. T. Mahinda Silva

The scope of this paper is limited in three important ways. In the first instance, the discussion of land policies is concerned with those aspects that led to the establishment of *principles* for the alienation of Crown land to the people and the *form of tenure* which was to be developed for the productive utilization of such land. Accordingly, very important matters of land policy pertaining to land use , size of holdings, scale of financial assistance to the selected settlers etc are not dealt with in this paper. In the second instance, the focus of attention is over a relatively restricted period of time. The main concern is with the period commencing around 1840 under the British occupation until the present time. And finally, there is no attempt to deal with the long historical evolution of land policies commencing with the period of the ancient Sinhalese kings and running through the Dutch and Portuguese periods into modern times. Nevertheless, a brief account of the land situation during the period of the Sinhalese kings is given here by way of introducing the subject and as a point of comparison between the systems that prevailed in ancient times and the fundamental changes that took place during British times and after Sri Lanka attained Independence.

In a primarily agricultural and rural society (even though the term 'rural society' in the context of Sri Lanka must be used today with great caution and many a reservation), land, whether for homesteads, cultivation, forest cover, grazing or chena; is a basic resource around which an intricate web of human relations begins to stabilise itself. 'Man and Land' (To use the title of Eric Jacoby's well known book) is a complex phenomenon. And so it was in the time of the

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Sinhalese kings. The ownership and management of land and the rights and obligations of the persons holding land had evolved over many centuries. Customs and traditions which had often the force of law governed the utilisation of land in ancient times. The historical writings in Sri Lanka as well as in South Asia generally, have paid attention to the role of the king in the complex set of political, economic, social and cultural relationships that developed in these feudal/agrarian societies. Some scholars have argued that all land belonged to the king, while others have taken the view that individuals and groups of individuals held property rights over certain categories of land and that on occasions the king himself had to purchase land which he wanted to donate for religious or secular purpose.

Siriweera, in an interesting paper presented before the Ceylon Studies Seminar, 1970/71, has sought to present a balanced 'historical revision' of the theory of the King's ownership of land in ancient Ceylon.[1] Siriweera has drawn attention to the views expressed by some of the scholars who have written on the subject of the position of the king in relation to land.Codrington, writing in 1938, was of the view that the king was bhupati or bhupala, 'Lord of the Earth'.[2] Ariyapala was also of the view that the king was the sole owner of the land which was given out to people by his grace or for a payment or in return for some king of service.[3] Siriweera cites two other scholars who have written on the subject and expressed very much the same views. The writers are Abeysinghe (*Portuguese Rule in Ceylon*-1966 and Perera ('Proprietary and Tenurial Rights in Ancient Ceylon', *Ceylon Journal of Historical and Social Studies*, Vol. 2, 1959).

As against these views, Siriweera has pointed out that terms such as 'ownership' and 'proprietorship' have not been precisely defined by the writers who have used these terms, that expressions such as bhupati, bhupala, Mahipati etc are conventional terms of eulogy to denote the king. He further points out that in ancient

1. W. I. Siriweera, *The Right of the King's ownership of Land in Ancient Ceylon: An Essay in Historical Revision.* University of Ceylon, Peradeniya, Ceylon Studies Seminar 1970/71 No. 1.
2. H. W. Codrington. *Ancient Land Tenure and Revenue in Ceylon.*
3. M. B. Ariyapala. *Society in Medieval Ceylon.*

Ceylon land belonged not only to the king but also to private individuals and groups of individuals and that further investigations were necessary before conclusive judgments are made about the relationship between the king and the land in ancient times.

Principal features

Those views are undoubtedly interesting in themselves. Whatever differences there may be among scholars about the land question in ancient times, the principal features of the system as it functioned at the time are clearly available. The first point to remember is that whether the king in fact 'owned' all the land or exercised considerable rights over it subject to traditional laws and customs; land was basically a *social* rather than a *private* asset. It was made available to the community to satisfy its varying needs under different, but a broadly uniform system of tenure. A powerful king may have from time to time interfered with the traditional patterns of land tenure. But then he would be an unjust king and not a person to be held in esteem by the people. The available land was allocated along with certain rights and obligations for different purposes. For instance, there were *Nindagam* or villages which for the time being were the property of the grantee or the Ninda Lord. When definitely granted by the king with a Sannasa, it became heritable personal property and was called *Paraveni.* There were *Viharagam* or villages belonging to a Buddhist temple. The tenants owed personal service to the temple or made payments in kind to the incumbent monk. There were *Devalagam* or villages belonging to the temple dedicated to some deity. There were *Gabadagam* or royal villages comprising lands cultivated entirely for the benefit of the Crown , as well as lands which the tenants cultivated entirely for themselves. There were *Vidanegam* or villages under the orders of a Vidane, containing usually people of low caste liable to public service. A complete list of the different types of land alienations and the tenurial conditions attached to them would indeed be formidable.

Rajakariya an obligation

Another important feature of the ancient system of land tenure was that most often the person or persons to whom the land was

given had to perform a duty or service—*Rajakariya*—which was attached to the land itself. Even where the lands passed from one person to another or from one family to another (there were hardly any land sales), the performance of the Rajakariya attached to the land would pass on to the new recipient of the land.

A very interesting outcome of Rajakariya being attached to the land was that the rich and well-to-do people did not, as so often happens now, try to take possession of lands that were being utilised by the poor, because the service conditions attached to such lands were considered unworthy of the rich. It was an excellent in-built mechanism, conscious or otherwise, which effectively prevented the rich from pushing out the poor.

Another important feature was that money was hardly in circulation. The system of Rajakariya which later appeared to the British Colonial Administrators as vestigial remains of a system of slavery (the British Administration did away with Rajakariya by passing the Service Tenures Ordinance No. 4 of 1870 whereby services due by the tenants were defined and provision was made for the commutation of such services into an annual payment in money) was an arrangement whereby wages were paid in land and rent was paid in labour. As Knox said in his inimitable style:-

> "The Countrey being wholly His, the King Farms out his Land, not for Money, but Service. And the People enjoy Portions of Land from the King, and instead of Rent, they have their several appointments, some there to serve the King in his wars, some in their Trades, some serve him for Labourers, and others as Farmers to furnish his House with the Fruits of the Ground: and so all things are done without Cost and every man paid for his pains: i.e., they have lands for it;.....".[4]

And finally, the forest land was the king's . This was especially so in the Kandyan Kingdom where the forests and mountains provided the basic protection against any invader. But the right to use the forest for pasture, firewood and chena cultivation was that of

4. Robert Knox, *An Historical Relation of Ceylon*, Tisara Prakasakayo Edition, pp. 80-81.

the villager who cultivated his rice fields in the valleys below. The total 'feel' of the ancient system, its social and economic fabric which was woven round land, has been summed up by Coomaraswamy in the following words:-

> "It will be clear from the account of the land system just given that both husbandmen and craftsmen of all sorts worked either for the King, a Religious Foundation, or a Chieftain, as well as for themselves or their neighbours. Most of these services were themselves payment for lands held by the family, and so were not otherwise remunerated; and even when work was done to order for a consideration, payment was made in kind, usually shares of paddy from the threshing floor. It will be seen that there was very little use of money, it was indeed so scarce that it could hardly be said that money was in circulation."[5]

The land situation that emerged in the 1840s under British rule was indeed a vastly different phenomenon.

The British economic interests in the Island during the early part of their rule centred around the cinnamon trade and continued to be so even after 1815 when British rule was extended over the entire country. It was with the revolutionary introduction of coffee in the 1840s that the traditional policies and attitudes to land underwent convulsional changes. The peasant had been growing coffee for a long time before the 1840s. But it was a garden crop where a few bushes would be allowed to mature with hardly any inputs or management. But the sudden rise of the coffee industry in the 1840s, in commercially-managed plantations, was an entirely different system of coffee cultivation. The following account given by Van den Driesen and taken from the citation of Snodgrass, graphically describes the changes that were being introduced into 19th Century Ceylon. The quotation is reproduced in full as Van den Driesen's account of the coffee plantations is not available readily

5. Ananda K. Coomaraswamy. *Medieval Sinhalese Art*, Second Edition, 1956 p. 27

and any curtailment of the passage would damage the effect of its analysis:-

> "Bringing with it new modes of economic behaviour and a host of concepts foreign to the prevailing economic system, it ate quickly into the foundations of the existing structure. Captitalism had arrived, and it is with its advent that the Island's modern economic history takes it start. A virile commercial agriculture soon displaced in importance the old pursuits of the people and within the short space of a few years coffee had made itself responsible for almost a third of the Government's income. The stake was large enough to render it the State's most favoured child. In the years that followed the planter's problems came to be regarded as synonymous with those of the country, and in the quest to solve them,—an undertaking to which the Government lent its energetic support—much that was new was introduced with startling rapidity. Thus did Ceylon dance to the coffee-growers' tune for the greater part of the 19th Century. In the process a new economic structure began slowly to evolve. The factors of production—land, labour and capital , took on a new meaning; roads, railways and ports appeared where there had been none before, political affairs were invested with a novel significance, and class in the modern sense of the term began its slow growth. Along with these developments a money economy emerged, bringing with it a consciousness of prices, profit, wages, rent and credit....."[6]

The fact that the 'planters' problems came to be regarded as synonymous with those of the country' was clearly reflected in the land policies which were aimed at securing to the Crown as much land as possible so that the enterprising as well as speculative planter would not suffer through land hunger.

Very important enactment

The Crown Lands (Encroachment) Ordinance of 1840 was a very importment enactment affecting land under British rule. Under this law, all waste land such as forest and chena, uncultivated and

6. Reproduced from Donald R. Snodgrass, *CEYLON: An Export Economy in Transition*, 1966 p. 17

unoccupied land was presumed to be the property of the Crown until the contrary was proved. This presumption in favour of the Crown was rebuttable only in one of three ways:-

(a) Proof of a 'Sannas' or 'Grant' (A Sannas is a grant by a Sinhalese king usually engraved on copper).

(b) Evidence of having paid taxes within 20 years.

(c) Proof of the maintenance of a permanent plantation or other improvement for not less than 30 years with uninterrupted possession during this whole period.

The presumption in favour of the Crown was so strong that very few peasants could win cases of land disputes with the Crown. Furthermore, the initiative for alienation of Crown land had to come from the individual wanting to use the land and payment had to be made for the use or grant of land. The system was heavily weighted in favour of the investors whether European or Ceylonese who had ready capital.

It has happened that much of the land which had been taken over as Crown land proved suitable for the cultivation of coffee. It was through the sale of this Kandyan land to planters that commercial coffee cultivation was launched. It was in fact the beginning of the Wet Zone plantation system where the export crops later became tea and rubber. The land was at first sold to British investors at a nominal price of 5 sh. per acre. The Government even met the cost of surveying the plot of land that the investors had selected. Starting in 1833, when only 146 acres of Crown land were sold, by 1840 an all-time record was reached when 78,686 acres were sold. In the four years 1840-1843 nearly 230,000 acres of land were sold by the Government mostly to developers of coffee estates. This land rush was considerably slowed down when in 1844 it was declared that in future no land would be sold before being surveyed and that the price would be raised to 20sh. per acre.[7]

7. The particulars regarding land sales are from Donald R. Snodgrass, *CEYLON: An Export Economy in Transition.* pp. 22-23

The extent to which these land sales and the consequent development of the plantation system undermined the economic and social life of the peasantry has been a sensitive and controversial matter to this day. On the one hand, the growth of the plantation sector has been viewed as a boon to the economic prosperity of the Island. A very eloquent expression of this view has been provided by Governor Sir Hugh Clifford when he reflected on the land question.[8] On the other hand, there is little doubt that the Kandyan peasantry lost most of the supplementary benefits of the highland such as grazing grounds, forest produce , chena culitvation for a wide range of food crops. These were the short-term effects. The long-term losses were even more severe. As the population pressures increased in the Kandyan areas, there were no land resources to fall back on and a condition of severe land scarcity had arisen. The estates were pressing on the villages on all sides. It has been said rather emotionally that the Kandyan villagers had no land even to bury their dead. It was, therefore, not surprising that when the Land Reform (Amendment) Law of 1975 was being debated in Parliament, speaker after speaker referred to the 'land grab' of the Colonial Period and the need to revise the 'historical injustice'. The utilisation of large extents of land in the Wet Zone for commercial plantation agriculture and the increasing pressures of population and unemployment in this region were clearly motivating factors for looking to the Dry Zone for the cultivaion of food crops, especially rice under irrigation.

Colonial policies

The colonial powers who occupied the Island from the 16th Century carried out an agricultural policy which was in keeping with the general colonial policies of the time. They concentrated on producing crops which had European markets and which could be transported primarily in unprocessed forms to Europe. The selection of the crops and the areas of their extensive cultivation were clearly determined by not only considerations of European markets but also the agro-climatic regions of the Island. For instance, cinnamon which grew wild was developed as a commercial crop in the

8. See *Some Reflections on the Ceylon Land Question*—Sir Hugh Clifford 'Tropical Agriculturalist'-May 1927.

coastal belt of the low-country Wet Zone to meet the demands of the Portuguese and Dutch powers. Coffee was largely confined to the mid-country Wet Zone (at elevations between 1,000-3,000 ft). Cocoa and pepper became commercial crops in the drier parts of the mid-country Wet Zone, while tea reached its highest state of commercial development in the up-country Wet Zone at elevations between 3,000 - 6,000 ft. Coconut was developed as an export crop in the low country Wet and Intermediate Zones on the north-west and southern plains of the Island. Rubber was confined to the low and mid-country Wet Zone areas with a higher rainfall (generally between 100-200"). Cardamom was developed as a commercial crop in the high elevation forest areas between 3,000 and 5,000 ft. The European colonial powers made several attempts to utilise the Dry Zone of the Island for the cultivation of crops which were marketed in the European continent such as cotton, sugar cane and sisal. Sir Henry Ward, Governor of Ceylon from 1855-1860, contributed greatly in this British emphasis on the restoration of irrigation works during this period. However, this development work in the Dry Zone bears little comparison to the vast sums that were being spent on such things as road and rail construction of direct benefit to the planting community and estates in the Wet Zone. Basically, the British colonial interests in Dry Zone irrigation were with a view to the development of commercially viable crops for export rather than for peasant settlement. When the hopes of a commercial agriculture in the Dry Zone were given up, the British interests in the development of the Dry Zone also receded.However, during the latter phase of British rule, there was increasing interest in peasant agriculture, especially in the Dry Zone and the need to increase food production. This change of approach could be briefly explained in several ways. The cost of imported food, especially to feed the resident labour on estates, was proving financially expensive and the mother-country was not slow to point out that the colonies must manage their financial affairs in a prudent manner. The ideas about the administration of colonies and the roles of peasant agriculture were taking a more liberal turn in the European countries. And there were also several European administrators such as Sir Hugh Clifford, Leonard Woolf in the Hambantota District and H. R. Freeman in the North Central Province, not to mention the Ceylonese Members on the

Legislative Council, who were pressing for closer and systematic attention to the problems of the peasantry including the problems of alienating land to this class of persons with suitable incentives for the productive use of the land.

B. H. Farmer in his *Pioneer Peasant Colonisation in Ceylon* has given an outline account of land policy which he has divided into three periods, viz., 1850-1914, 1914-1931 and 1931-1953. This separation into specific time periods may seem somewhat arbitrary, nevertheless we can pick out a few important trends relevant for the present paper through the analysis provided by Farmer. He has pointed out that land policy in Ceylon throughout the period 1815-1914 was based on three main principles. The first principle was that undeveloped land was Crown property. We have already noted how the Crown Lands (Encroachment) Ordinance of 1840 enabled the Crown to claim large extents of land. This was a principle of colonial land policy that had been applied not only in Sri Lanka but in other colonial possessions as well. The second was that the initiative for the alienation of Crown land must come from the individual in need of the land. The third was that Crown land must be paid for. It is needless to mention that all three principles went heavily against the peasantry and the potential settler in the Dry Zone.

Farmer has characterised the period 1914-1931 as one of experiment and change in the evolution of land policy. Some of the highlights of this period as pointed out by Farmer are the tenurial experiments at the Nachchaduwa Colony, the work on land tenure that was being done by C. V. Brayne, Government Agent, Batticaloa and the influential views of Sir Hugh Clifford which were later applied in Pasdun Korale East in the West Zone. In 1920 there came a Food Production Minute which allowed Revenue Officers to give small plots of Crown land to selected applicants on easy lease terms. A Crown grant was given after three years on payment of the unimproved value of the land provided that most of it had been brought under cultivation. The increasing interest in food production arising from the conditions of World War One led to some re-thinking about the principal food producer in the country , viz., the peasant. The food production motive was also an important one in the Nachchaduwa experiment. The original intention for the Nachchaduwa

Colony was that after ten years of satisfactory cultivation and repayment of advances made to them, they should receive free grants of up to five acres of paddy and five acres of highland. But the experiment was a failure as the supporting policies and institutions for a successful peasant settlement were not available at the time. Around the year 1929, much of the land within this experimental settlement had passed into the hands of the Colony's creditors. During the years 1920-1925 C. V. Brayne attempted to introduce a system of tenure which came to be known as the "Peasant-Proprietor System". It was intended by this method to stimulate food production by making land available and within the legal framework of the time, to keep land in the hands of the peasantry. Brayne's system was extended to other areas such as the Malay Colony. The views of Sir Hugh Clifford regarding the principles of land tenure are embodied in his farewell message which has been quoted by R. L. Brohier as well as Farmer.[9] The relevant text is as follows:-

(i) To make easily available to bona fide would-be peasant proprietors land of good quality in sufficient quantity to suffice for the permanent maintenance of the cultivator himself and of those immediately dependent upon him.

(ii) To render the taking up of such small-holdings not only feasible, but easy, for bona fide tillers of the soil, who desire to become landowners, and who are prepared to contribute towards the development of these small-holdings the labour of themselves and of their immediate dependants.

(iii) To enable these small-holdings to be taken up and brought under cultivation by bona fide cultivators, who are not possessed of any capital, without any undue burden of debt being by them incurred.

(iv) To render it impossible for small-holdings alienated to bona fide cultivators under this Scheme, to be sold or transferred by them to third parties.

(v) To prevent these small-holdings from passing on the death of the original owners, to a number of heirs in undivided shares.

9. The quotation is from B. H. Farmer. *Pioneer Peasant Colonisation in Ceylon*, 1957, pp. 125-126

The experimentation seen in such efforts as the Nachchaduwa Colony and the Malay Colony, the work of men like C. V. Brayne and the discussions of land policy and land tenure reflected in the words of Sir Hugh Clifford quoted above, are all an indication that the seeds of the Land Development Ordinance of 1935 had already been laid. It is, therefore, to the Land Development Ordinance and the Land Commission of 1927 that we must now turn our attention because these are the central concerns of this paper.

Land Commission of 1927

The Land Commission of 1927 gathered together, systematized and refined the ideas on land policy and land tenure which had by then received considerable discussion and some experimentation. In a sense, this was a path-finding Commission:-[10] The Land Commission recommended the "Preservation of the Peasantry" [11] as a small land owner[12] as a main objective of the policy of alienating Crown land.

A peasant was defined as 'a person who cultivates his land by the labour of himself and his family, whether with or without the aid of paid labour".[13] Most of the important recommendations of the Commission came to be made in the light of this main objective. If the peasantry was to be preserved as a class of small landowners, then the system of alienation of land by the Government had to

10. The Land Commission of 1927 which was appointed with wide terms of reference issued nine interim reports: S.PP
    XVIII — 1927
    XXXII — 1927
    II — 1928
    V — 1928
    XVI — 1928
    XXV — 1928
    XLV — 1928
    I — 1929
    XVII — 1929
    The final report was issued as S. P. XVIII-1929. The decisions of Government on the recomendations made in the Final Report are contained in S. P. XXV-1929. The 3rd Interim Report S. P. II-1928 was submitted to revenue officers (Government Agents and Asst. Government Agents) and Settlement Officers who made vauable and extensive comments.
11. S. P. XVIII-1929, Para 19
12. Ibid
13. S. P. II-1928, Para 31.

be drastically changed. The "Application System" whereby land was given only when an interested party applied for it, and the "Public Auction System" whereby land or the lease of the land is put up for public auction and given" to the highest bidder had to be abandoned or drastically modified. Under the Application System, the initiative for alienation of land was left to an interested party and not the State, which was the custodian of the corpus of Crown land held in trust as an asset of the entire community. The Land Commission of 1927 made the first positive declaration that "Crown land is held in trust (by the Government) for the whole community inhabiting this Island, that community which exists at present and as generations yet unborn".[14] In passing we may note at this point that the Land Commission was perhaps unwittingly expressing in contemporary language what was always the implied value system regarding land under the ancient Sinhalese kings. As has already been pointed out, land during ancient times was a social asset. The Public Auction System was an easy way of earning government revenue from land but it favoured the man of means and was not conducive to the planned development of the land.

In keeping with these new social perspectives, the Commission recommended a system of "mapping out" Crown lands as a preparatory stage in the systematic alienation of land for settlement and development. "Mapping out" was definded "as the careful study of a definite area as a whole and allocation of the available Crown land for various purposes." These would include:-

(a) Village needs, e.g., forest, pasture,

(b) Reserves for future villages (colonisation),

(c) Reserve forest,

(d) Public purposes.

The mapping out of Crown land could be undertaken only when the title to the land is undisputed, i.e., in villages in which the Settlement Officer has completed his work or any other part of the country in which unoccupied land was generally admitted to be Crown property. This is where the Waste Land Ordinance No. 1

14. S. P. XVIII of 1929, p. 24

of 1897 becomes relevant. This Ordinance, later replaced by the Land Settlement Ordinance of 1933 took a step further the process of examining and declaring whether a land is Crown land or private land. The term "settlement" refers not to settlement of people on the land but to settlement of conflicting claims to rights to a piece of land. The Settlement Officer was empowered to declare that "if no claim on an undeveloped piece of land is made within a period of three months....., it shall be deemed that such lands are the property of the Crown." The mapping out of Crown land was, therefore, intended as a way of rationally allocating the available land resources for present and future use. As a corollary to mapping out, an agricultural survey of the land mapped as available for economic development was also recommended. "As much information as possible with regard to the nature and fertility of the soil, the crops it is best suited to grow, the rainfall and altitude of the land, should be obtained and some particulars under these heads included in the Land Development Notices which are to be published for each area....."[15] After mapping out, the principal method of alienation of Crown land in a given area was to be by inviting applications through public notices and selection through this form of restricted competition. The policy of alienating land after inviting applications through Land Development Notices and Land Kachcheries, was already well established at the time of Independence.

'Classes' of alienation

The Land Commission also laid down the main "classes" of alienation such as for village expansion, for colonisation and for development by the middle classes. The alienation of land under certain conditions to capitalists was also envisaged. The Commission advocated a conscious policy of giving out for present use and reserving for future use suitable extents of land in and around settled villages. "Colonisation" was understood as the alienation of land to persons of the peasant class in areas outside the immediate vicinity of their traditional villages.

15. S. P. XVIII-1929, Para 31.

Alienation of land to the middle classes also received the attention of the Commission. The reasons adduced in 1927 in favour of alienating land to the middle classes are worthy of record;-

> "There is one class of Ceylonese for whom we consider it legitimate to make special provision. We refer to the middle or professional classes. At present, these classes are at a considerable disadvantage. Too wealthy to be classed as villagers, no special facilities for obtaining land on favourable terms are given to them by the Government. Too poor to compete with the big Capitalists and Companies, they are often unable to obtain suitable land at prices which they can afford, and so fall between two stools. It is in our opinion, distinctly for the benefit of the peasants that men of the educated classes should hold and cultivate estates of medium size. Estates of this nature fill a useful purpose not only by providing employment for peasants but also by securing the residence among the peasants of men of culture and position. We, accordingly, suggest that in suitable localities, when it can be done without infringing on the village reserves, Crown land should be reserved exclusively for grant to Ceylonese of the middle classes."[16]

These sentiments contained in the Third Interim Report of the Commission were re-affirmed in 1935 by D. S. Senanayake who was by then the Minister of Agriculture and Lands in the State Council:-

> "It is, indeed clear that the establishment, or rather the re-establishment of a rural gentry on the land is a step that must be taken if progress in the agricultural development of the Country is to be made. Apart from affording an avenue of employment to persons of the educated middle classess who might otherwise be unemployed, agriculture must be regarded in a Country like Ceylon as supp.ying the opportunity for truly patriotic endeavour. If efficient production and economic distribution are factors making for the building of a vigorous and healthy people, the assistance that the greater intelligence and wider knowledge of the middle classes could render to the occupation of agriculture to achieve those aims can hardly be exaggerated. It will not suffice that every Government Servant, every Lawyer, every successful Businessman, should be

16. Third Interim Report of the Land Commission, S. P. II of 1928, Para 9.

eager to invest his savings in the immovable property of land. Absentee landlordism ceasing to take any active interest in agricultural production, and concerned only in the collection of rents is not what the country needs. Rather it is that there should come into existence a class of well-educated men, dwelling among the peasants, sympathising with them in their efforts, alive to all the improvements of modern methods, helping with them in the building of a rural civilization reared on the pillars of Better Farming, Better Business and Better Living."[17]

Alienation of land to Capitalists [18] was within the framework of the thinking of the Commission.

The nature of the tenure that should be given to the peasants was a matter of great concern to the Commission which deliberated on it extensively. The final recommendations on this vital subject are presented extensively in the Report of the Land Commission. [19] The Commission said:-

"Experience in Ceylon shows that a peasant who holds his land on an unrestricted title is subject to certain dangers which may be roughly classed as follows:-

(a) He may be tempted to sell his land to a capitalist,

(b) He may mortage his land and the land may be sold at the suit of the mortgagee,

(c) His land may be sold at the suit of an ordinary creditor,

(d) Owing to the operation of the Law of Intestate Succession, his land may in the course of one or two generations become owned by so many co-owners that its proper cultivation and management becomes difficult for improvement,

(e) By successive sub-divisions among co-owners, the land may become sub-divided into lands of such small sizes as to be of very little use,

17. D. S. Senanayake, *Agriculture and Patriotism*, 1935

18. "Capitalist" is a person or Company whose primary object in acquiring land is to produce the economic products on commercial lines" S.P.II-1928, Para 31.

19. See especially the Final Report of the Land Commission, S. P. XVIII-1929, Chapter III "Peasant Holdings."

(f) The land may be abandoned or dropped out of cultivation. In such cases, the land may become a danger to his neighbours' health or crop. Also it is lying idle when it might be utilised by another villager."[20]

The paternalistic attitude of the Commission towards the peasant, which has been a feature of land policy and land administration to this date is clearly evident in the above quotation. In the wisdom of the Commissioners, the peasant must be protected from all these manifold evils and dangers through a *restricted and protected* tenure for peasant holdings to be especially created by an Ordinance which was to differ essentially from a freeholding.

Colonisation

The other important recommendation of the Land Commission was in regard to "colonisation", the term being understood to mean settlement of peasants upon land outside their native villages. In making this recommendation, the Commission was principally concerned with the growing population pressures on the Wet Zone and the need to assist and control "the natural process of migration from congested to less congested areas."[21]

The colonists were to be chosen principally from the class of small land owners, viz., the man who calls himself a cultivator yet does not consider himself a cooly."[22] The Commission drew attention to the need for "grouping" of colonists for better community life. Self-reliance was to be encouraged but the need to evolve schemes of assistance including financial assistance was emphasized. The Commission had very early in its deliberations recommended the creation of a separate post of Commissioner of Lands (this was done in advance) and now envisaged the enactment of the Ordinance embodying the basic land policies recommended by the Commission. The new legislation was to be implemented by the Commissioner of Lands through the Revenue Officers.

20. See especially the Final Report of the Land Commission, S. P. XVIII-1929, Chapter III "Peasant Holdings", Para 54.

21. See especially the Final Report of the Land Commission, S. P. XVIII-1929, Chapter III "Peasant Holdings," Para 74.

22. Ibid, Para 75.

In order to carry forward a land policy along the lines recommended by the Commission, several specialised departments of Government had to be strengthened and brought together for a co-ordinated programme of work falling principally in the Dry Zone areas of the Island. Land settlement was the responsibility of the Department of Land Settlement. The Department of Irrigation established in 1906 was already a formidable agency of Government carrying out its work under the provisions of the Irrigation Ordinance. The policy of mapping out Crown land and accelerated alienation brought the Survey Department (established in 1800) into the centre of land policy and implementation. The Department of Public Works was already playing an important role in providing the prerequisites that were necessary to develop the Dry Zone. A separate Department of Agriculture had been set up as early as 1912 by Sir Henry MacCallum. Thus the principal organs of Government for the alienation and development of Crown land had been firmly laid before 1948.

The inauguration of the Donoughmore Constitution in 1931 was the beginning of another important stage in the evolution of policies on land and peasant colonisation. The Executive Committee of Agriculture and Lands with D. S. Senanayake as Chairman became the new policy-making body and all the major departments concerned with this subject—Irrigation, Land Settlement, Survey, Forests, Agriculture and the newly created Department of the Land Commissioner came within the purview of this Committee.

It will be seen in the threads of the discussion so far that the provisions of the Land Development Ordinance of 1935 came to be finalised through a long ancestry in which the Land Commission of 1927 was perhaps the most immediate and formidable parent. There is perhaps no other law enacted by the State Council during the period 1931-1947 (with the possible exception of the Free Education Ordinance of 1943) which has had such a far-reaching impact on the economy and society of Sri Lanka than the Land Development Ordinance of 1935. It laid down a definite policy for the alienation and development of Crown land. It provided for a Land Commissioner who would subject to the general directions and control of the Minister, exercise his powers and functions through Government

Agents appointed to the Districts. The purposes and procedures for the mapping out of Crown land were laid down. The manner in which Crown land was to be alienated, the nature of the tenure that was being conferred on recipients of Crown land, the procedure for succession and the procedure for ejecting a person who had violated the conditions of the Land Development Ordinance permit were laid down in considerable detail. For purposes of administrative guidance in the implementation of the Land Development Ordinance, the Land Commissioner issued a comprehensive set of *Land Orders* covering all aspects of the Ordinance and practical problems likely to arise in its implementation.

The Minister of Agriculture and Lands moving the first reading of this Bill in the State Council in 1933 said:-

> "This Bill is introduced with the idea of joining legal sanction to some of the decisions and recommendations made by the Land Commission and to some of the decisions arrived at by this Council itself".[23]

He added that the Ordinance had two objectives in view:-

> "One is to provide for a systematic development of Crown land by Ceylonese, and the other is to establish a suitable tenure for the alienation of Crown land."[24]

The need for "Protected Holdings" was emphasized. The Minister said that:-

> "When land is alienated to a class of people, to see that the land is possessed, and it is very necessary that protection should be continued for all time. It was necessary to see that not only in the first instance the person who got the land belonged to the class to which we wanted the lands to go but that the successors too belonged to that class."[25]

23. Hansard - 1933
24. Ibid.
25. Hansard - 1933

It was felt that if land was given on outright transfers it would not be possible to protect such lands. The earlier practice of selling Crown land outright was to be discontinued. He said:-

> "Our Committee felt that it was not right for the Government which is in charge of these lands, to sell the capital of the people to some outsider and utilise that money, at the same time we felt that especially when we were alienating this land for the very purpose to see that the lands bring in a regular revenue to Government. The practice at the past was to sell the land with the result that when all the capital has been disposed of, Government could have lost the land, we in this generation would have received the money and posterity would have been deprived of the benefits from that land."[26]

The Minister of Agriculture and Lands also pointed out in this speech that his new Ordinance would work quite independently of all existing Ordinances. As such, the alienation of Crown land was not to be restricted to the provisions of the Land Development Ordinance.

Flexible basis

While the Land Development Ordinance introduced a carefully worked out legal framework for providing a "protected holding", as a basis of tenure for persons principally of the peasant class, the Crown Lands Ordinance No. 8 of 1947 provided a comprehensive and flexible basis for making Crown land available for development and for public purposes to individuals as well as institutions. Under this Ordinance, the Governor-General (who exercised his powers through delegation) could:-

(a) make absolute or provisional grants of Crown land,

(b) sell, lease or otherwise dispose of Crown land,

(c) enter into agreements for the sale, lease or other disposition of Crown land,

(d) Issue permits for the occupation of Crown land,

26. Ibid.

(e) Issue licences to take or obtain any substance or thing found in Crown land,

(f) Sell or lease the right to mine or gem in any Crown land or in any land which has been disposed of by the Crown with a reservation of mining rights in favour of the Crown.

Any Crown lands could also be declared Crown reserves for a variety of purposes. Thus the Land Development Ordinance and the Crown Lands Ordinance have remained the main legal instruments for the alienation, utilisation and development of Crown land in the Island throughout the modern period.

The Land Acquisition Act No. 9 of 1950 which made provision for the acquisition of lands and servitudes for public purposes also provided an additional instrument of strength to the State in acquiring private-owned land for public purposes as may seem necessary. On the whole, this Ordinance has been used for acquisition of relatively small extents of land required for village expansion in areas where Crown land was not available (principally in the Wet Zone areas) or for public purposes such as access roads, playgrounds, markets etc.

It is suggested (and this suggestion has not often been made) that through the Land Development Ordinance, the Crown Lands Ordinance and the Land Acquisition Ordinance, a land re-distribution programme (an important element of a Land Reform Programme) has in fact been under way in Sri Lanka from about the beginning of this century.

The question whether the objectives of the Land Development Ordinance as visualised by its mentors have in fact been achieved is rather outside the scope of this paper. Nevertheless, it should be said in passing that the "protected holding" has proved vulnerable. It is no secret that through various concealed and informal arrangements, colony settlers have sold their allotments to mudalalis in the area or middle class persons who were financially better off. Allotments have also been mortgaged for the credit needs of the settlers. Legally unrecognised fragmentation of holdings has been going on, particularly as second and third generation problems arose in

the old established colonisation schemes. The principle of having one nominated successor for a holding has also run into difficulties because it runs counter to traditional customs regarding the distribution of parental assets among the children. The highland sections of the allotment have remained undeveloped in spite of numerous governmental efforts to encourage the productive utilisation of these lands. The collection of land rent has been woefully in arrears and successive Secretaries of Agriculture and Land Commissioners, as Chief Accounting Officers and Accounting Officers, have been questioned by the Public Accounts Committee on the large-scale arrears of land revenue.

The Land Development Ordinance has often been ineffective in the face of these realities. Nevertheless, it has proved to be an eminently durable piece of agrarian legislation in the country.

Economic criteria

A second Land Commission was appointed by the Governor-General in 1955 to examine the policies of the Government relating to alienation of Crown land, assistance to peasant colonists, efficient use of Crown land and to propose necessary amendments to the Land Development Ordinance of 1935. The Commission presented an Interim Report in 1957 and the Final Report in 1958. The Commission concluded that much of the financial investment in colonisation schemes had been inefficiently used and that economic rather than social criteria should be predominant in future settlement planning. The Commission also felt that the long delay in giving the colonists title to their allotments had reduced their incentive and lead to inefficient use of land and capital. It proposed a three-stage tenure system on the following lines:-

Stage I - The allottee receives a permit for a period of not more than three years, during which he must reside on the land and develop it under close government supervision. He must pay an annual levy. He is not entitled to sell or mortgage the land. He must nominate a single successor.

Stage II - Subject to satisfactory fulfilment of the conditions in the initial permit or lease, the allottee is given the opportunity to purchase his land from the Crown.

Stage III - Once the purchase of the allotment is completed, the allottee receives a grant from the Crown subject only to conditions preventing fragmentation. Otherwise, he is completely free from government supervision.[27]

As a result of this report, some minor amendments were made to the Land Development Ordinance in 1960 and 1969 but otherwise little action was taken on the recommendations of the Commission.

The next important event in the development of land policy, as understood within the scope of this paper, was the enactment of the Sale of State Lands (Special Provisions) Law No. 43 of 1973. This legislation reflects a considerable departure from the concept of the "protected holding" that was an article of faith in the 1920s and 30s and embodied in the Land Development Ordinance. It was now beginning to be felt that the 'protected holding' had indeed been over-protected and that the allottee did not have sufficient incentives to develop the land which he felt was always under government control and supervision. The Land Development Ordinance had provided for the issue of Crown grants when the holding was fully developed. But the number of allotments on which such grants had been issued was relatively small and long periods of time had elapsed between the alienation of the land and the issue of a Crown grant, even in cases where considerable efforts at development of the land had been made. There was also a further argument that if the allottee could mortgage his allotment, he would be able to finance the short-term and long-term needs of agricultural production on the land. There was also a feeling that the allotments should be made complete free-holds so that the responsibility for its development and its disposal would rest with the allottee himself. It was felt that the Government had been too paternalistic and that as a consequence, the colonists instead of developing self-reliance, had learned the habits of dependence and petition-writing to the Government

27. See Report of the Land Commission 1958.

even on trivial matters concerning their allotments. The Law provided for the sale of State lands to individual cultivators and for the repeal of certain provisions of the Land Development Ordinance. The principal intention was to give a free hold tenure to allottees on colonisation schemes, village expansion schemes, where land had been alienated or was to be alienated under the Land Development Ordinance. The Law could also be applied to undeveloped State lands. Permits or grants issued under the Sale of State Lands Law were to replace the permits or grants issued under the Land Development Ordinance but they were to contain similar restrictions on sale, fragmentation, disposition and succession.

Although the law was passed, on account of various difficulties, it was not implemented. Instead, a new amendment to the Land Development Ordinance known as the Land Development(Amendment) Act No. 27 of 1981 was passed. The two important features of the 1981 Amendment were:-

(a) The purposes for which State land may be mapped out was completely revised to include present-day requirements such as the prevention of soil erosion, environmental protection and the preservation of objects of archaeological or historical interest.

(b) The sale of State lands which had been earlier alienated under the Land Development Ordinance and which may be alienated in the future.

A permit holder has to pay the purchase price as determined by the Land Commissioner in full or in annual instalments within a period of ten years, together with interest calculated at a rate not exceeding 4% of the balance of the purchase amount outstanding each year after the payment of the annual instalment due for that year. The permit holder will be issued a grant in respect of the land of which he is in occupation when he has paid the full purchase price and has been in occupation and developed the land to the satisfaction of the Government Agent. In the case of irrigated land, the grant could be issued after a period of three years and in the case

of highland after a period of one year. Fragmentation of the holding is not permitted even under the new amendment but the allottee can dispose of the holding with the prior approval of the Government Agent.

It will be seen that the Land Development (Amendment) Act No. 27 of 1981 has sought to achieve the objective of a free hold which was embodied in the Sale of State Lands (Special Provisions) Law No. 43 of 1973 which was repealed. It remains to be seen whether under this new amendment there would be a greater incentive among the allottees to develop their own allotments and solve their own credit needs.

This in broad outline is the evolution of land policy from about 1840 to the present day. However, the present economic and social problems, including the pressure of population on land and unemployment, pose new problems for land policy . For instance, what is the kind of land alienation or land tenure that is suitable for the large extents of Dry Zone lands which are under chena cultivation? Similarly, will the provisions of the Land Development Ordinance be adequate in dealing with the problems of alienation or leasing of lands in the Wet Zone for commercial crops such as tea, minor export crops and coconut?

These issues are already before the authorities responsible for formulating land policies in a rapidly changing social and economic environment.

A CRITIQUE OF THE WHITE PAPER PROPOSALS ON PRE-SCHOOL EDUCATION AND GENERAL EDUCATION

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The text of an address delivered at a Marga Institute seminar on the White Paper proposals concerning Pre-School Education and General Education held on 2nd December 1981

Prior to the publication of the White Paper the Government appointed the Bogoda Premaratne Committee to study and report on General Education. The recommendations of the Bogoda Premaratne Committee Report have been studied by at least one group and the proposals in respect of General Education contained in the White Paper are the outcome of its deliberations. Hence an examination of the White Paper proposals on General Education would necessarily involve an examination of the corresponding recommendations of the Bogoda Premaratne Committee.

The Premaratne Report itself has not been published and is not otherwise available to us.* Fortunately, however, enough accounts of the Committee's deliberations and extracts from its Report appeared in the Press at the time the Report was compiled. We are therefore in a position to study the relationship between the White Paper proposals and the Premaratne Report, and that is one of the things I propose to examine.

But, before that, I have to examine the problems or the deficiencies in the present system which the White Paper proposals on General Education are intended to solve or rectify.

* *Note by Editor:* This report has since been published , viz Sri Lanka Ministry of Education. *Towards relevance in education . Report of the Education Reforms Committee*-1979. Colombo. Department of Govt. Printing. 1982 (April) xiii, 216 p.

The White Paper refers to certain major weaknesses of the General Education sector.

(a) Schools have become more a medium of competition than institutions imparting sound all-round education.

(b) Excessive emphasis on examinations has led to an impoverishment of the content of learning inside the classroom and diminution of the importance of those most valuable outcomes that accrue from co-curricular activities.

(c) In serving primarily the scramble to reach the top, the needs of the majority who cannot get there are neglected.

(d) Only subject matter that can be tested at national level written examinations receives attention.

(e) Other aspects of the curriculum such as content of local relevance and practical subjects which are at least equally important if not actually more important tend to be neglected.[1]

Keeping these in mind we can now consider the White Paper proposals and examine their adequacy.

Pre-School Education

The Bogoda Premaratne Committee has made a realistic evaluation of pre-school education.

> "The pre-school educational movement has grown up under the inspiration of a great deal of theory relating to child psychology and development. Its methodology has been evolved to help children grow in accordance with their natural order of development without undue adult interference. It seeks to provide the kind of play-material, the experience and the environment most conducive to the development of self activity, sense perception and co-operation."[2]

1. *The White Paper:* Introduction ii
2. *Premaratne Committee Report*, Page 78, para 3.1

The Committee recalls the warning of Sigmund Freud:

"A child's personality is completely formed for better or for worse by the time he or she is five years old. Whatever damage is done before a child is five years old can never be rectified after that age"[3] and also the statement of the Jesuit educators.

"Give me a child until he is five years old and you can have him thereafter."[4]

However, the Committee does not recommend the establishment of pre-schools by the Central Government or by Local Authorities. It is content to let this educational service remain in private hands, but makes two recommendations:

"that initially a national survey of nursery education be conducted with particular reference to the conditions under which the children are 'taught' and the quality of staff, and

following on the census so taken steps be taken to have all nursery classes registered for the purpose of considering what kind of guidance and assistance should be given to them by the Ministry of Education or by Local Government authorities."[5]

The White Paper does not appear to show the same interest in Pre-School Education as the Premaratne Committee. It says "as the age of admission to school is five years in Sri Lanka, pre-school education is not considered essential for the healthy development of the child."[6] It is a little difficult to understand this argument especially as Grade 1 to which the child is admitted at five is a step in the formal stream of education in this country. However, the White Paper recognises that a useful service is rendered by private pre-school institutions particularly in urban areas of the island,[7]

3. *Ibid.* page 78, para 3.4
4. *Ibid.*
5. *Ibid.* page 79, para 3.5
6. *The White Paper*, page 12, para 78
7. *Ibid.*

and that "the popularity of the classes they conduct is evidence of the demand for organised pre-school education."[8] It also stipulates that pre-school education should provide children with an environment that is conducive to their development.[9] However, in spite of this recognition of the usefulness of pre-schools and the necessity of maintaining a high standard in these institutions the Ministry is reluctant to intervene directly. It is only willing to:

(a) encourage public and private agencies to organise programmes for training pre-school teachers.

(b) formulate guidelines to help maintain satisfactory standards in

(i) training teachers for pre-school education, and

(ii) conducting pre-school educational institutions[10]

This reluctance is very difficult to understand in the face of the recognition in the White Paper itself of the difficulties faced by the child joining primary school. Says the White Paper:

"At five plus, when the child first goes to school he enters a social environment which is completely different from the one he has experienced within the home. Consequently, he has to face many problems of adjustment."[11]

The Ministry is quickly overtaken by a strong feeling of guilt at this gross negligence and becomes quite apologetic. It says:

"However, it will be ensured that children who have not been to a pre-school institution will suffer no disability either in the matter of admissions or in the matter of benefiting from the educational programme in the primary school."[12]

8. *Ibid.*
9. *Ibid.*
10. *Ibid.*
11. *Ibid.* page 1, para 6
12. *Ibid* para 80

Disability in the matter of admissions, certainly 'yes' by rules and regulations. But disability in the matter of benefiting from the educational programme of the primary school—I am not so sure.

The question of the availability of pre-school education may be directly linked to the problem of raising the internal efficiency of the education system . At this point I should like to quote some strong authority and like a Third World Finance Minister I turn to the World Bank.

"The problem of educational efficiency has two internal dimensions: the flow of students through the system with a minimum of waste and the quality of learning achieved in the system. Wastage in the flow of students is manifested quantitatively in the form of drop-out and repetition, while the quality of learning is determined by the inputs and outputs of the education system."

"The effectiveness of school input, as pointed out earlier, is significantly dependent on the characteristics of entering children. There is growing evidence that children of pre-school age from poorer segments of the population in developing countries perform poorly in most tests of ability compared with children from higher-income groups. As elementary schools expand and become more equitable, drawing an increasing number of children from lower-income families, they will face an increasing deterioration of the "raw input" entering the system. It is important, therefore, to identify the critical factors determining the abilities of pre-school children that can be influenced by policy instruments usually available to governments. There are indications in the literature that the most critical factors in this category are nutrition, health and early social environment."[13]

13. *Education Sector Policy Paper:* The World Bank, Washington D. C. April 1980, p. 30

"Improvement of the pre-school environment largely depends on wider measures to alleviate socio-economic deprivation and to provide nutritionally adequate food, better water supply, sanitation and housing, and preventive and curative health services. There are, however, certain educational measures that can change the quality or the mix of the environments at home and outside that the child is exposed to during his pre-school years. First, the environment at home can be altered through improvements in health, nutrition, child-rearing, and population education in both adult education programs and the curricula of primary and secondary schools, and the provision of general extension workers at the village level to provide training for parents in health, nutrition, and family life. Second, the environment outside the child's home can be made more conducive by providing pre-school compensatory programs, day-care centers, or similar community arrangements on a large scale. Only countries approaching universal primary education can afford to consider, within the wide array of their educational needs and priorities, a vertical expansion of their primary cycle to include one or two years of formal pre-school education."[13a]

A number of questions may be raised in regard to the White Paper proposals in respect of Pre-School Education.

Why is the Ministry reluctant to intervene in this area directly?

Is it on account of the cost involved in establishing a series of new institutions?

Why cannot the Lower Kindergarten and Upper Kindergarten of yesteryear be revived ? They can be accommodated in the Primary School itself.

There is something that the Premaratne Committee discusses in respect of the under-fives which the White Paper is silent about—Play Centres—

13a *Ibid.*

The Committee is aware of a great need for working mothers, both in urban and suburban areas, to be relieved of the care of their infants when no adult is at home. This parental need is one that could profitably be converted to a multiple service to a most deserving class of children. This is an area in which Local Government, Health and Educational authorities should co-operate in the establishment of play centres in suitable locations. The play centre should have as its primary concern, the health care of the visiting children for routine inspections and communicating such findings to the parents, making available a happy home-away from home-

The Education Department is in a position to have staff trained in the basic theory and practice of Child Education. In some places the school premises may be made available for the purpose.[14]

This is an important proposal of which serious notice should be taken.

Education at Primary Level

The main change, perhaps the only change proposed by the White Paper in this area is a reduction in the time devoted to Primary Education. "A child's schooling will, as at present, begin at the age of five plus. But instead of six years of primary education there will be five, comprising the first phase."[15]

The Premaratne Committee did not make such a recommendation. This Committee assumed that the present six-year span of Primary Education would continue and recognising that "there is an urgent need for the establishment of a large number of primary schools in most electorates of the Island" recommended the establishment of new Primary Schools on the basis of the six-year span.[16]

14. *Premaratne Committee Report*, paras 3.7, 3.7.1 and 3.7.2
15. *The White Paper*, page 1, para 3
16. *Premaratne Committee Report*, page 82, para 5.1

It is extremely unfortunate that the White Paper proposals on Primary Education are not as progressive and enlightened as the views of the Premaratne Committee. Its silence on the matter of establishing new Primary Schools indicates that the Government does not consider the extension of primary schooling facilities to cover the entire population an important matter and this in spite of the fact that Sri Lanka's enrolment ratio was only 70.9 in 1975. The reduction of the primary span to five years is equally unacceptable to enlightened opinion. It is also not known whether the intention is to cover the six-year content in five years or to reduce the content in keeping with the reduced period. To attempt to cover six years' work in five years would be very unwise; it would place unwieldy burdens on young children and lead to a much greater number of repeaters and drop-outs thus affecting the interna l efficiency of the system. The White Paper proposals will see to it that 30% of the population will continue to be shut out of primary schooling while those lucky to be in school will receive an education of a psychologically and academically unwelcome sort.

Everyone, regardless of income level or social stratum has the right to acquire a basic level of knowledge and skills. This principle has been accepted by all societies and is included in the Universal Declaration of Human Rights. The Constitution of the Democratic Socialist Republic of Sri Lanka, too, gives this an important place. It is recognised that a proper basic education allows an individual to develop his own potential to the fullest and, at the same time, to become effective in a larger process of modernization and growth. Formal schooling is the chosen vehicle for providing basic education to the school-going population.

The potential benefits of education as a consumption good and a source of pleasure and cultural enrichment cannot be considered apart from its utility in transmitting the skills necessary to help people meet their basic needs for health, adequate nutrition, safe drinking water and housing and for raising income.

The World Bank in one of its recent publications has pointed out that Primary Education is of particular importance in overcoming absolute poverty. In countries where it is far from universal

it has been pointed out that the case for increasing the proportion of children who complete Primary Education is strong. Studies carried out in various years between 1957 and 1978 in 30 developing countries in the middle income group with an adult literacy rate of over 50 per cent indicate that the social rate of return to Primary Education is 22.2 per cent while the figures for secondary and higher education are 14.3 per cent and 12.4 per cent respectively.[17]

It is also stated that where complementary inputs required for improved farming techniques were available the annual output of a farmer who had completed four years of primary schooling was on the avearge 13.2 per cent more than the output of one who had not been to school. Some of the individual figures that have entered into this calculation are as high as 24.4, 22.1, 20.4 and 18.4.[18]

Primary Education also has favourable effects on equity, it has been shown. With the further expansion of Primary Education additional spending will come to be concentrated on backward rural areas, girls and the poorest urban boys. Also, in general, Primary Education tends to effect a progressive redistribution of income—to the advantage of the poor. In contrast, public expenditure on secondary and higher education, it has been shown, tends to redistribute income from poor to rich, since children of poor parents have comparatively little opportunity to benefit from it.[19]

Extending Primary Education to girls has been shown to have highly favourable effects on the health, fertility and education of the next generation.

> "Educating girls may be one of the best investments a country can make in future economic growth and welfare—even if girls never enter the labour force. Most girls become mothers and their influence—much more than the fathers'—on their children is crucial.

17. *World Development Report:* 1980; The World Bank, Washington D. C., August 1980, p. 49.
18. *Ibid.* p. 48
19. *Ibid.* p. 49

Health: Studies in Bangladesh, Kenya and Colombia show that children are less likely to die early, the more educated their mothers, even allowing for differences in family income.

Nutrition: Among households surveyed in Sao Paulo, Brazil, for any given income level, families were better fed, the higher the mother's education.

Fertility: Education delays marriages for women, partly by increasing their chances of employment, and educated women are more likely to know, and use contraceptives." [20]

How long should the period of Primary Education last? This is what the World Bank has to say on this point:

> "Six years of primary schooling continues to be the most widely accepted norm, although some poorer countries have recently reduced the number of years while certain upper middle-income and higher income developing countries have increased it."[21]

I wish to make two observations here. One is that since 1977 we have often been told that there is a higher rate of growth than during the period from 1970 to 1977. The second is that the White Paper proposes to reduce the period of Primary Schooling by one year only to add one year to the period of Senior Secondary Education, thus giving the impression that it is not so much a question of finance but one of philosophy. More of it later.

Education at the level of Grades 6, 7 and 8

This period is referred to as the Junior Secondary Stage. The only change here appears to be the replacement of the technical subject in the curriculum with a new subject to be named Life Skills. I am rather puzzled by this usage of the term 'Life Skills.' This term occurs in the literature pertaining to Basic Education where the field of 'Life skills and knowledge' embraces hygienic practices,

20. *Ibid.* p. 50
21. *Education Sector Policy Paper:* The World Bank, Washington D. C., April 1980, p. 16

sanitation, nutrition, family planning, the environment, management of the family economy and creating and maintaining the home.[22] What seems to be the intention of the White Paper is to provide some elementary manual skills in the abstract. From pre-vocational studies in two areas we came to one technical subject and now, Life Skills. If a new White Paper were to be issued next year I am prepared to take a bet that even Life Skills would be gone with nothing to replace it.

With regard to education at this level I regret very much that the White Paper has not been influenced by an important statement made by the Premaratne Committee in its report;

> "..... we would like to emphasize that excellence in the traditional concept of tool-subjects of 'Reading, Writing and Arithmetic (new Mathematics) in addition to a second language, particularly, English is what parents would like to see as their children's minimum academic achievement at the end of these three years. We agree with this aspiration of parents."[23]

The Grade 8 Examination (Junior Secondary Certificate in Education)

The proposal to institute an examination at the Grade 8 level originated in the Premaratne Committee Report. The Committee recommended that "an attainment examination be conducted at the end of Grade 8 for the purpose of qualification." The Committee sees two uses for such an examination:

(i) It will provide the educational authorities with an instrument for evaluating the quality of education imparted at this level in the nation's school system, and

(ii) It will also serve as an incentive for all pupils to continue and complete the junior school education.[24]

The White Paper adds to this proposal and refers to a number of roles this examination is expected to play.

22. *Education and Basic Human Needs;* World Bank Staff Working Paper No. 450, April 1981, p. 9
23. *Premaratne Committee Report*, page 87, para 7.5
24. *Ibid.* page 88 para 8

Firstly, it will be an achievement test.[25]

Secondly, it will be an examination with certification at the school-cluster level to enable early school-leavers to obtain a certificate.[26]

Thirdly, it will be a standard school-leaving examination certificate.[27]

Fourthly, it would reduce the number of drop-outs in Grades 6 and 7 by inducing pupils to stay on in school to obtain certification[28]

Fifthly, such certification would also benefit pupils who wish to seek early vocational specialisation by enabling a proportion of them to join courses coming under the Technical Education Authorities at an early age. Entry requirements for admission to these courses will stress the aptitude for the various vocations.[29]

Sixthly, it will provide a guide to the parents in regard to the aptitudes of their children.[30]

Seventhly, it has been proposed to take in hand a certain percentage of pupils from Grade 8 and give them an additional year of schooling during which they will do intensive work in English language and also study a few of the other vocational subjects in the curriculum through the medium of English.[31]

I assume that the Grade 8 examination will have a role to play in selecting these pupils who will be in a privileged position and who will number about 5% of

25. *The White Paper*, page 4 para 22
26. *Ibid.* Introduction, iii
27. *Ibid.* page 1 para 2
28. *Ibid*
29. *Ibid;* see also, page 18, para 124
30. *Ibid.* page 4 para 22
31. *Ibid.* page 19, para 129

the Grade 8 enrolment. It is stated that the basis of selection will be aptitude for language learning and not competence in English.[32]

The first comment I should like to make regarding the proposed Grade 8 examination is that it certainly will not help overcome one of the defects of the current school system recognised by the White Paper itself namely, excessive emphasis on examinations. The White Paper describes the unfortunate situation that has developed as a result of excessive emphasis on examinations in the following words:

> "Both the content of teaching as well as methods suffered from the crippling influence of examinations. Tutories sprang up in large numbers and private tuition for pupils even in the middle grades became the order of the day."[33]

This dangerous situation had developed even without a Grade 8 examination. One cannot imagine what would happen after the introduction of the Grade 8 examination.

It is also pertinent to recall that when the present Government abolished the NCGE examination in 1977 one of the reasons adduced for doing so was as follows:

> "the tendency of the examination to make students strain themselves at an early age and resort to private tuition on an extensive scale."[34]

The NCGE came at the age of 14 plus, but the proposed Grade 8 examination will come at 12 plus. The argument has been put forward that since in the case of the Grade 8 examination the papers in the important subjects will be set at the centre but marked at the school-cluster level the students will not strain themselves and seek private tuition. I think this argument can easily be rejected.

32. *Ibid.* page 20, para 130
33. *Ibid.* Introduction i
34. *Ceylon News*, December 15, 1977

According to the White Paper the Grade 8 examination will not lead to any streaming or selection of pupils.[35] However, the White Paper uses the word 'selection' once negatively and twice positively, along with the word 'aptitude.'

As I have shown above, the achievement test at Grade 8 is expected to be an aptitude test as well. I am not too sure whether any test would play this dual role successfully. Perhaps the Ministry of Education could help us here by stating clearly which aptitudes they expect to measure by conducting an achievement test on a common package of learning comprising First Language, Religion, Mathematics, English, Science, Social Studies, Aesthetic Studies, Life Skills, Health and Physical Education, possibly Practical Sinhala/Tamil as well, at the tender age of 12 plus. Perhaps it is only the general academic aptitude that could be measured, but how could it benefit pupils who wish to seek "early vocational specialisation" depending on the aptitude for various vocations unless we go by the often-followed principle that the people who are fit for vocational education are those who fare badly in academic education. It is said that the final progress report of the pupil at Grade 8 will contain details regarding "the performance evaluation in respect of co-curricular activities."[36] Even so, could these be organised in sufficient variety to be able to be of any help in measuring different aptitudes? Also the expectation that the Grade 8 examination will provide a guide to the parents in regard to the aptitudes of their children may not be fulfilled.

The Premaratne Committee recommends that "certification at this level should be treated as the basic educational requirement for general employment purposes."[37] On the one hand at a time when university degree, A-level and O-level qualified applicants are available in plenty not many employers will be content with Grade 8-qualified employees. And on the other, to impose such a minimum educational qualification may seem unfair by those who are obliged to drop out of school much earlier.

35. *The White Paper*, Introduction iii
36. *Ibid.* page 4, para 23
37. *Premaratne Committee Report* page 88 para 8

I have to discuss the expectation that the Grade 8 examination would reduce the number of drop-outs in Grades 6 and 7 by inducing them to stay on in school to obtain certification. This expectation does not appear to be based on the actual socio-economic conditions of early leavers. One of the main reasons why children leave school early is poverty and no amount of certification will make pupils who really cannot afford to remain at school to do so.

The attitude of the Premaratne Committee towards this problem appears to be more realistic.

> "It is most important that every pupil completes this stage of general education. It was suggested to us that the legal provision available to compel attendance of children should be enforced. We believe, instead, in making the teaching programme as attractive as possible to the average child of this age group and in providing inducements for the disadvantaged children by way of free books and meals."[38]

Free books are now available. Meals and clothing, stationery, and help with facilities fees, bus transport etc. should be provided. Unless and until these needs are met I personally do not think that certificates alone can do the trick.

Is this Grade 8 examination confined to students attending schools in clusters? Will children attending private fee-levying schools, assisted schools, unitary schools and remote schools also have to sit this examination? What are the arrangements for setting and marking of papers in respect of these students?

The Ministry, as seen above, expects many things to happen at the Grade 8 examination. As a result of all this if the numbers going to Senior Secondary Education are greatly reduced the Ministry along with the Treasury should be really happy indeed. I think that is the true meaning of the Grade 8 examination. Such an interpretation will be consistent with the letter as well as the spirit of the White Paper.

38. *Ibid* page 86, para 7.2

Education at Senior Secondary level (Grades 9, 10 and 11)

This third phase of General School Education which up to now has been of only two years' duration and accepted to be so even by the Premaratne Committee has now been extended to three years. However, all persons receiving full-time formal education after Grade 8 will not be in the Senior Secondary School, for Technical Education Authorities will organise a three-year G.C.E. technical course in technical schools which will run parallel to Grades 9, 10 and 11 of the normal G.C.E. courses conducted in schools.[39]

This is an arrangement not favoured by the Premaratne Committee, for this is what it says:

> "The Committee is of the view that the Senior Secondary School, terminating its education at Grade 10, is not the proper place to devote its inadequate energies for the training of young people for specific jobs, whether at local or national level. On the other hand, the Committee is of the view that the educational programme at this stage should concentrate all its resources on imparting a sound general education to all children in all schools, on the principle that what is being taught them will have general applicability in training and adapting themselves to whatever job they may be called upon to do."[40]

> "We prefer technical/vocational education to be treated more seriously and be given at a more appropriate place and time, viz, at a properly equipped and manned institution which we term Comprehensive College to which pupils will be admitted *after* their secondary education."[41]

I wish to thank the Ministry for the proposals regarding continuous assessment, widening of the fields of assessment, maintaining pupil personality development records and pupil performance profiles, school guidance and counselling, development of co-curricular activities and work experience programmes. No doubt, the Ministry is aware of the large amount of preparatory work it

39. *The White Paper page* 19, para 126

40. *Premaratne Committee Report* page 80, para 9.3

41. *Ibid.* page 89, para 9.5

will have to put in these areas, especially in training the required personnel and the establishment of uniform and acceptable standards throughout the Island. Cynics might of course say that all this is highly unrealistic and far too ambitious.

In public discussions on the White Paper dissatisfaction has been expressed about the emphasis placed on the study of English and the absence of any worthwhile proposals with regard to the teaching of the First Language and Religion.

A more important question would be "Would General Education continue to be offered free? It is true the White Paper does not refer to free education at all. But one word that has been used creates much suspicion—'self-reliant' is the word.

Speaking about unitary schools the White Paper says:

> "They are also rich in resources and can manage their affairs with less state aid than normal schools. Such schools would be given an opportunity to become more and more self-reliant.[42] School clusters will also be encouraged to move towards greater self-reliance so that they may shoulder heavier responsibilities."[43]

I should like to examine the position of the White Paper in relation to the provision of free and compulsory education. In Sri Lanka there is still no clear and unambiguous legislative provision for compulsory primary education. One of our leading educationists Prof. J. E. Jayasuriya has this to say on this point:

> "..... in Sri Lanka what exists is a widespread myth that the relevant legislation is found in the Statute book. ..... As far back as 1961, a Royal Commission on Education pointed out the absence of legislation and recommended the enactment of legislation, but those in authority have taken no action about it though there is no shortage of politicians and bureaucrats who claim that education in Sri Lanka is compulsory."[44]

42. *The White Paper* page 11, para 66
43. *Ibid*- page 91, para 57
44. Jayasuriya, J. E. *Education in the Third World* Indian Institute of Education, 1981; p. 14

In December 1959, at a meeting in Karachi the representatives of the Unesco National Commissions of seventeen Asian member states of UNESCO drafted and endorsed a recommendation to their governments that action should be taken by 1980 to achieve the objective of free and compulsory education of at least seven years' duration.[45]

The silence of the White Paper in regard to this question means that another opportunity has been wasted. And this silence comes within a few years of the International Year of the Child when the world was reminded from every platform that children were like beautiful flowers and needed to be loved. However, the two issues of the exploitation of children as servants and labourers and the tremendous shortfall of public education programmes have received little attention.

Principle 9 of the United Nations Declaration of the Rights of the Child states as follows:

> "The child shall not be admitted to employment before an appropriate minimum age; he shall in no case be caused or permitted to engage in any occupation or employment which would prejudice his health or education or interfere with his physical, mental or moral development."

In Sri Lanka out of 3.8 million school - age children only 2.6 million are in school, and 1.2 million are denied access to education. "As a consequence, massive illiteracy (especially among girls) is being perpetuated into the next century, condemning huge segments of the population to a marginal existence and denying them an opportunity for upward mobility based upon their abilities to achieve."[46]

A while ago I referred to the philosophy behind the proposals. The White Paper proposals regarding General Education and the changes made by the Government when it came to power in 1977 seem to fall into one general pattern with its own philosophy. In

45. *The needs of Asia in Primary education: a plan for provision of compulsory education in the region, Unesco, Paris,* 1961
46. *Population and Social Development Communication Newsletter,* Vol. 2 December 1979, editorial.

1977 the Government appointed the high-level Premaratne Committee with wide terms of reference to study and report on all aspects of education. However, even before the Committee had started its deliberations the Ministry of Education abolished most of the steps introduced in 1972. The NCGE and HNCE examinations were scrapped and G.C.E. O-level and A.-level re-introduced. Arrangements were also made to hold the London A-level examination here. The main reasons given for abolishing the NCGE examination were that it had no predictive validity in selecting candidates for higher education and that it did not correspond to the general practice in other countries. The pre-vocational studies were down-graded. And now the neglect of Pre-School Education, the reduction of the period of Primary Education and lengthening of the period of Senior Secondary Education—the institution of a Grade 8 examination, the other quantitative controls provided—all these fall into place as parts of one consistent pattern. The philosophy behind such patterns has been referred to as 'elitist' or 'aristocratic,' paving the way for a class education as opposed to 'mass education.'

At the beginning of this study I stated the defects of the present system which the White Paper proposals were intended to rectify. Now it should be clear that the proposals cannot rectify any of those stated defects. On the other hand, some defects like the excessive emphasis on examinations will be aggravated.

There is another yardstick with which I should like to measure the White Paper proposals. The statement of policy of the new Government made on 4th August 1977 promised changes in education in the following terms:

> "There have been two standards of education, one for the people and the other for the kith and kin of persons who were in power. The Government will remove this discrimination and ....."

Extend to the rural schools all facilities and opportunities such as teachers, laboratories, comfortable and uncrowded classrooms, now enjoyed only by the leading city schools so that students from these rural schools can also study and compete confidently to embark on professional studies covering medicine, engineering, technology, accountancy, law etc.

I do not see any proposals capable of fulfilling these promises.

In conclusion I should like to address the following appeals to the Ministry of Education:

(i) Refrain from carrying out any of the proposals until they have been fully discussed and embodied in legislation.

(ii) Publish the Premaratne Committee Report.

(iii) Provide some form of Pre-School Education for all children.

(iv) Extend Primary Education to cover the entire school-age population.

(v) Restore the six-year period of Primary Education.

(vi) Consider afresh the idea of holding a Grade 8 examination.

(vii) Refrain from making English a compulsory subject at examinations till such time as facilities are made available for the study of English in all schools at a high level.

EMPLOYMENT, INVESTMENT AND PRODUCTION IN SRI LANKA 1959-80: REFLECTIONS ON WHAT THE FIGURES REVEAL*

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In a public speech in August 1980 President J. R. Jayewardene declared that the priorities for his administration were "employment first, employment second, and employment third". That the reduction of unemployment should be accorded the very highest priority has been emphasized by every member of that administration, and indeed all administrations since independence, in numerous speeches and planning documents. The Minister of Finance has called solving unemployment "the most pressing issue" and has planned its reduction from 20% in 1977 to 7% in 1984.[0] Unemployment, it is maintained, can only be reduced through policies which promote long-term growth and large-scale domestic employment generation. It is considered necessary to steer the economy by revitalising the agricultural sector because it is the largest single productive sector in the Sri Lanka economy (generating about 30% of GDP in 1979), because it is the major exporter and foreign exchange earner, and because it is the most labour intensive sector so its expansion is the fastest employment-creation mechanism available. Likewise, the extension of the manufacturing sector under competitive conditions is seen as necessary for generating exports and foreign exchange. On the other hand, it is obvious that many activities in the Services (including mining and tourism) and Construction

* This paper stems from Dr. Hallett's work as a United Nations adviser in Macroeconomic planning to the Government of Sri Lanka during 1980. The views expressed are, however, entirely his own. They cannot necessarily be construed to reflect the views of the Sri Lanka Government or the United Nations.

0 Speech made on 4th. September, 1980; recorded in the "Ceylon Daily News" of 6th, 8th and 9th. September, 1980.

sectors are also labour intensive. The expansion of ancillary industries can also serve the objectives of the administrations through the exploitation of multiplier effects within the economy.

In order that this growth of production, and hence the endogenous demand for labour inputs, should be both long run and sustainable, it is necessary that significant efforts be made to increase investment in the productive sectors. It is argued in the Sri Lanka context this requires policies which actively divert resources from consumption and into savings and investment. Although substantial contributions to investment come from foreign aid and other foreign sources, the attainment of the Government's objectives requires that as much investment as possible be internally generated, particularly since the recent trend of escalating costs of investment goods tends to reduce the real contribution made by those foreign sources. Increased domestic investment, moreover, ensures resources available for long-term growth are not pre-empted for short-term purposes. Also, they may then be allocated more easily to the labour intensive projects.

Compared with the earlier lack of emphasis on investment in Sri Lanka, the Government's aims call for particular attention to the planning of investment as a general overall strategy, and of investment and employment developments in the three sectors mentioned as particular cases within that general strategy. In an income-constrained economy this is the only approach which can serve the stated objectives, and is in contrast to import restriction, redistribution and welfare policies which had previously been tried. The preoccupation with the growth of production, employment, investment and export opportunities in the current plans have been set out definitively in the Government's planning document "Public Investment 1980-84" published in 1980:

"the development objectives are:

(1) the acceleration of the growth rate;

(2) the expansion of employment;

(3) the rehabilitation and expansion of the nation's capital stock; and

(4) a progressive improvement in the country's balance of payments".

Data requirements and their compilation:

Against this background, it is unfortunate that no data has been assembled for either investment or capital stocks in the three productive sectors mentioned. Nor have any figures been collected on a regular basis for total employment in the "organised" or "unorganised" economies; nor any figures at all for employment in the three productive sectors. There appear to be no plans to publish such figures in the future.

On the other hand, it is perhaps not surprising that this type of data has not been collected. In the continuing and increasingly competitive scramble for foreign aid and investments to finance the short-term trade, budget, and public saving-investment gaps (which are made as inevitable as they are substantial by the plans discussed above), the guiding development strategies are neglected in securing the details of these short-term objectives. The overall strategies remain good intentions, but without any specific or numerical form. Under this necessity to obtain aid and loans, the planners inevitably find that their time is taken up in accounting for the financing of those gaps, and in book-keeping to control the development of those gaps. The guiding strategies, and the data on which they depend, go uncorrected, unanalysed or incompletely specified, by default.

The purpose of what follows is to show that the relevant data can, in fact, be assembled rather easily from existing published sources. Moreover, provided certain procedures are observed as a sort of quality control on the reliability of the resulting figures, the data is of an accuracy adequate to assess the growth and employment-creation potential of the three sectors. Naturally, the figures presented below cannot be regarded as "accurate" in any absolute sense; but they are no less accurate than other published figures from the sources upon which they depend, and which are already liberally, used elsewhere. They, therefore, cannot be discriminated against

on those grounds. Thus strategic planning does not necessarily require any significant diversion of resources from the tactical operations of satisfying the repeated probes of the foreign aid "accountants" of the international aid agencies.

In Sri Lanka the main data sources are the Central Bank annual report, the annual Statistical handbooks of the DCS (Department of Census and Statistics) and the various IMF, World Bank, UN, FAO and ILO publications (most of which base their figures on those produced by the DCS). There are, however, a host of occasional papers, surveys, research monographs and figures collected by specific planning agencies in government service. It is the information contained in the latter, when pieced together, which vastly increases the body of data available for planning and which allows the generation of those series on capital stocks, investment and types of employment.

However, with multiple data sources the figures can only be reliable *provided* enough trouble is taken to construct the data set so that it is internally consistent. Under the proviso that this condition has been satisfied, then I agree with the two main commentators in this area - Pyatt and Roe (1977) p. 35 and Snodgrass (1966, p. 300)* who argue that Sri Lanka published data is no less reliable than others at an aggregate level, and certainly adequate for development planning purposes. Nevertheless, it is important to stress the necessity of satisfying this proviso because the Central Bank and the CDS use different definitions and methods in assembling their data, and discrepancies sometimes result. Some of the more spectacular examples are picked out by Pyatt and Roe (1977). The reasons for these discrepancies, and their resolution, are seldom hard to locate.

I have adopted the following policy in compiling data:

(i) every variable is collected from more than one source (if possible) to show up any potential problems;

* Who says "..... statistics available in Ceylon must rank us one of the most accurate in the world for a country of such low per capita income."

(ii) to cross check any accepted figure with other published figures;

(iii) no figures are computed by mixing sources (e. g. in obtaining real values from nominal figures and price deflators);

(iv) to be able to explain a discrepancy before selecting any one figure;

(v) never to use a provisional figure, and always to take any figure from the latest available issue of any publication since revisions are often substantial.

My data, while inevitably not perfect, does at least display the required information in consistent form (so the same errors affect the different variables and thus will have least impact on the deductions made from the data set, or on any relations derived from it).

Before passing from general comments to particular variables, it is impossible not to remark on this problem of data inconsistencies between multiple sources. It is a problem which must be faced, and removed where possible, for two reasons:(a) it is a waste of resources to duplicate services, and in Sri Lanka's case it is a waste of skilled manpower in an economy already restricted by a lack of skills; and (b) it causes no end of confusion when planners in different departments of government base their decisions on different values for the same variables, and ultimately it must lead to the frustration and failure of those plans. If the process of re-working published data is undertaken, then it is of course necessary for the same two reasons that the results become freely available within different departments of government (and outside). Finally, if the planners mix (without restraint) statistics which are not internally consistent and where the potential discrepancies are substantial, the plans and inferences based on these variables will be dominated by the methodological and definitional differences of the compilers, rather than by the economic facts. Plans are then in the absurd state of having been designed to steer the data compilation techniques rather than to have any desirable economic consequences.

The employment data.

The following sections discuss unemployment and capital stock figures data for the agricultural, manufacturing and services sectors during 1959-80. This sectoral disaggregation was dictated by the form of the development strategy which has been judged to be appropriate to Sri Lanka's economic circumstances. The starting point of 1959 was chosen as the first year of consistent development planning in Sri Lanka - albeit of a fairly non-technical and informal nature.1959 saw the launching of the first Ten Year Plan. Before that year piecemeal, project by project, investment plans had existed but no attempt was made to make them consistent or to integrate them with plans for the rest of the economy.* Moreover, the nationalist government, which took office in 1956, marked the break with the colonial past by introducing the first industrialization programmes.

(a) **Aggregated figures.**

The employment data are organised in tables 1-3. Table 1 summarises the overall position; population, labour force, total employment, total unemployment. The population figures come from the U. N. Statistical Year Book for Asia and the Pacific, and the ILO Year Book Labour Statistics, and are based on various censuses. The labour force figures come from various sources**.

These published figures, however, form an incomplete series. From the available figures, the following regression of the participation rates ($P_t = \frac{L_t}{N_t}$; L_t = labour force, N_t = population in year t; t = 1 in 1959)

* See Radhakrishnan (1979).

** ILO Labour Statistics; Central Bank "Consumer Finance Surveys 1963, 1973, and 1978"; Labour Force Survey 1968 and 1973; Central Bank, "Report on the Socio-Economic Survey of Ceylon 1969-70"; Central Bank "Land and Labour Utilisation Survey 1975"; Central Bank "The Determinants of Labour Force Participation Rates in Sri Lanka, 1973"; "Dimensions and characteritsics of the unemployment Problem" a paper by R. B. M. Korale in the Ceylon Department of Labour Gazette (1979 Vol. 30. No. 4); G. W. Jones and S. Selvaratnam "Population Growth and Economic Development in Ceylon" Marga (1972).

$$P_t = .001175\,t + .3443 \qquad (1)$$

was found to give the best fit; and one markedly superior to assuming constant average growth rates in the labour force or P_t, or to any autoregression in the labour force values or P_t itself, or to their regression on GDP variables. This implies the labour force is predominantly exogenously determined, rather than being influenced by economic pressures or past behaviour. The L_t series is completed by means of (1).

The total employment figures are based again on various sources.* From the available figures the following projection scheme was found to give the best fit:

$$\overset{\circ}{E}_t = a_t \overset{\circ}{G}_t \qquad (2)$$

where $\overset{\circ}{E}_t$ and $\overset{\circ}{G}_t$ are the rates of growth in employment and GDP respectively in year t. a_t is a time-varying, least-squares parameter fitted to the available data surrounding the interval where interpolations were required.

Finally, unemployment is determined as a residual.

It will be noticed that these calculations do not take any account of underemployment - the measurement attempted is solely a matter of whether a person has a job or not. Secondly, it is not possible to place any great weight on the precise unemployment figures since they are determined as a residual of two other figures, themselves inaccurate in the usual way. Being of fairly small size, the accuracy of the unemployment figures will of course be proportionally more affected by these accumulated errors than the larger figures from which they come. On the other hand, no other direct estimates are apparently available-except again as a residual derived from intermittent surveys. No further estimates in this paper will depend on these unemployment figures.

* The same sources as for the labour force data; The Employment Surveys-Department of Labour, 1971-9, P. J. Richards (1971) "P roduction and Emplo yment in Sri Lanka" ILO (Geneva);

There are abrupt shifts in unemployment in 1965 and 1968, which probably reflect some changes in methods of assessing the labour force between 1964 and 1965, and between 1967 and 1968, rather than any problems with the compilation methods described. In contrast, the abrupt shifts of 1970/71 and 1974 follow sudden drops, away from the trend in employment, and which are related to falls in GDP. Those latter shifts no doubt reflect, respectively, the fall of activity associated with the unrest and eventual armed insurgency, and that associated with the world recession induced by the rise in oil prices. Finally, it is clear from the general trend of these figures that unemployment has stubbornly remained too high for a long period-between 17% and 20% since 1965, having risen steadily since 1959. Unemployment on the scale observed in the recent government planning documents is not a recent phenomenon; nor is it showing any signs of falling towards 7% by 1984 as planned*.

(b) **Sectoral employment.**

Table 2 sets out total employment in the "organised" economy, disaggregated between the agriculture, manufacturing and construction, and services sectors. Employment in the "unorganised" economy is then obtained as a residual, using table 1. No attempt was made to disaggregate "unorganised" employment between sectors because there was no data on which to base such a split, and in any case it would be of no interest for planning purposes. The figures for organised employment have been compiled based on the number of accounts in the Employees Provident Funds** which accounts for all employees in any establishment employing five persons or more. Figures are also available on the number of active accounts in the Provident Funds (active meaning being used for the full year); but that latter figures are always less than the number given as employed by the regular Employment Surveys of the Department of Labour for the same definition of establishments. A negative employment in establishments of five or less is clearly absurd, so the figures for active accounts were abandoned. The differences

* nor as claimed in the Consumer Finance Survey (1978) from 20.7% in 1977 to 16.8% in 1978, or 15% in 1979 (by Minister of Finance, September 4, 1980)

** extended to cover all forms of government services except the armed and security forces.

can be accounted for by people changing jobs, entering and leaving "organised" jobs, entering and leaving the country etc. This does, however, suggest that my figures overestimate "organised" employment. Nevertheless, as any definition of what is "organised" and what is "unorganised" employment is arbitrary, these figures represent a convenient working definition.

Agricultural employment over the period has increased very slowly-by some 50%, or 2½% p.a. - and shows the effects of insurgency and the nationalisation of the plantations. Manufacturing employment has increased rapidly (especially since 1976) - by some 1100%since 1959. Services employment has increased by some 700%. Agriculture, however, still remains the largest employer in 1979 with nearly twice the employment of services. Moreover, these figures exclude any small-holders. Yet agriculture's slow growth must surely cast doubt on how much more labour demand it can generate in the future. However labour-intensive the job now being performed in agriculture is, if there is little scope for additional demand or further growth in that sector then little extra endogenous employment creation will be forthcoming despite the Government's plans. To resolve that difficulty of course requires a study of the agricultural markets, and/or of any constraints on growth within the agricultural sector.

The trend in "unorganised" employment has been steadily down until 1970, which no doubt reflects steady increase in sophistication and industrialisation of the economy. The rise in 1971/2 may indicate the uncertainty in the economy consequent on the insurgency and nationalisations. Local fluctuations in "unorganised" employment are likely to be the most sensitive barometer of economic activity and the public's expectations for it. Thus one may surmise that by 1978-9 the development plans had some effect in raising activity; but progress was very slow.

(c) Skilled employment.

In order to be able to investigate further the slow growth of the agricultural sector, the organised employment figures were disaggregated into skilled and unskilled. That was extended to the other sectors. This split is based on figures for those categories given in the

regular Employment Surveys carried out by the Department of Labour. The various publications which gave the total employment figures of table 1, also gave proportions of employment skilled labour in agriculture and manufacturing. The remaining figures for skilled employment were then interpolated by least squares regressions of those proportions on sectoral production. Services skilled employment followed; and thus the unskilled employment figures by subtraction. Table 3 sets out the results. The definition of skilled is a very broad one, comprising all professional, technical and managerial staff, craftsmen, skilled and semi-skilled workers. Clerical, sales and domestic staff, unskilled workers and labourers remain in the unskilled group.

It is immediately obvious that one problem in the agricultural sector has been the rapid loss of the skilled work force since 1971—amounting to as many as 20% of the skilled workers per year. No industry can be expected to register any growth under these circumstances. Indeed the simple correlation coefficients between skilled and unskilled employment since 1971 are approximately —.55 for agriculture, + .1 for manufacturing, and + .8 for services. This clearly suggests that the recorded performance of the agriculture sector has been attained by extensive substitution of unskilled labour for skilled labour inputs.

It is certainly true that while this remains the case the government's planned growth and intended employment creation, which depends heavily on agriculture, cannot come about. Whether it would come about if this skilled labour constraint were relaxed is another matter. The figures suggest not: and as we shall see below agriculture has also been constrained by a relative lack of investment in recent years. The success of the government's programme depends furthermore on the demand for the agricultural products. Purely exogenous factors, such as the weather, can also have an influence. Indeed, this investigation into the skilled employment figures was prompted by the strident complaints in the Central Bank Annual Reports of 1978 and 1979 that bad weather, bad management

and bureaucratic or political interference were responsible for failures in agricultural performance. The point being made here is that such reasons could also be responsible, but none of them are relevant until the constraints on the labour and capital inputs to the production process are removed. Even if the bad weather and interference could be remedied, agriculture would still not perform better for reasons endogenous to the production process itself. Until these reasons are remedied, agriculture will fail to grow or create employment.

One should add that the real growth in manufacturing (nearly twice that of agriculture since 1959) has been achieved without skilled and unskilled labour inputs being used as substitutes or complements. Likewise the real growth in services (more than three times that of agriculture since 1959) has employed skilled and unskilled labour in a strongly complementary fashion. Services also appear to have suffered some losses and consequent restrictions in skilled labour inputs in the period 1973-7, although this is small compared to the agriculture case. Since it is principally the unskilled who constitute the employed, this does suggest that the employment creation prospects lie strongly with the services sector, for the near future, rather than elsewhere in the economy.

Investment and capital stock estimates

Tables 4 and 5 display estimates of investment and capital stocks for the three aggregated sectors; agriculture, manufacturing, and construction, and services. The investment figures are in current prices, taken from various issues of the Central Bank Annual Report. Investment figures are given there as gross capital formation by end uses and can be allocated reliably between these three aggregated sectors. But they could not be allocated between sectors defined at any lower level of aggregation. The figures are constrained to sum to the investment figures for the whole economy given in the same publications. Unfortunately no investment price deflators are available for these three sectors, so it is necessary to work with one aggregate deflator as an approximation in each sector. I have included this in table 4, and it is taken from the U. N. Yearbook of National Accounts Statistics, Volume II.

(a) The calculation method:

Table 5 contains estimates of the capital stocks for the three sectors. The figures are in current prices and are evaluated at *replacement cost*: that is they are calculated as follows,

$$K_t = K_{t-1} + I_t - (d - \overset{\circ}{q}_t)\ K_{t-1} \qquad (3)$$

where K_t is the capital stock in year t, I_t the investment for that year, d is a constant rate of obsolescence (depreciation and wearing out), and $\overset{\circ}{q}_t$ is the rate of increase in investment prices. Table 5 now follows from table 4, given K_o for 1959 and a figure for d. In order to set K_o, I took *average* capital-output ratios for 1970 from Tyler's study, which is based on the Pyatt and Roe national accounting data (Tyler (1976), Pyatt and Roe (1977)), and made the arbitrary assumption that they also applied in 1959. Then I applied (3) to generate K_t for each sector as far as 1974 for which capital stock figures were available from the Ministry of Industries "Survey of Production" completed in 1975-6. To the extent that the generated K_t figures for 1974 implied a capital - output ratio above (below) that inferred from this "Survey of Production" my arbitrary starting capital - output ratio was adjusted down (up) by the same amount. New K_t sequences were then generated by repeating (3) from these new K_o values, and new comparisons of the actual and generated capital-output ratios in 1974 were made. This procedure was repeated until a K_o combined with (3) and the figures of table 4 give the observed capital output ratio of 1974.

All these calculations were done in terms of *historical cost* (i.e. $\overset{\circ}{q}_t = 0$ all t) because the survey mentioned evaluated capital at historical costs. These calculations were begun by using Tyler's capital output ratios for 1959, rather than for 1970, because any error in K_o, say e, will be reduced in each subsequent K_t. This way e affects the members of the K_t sequence less than in any other use of (3). In particular the error K_t is only

$$\prod_{i=1}^{t} (1 - d + \overset{o}{q}_t) \; e \qquad (4)$$

where $(1 - d + \overset{o}{q}_t) < 1$. In this application, by 1974 the error is 46% of its original value. However, if the iteration has a unique convergence point (and (4) suggests it has) then the final estimates are independent of my original assumption for K_o.

The final problem is to set d. Examination of the expenditures of the Government's own annual gross investment allocations during the 60's revealed that roughly 10 - 15% was spent on maintenance and repairs. Thus , if this is to include building and replanting in the plantations (both of which have longer economic lives than machinery) a depreciation rate of 6½% p.a. seems a reasonable estimate foi d. It implies 51% of a given investment survives 10 years.

(b) **Implications of the capital stock figures:**

From (3), and now with q_t derived from table 4, table 5 is computed to show capital stocks available at the start of the named year. If the investment price index refers to the price reached at the given year's end, then the average real capital stock potentially in service during each year can be estimated by averaging adjacent investment price indices and applying them to table 5. This gives table 6. Notice that agricultural and services capital stocks have run down over 1959-69 and over 1959-71 respectively. The insurgency and nationalisaion periods also show slight falls. In current terms there has been a fast increase in capital since 1977; but in real terms these increases turn out to be rather moderate.

I have computed the real value of the capital stock in 1975 prices for 1975-9. In fact, the capital stocks increased remar kable little in real value over those years, although there was some imp rovement over the previous five year period. Evidently there is an opening here for an argument that devaluation, and the extremely high interest rates which were operating by 1980, however desirable from other considerations were very damaging to the stated policy objective of rapidly raising the levels of investment. The ability to raise investment has only just outrun the concurrent price rises.

Table 4 also shows how erratic investment behaviour has been in certain periods. In agriculture it is merely static from 1959-65 and from 1969-73 inclusive. In manufacturing it falls during 1959-61, 1963-5, and 1969-71. With these low end often falling investment levels there is no way in which falling capital-output ratios can be avoided for substantial parts of this 21-year period. However, when investment accelerates the figures for real output in each sector also accelerate very suddenly, and without any lag in their responses. These observations taken together point strongly to very low capacity utilisation rates throughout both the 60's and 70's. Indeed, looking ahead again to table 6 we can see that, in real terms, the capital stock of agriculture and of services hardly increases over the whole period 1960 - 1979, whereas in manufacturing it increases five - fold. That reinforces my earlier point that agriculture has been sold short in terms of investment, and suggests the same is also partly true for services. Of course the biggest potential employers are in agriculture and services, so it is to be hoped that the plans of the present government, will meet with some success. On the other hand it is small wonder that unemployment so stubbornly refused to fall during the 70's since these are also the labour intensive sectors.

A related point, from table 6, is that the large increases in manufacturing capital stock (4700% between 1960 - 1979), which happen not to be matched by similar sized increases in real output (only 132% between 1960 - 1979) mean that overcapacity will be very much more serious in that sector than the others and it will have been getting worse throughout most of the 70's. In contrast real capital stock has scarcely increased in agriculture or services over the same 20 - year period (less than 5% in both cases);whereas real output for these sectors has increased by 73% and 143% respectively, i.e. of a similar order to that in manufacturing. These comparisons underline the favoured status of the manufacturing sector and how its potential has failed to be exploited; or equivalently of the constrained development opportunities in services and agriculture. Once again the scope for growth and endogenous employment creation is limited unless these internal constraints are relaxed. The easiest and cheapest methods of doing that would be to raise capacity utilisation in manufacturing, and to extend the services industries.

As an aside, it is impossible not to draw attention to the power of the Government to influence the pattern of economic development, and to the dangers which that carries for the speed at which objectives are attained if plans are not monitored and revised or adjusted in an alert and informed manner.

Notes on production function characteristics.

(a) Tables 7,8 and 9 show the capital - output ratios implied by the capital stocks just estimated; in current terms, in real terms, and during the past five years (1975-79 inclusive). Estimates (in real terms) for the agricultural sector average rather higher than the .58 figure given by Ramanujam (1976) - but Ramanujam argues that his estimate is rather too low, and it is indeed below the range suggested by the Central Bank Reports of 1965 and 1974. On the other hand estimates for the nonagricultural sectors average neatly halfway between Ramanujam's figure (2.83) and the Central Bank's suggested range (2.0 - 2.2)

The main conclusion to be drawn from these tables is that capital output ratios have been far from constant over this period, not even in real terms. Any production function, and a Leontief Input-Output matrix production technology as a special case, would be specified in real terms. Moreover in a labour surplus economy such as Sri Lanka (this seems indisputable with unemployment in the 15%-20% range, and the land army experiment mop up surplus labour, as examples; yet there is a case, as above, for saying skilled labour was in short supply) it would be the capital-output ratio which specifies potential production in an input-output technology. Since these ratios show no constancy, then an input-output matrix will provide a poor model of the supply sectors of the Sri Lanka economy. Even in the short-term of 1975-9 this appears to hold true.

On the other hand, with the possible exception of the figures for 1977 the changes in capital-output ratios over 1975-9 were of a similar order and nature to the average changes for 1975-9. This suggests that despite the rapid development of supply potential since the "liberalisation" of economic conditions in 1977, the basic

structure of the supply sectors has not changed. Rather, there has probably been an expansion of the same type of structure. Thus one can expect time series production functions of a conventional nature to hold throughout, without suffering any significant structural shifts. Hence a simple functional form, with time varying input-output ratios such as in the Cobb-Douglas production function, would probably be appropriate for Sri Lanka.

One useful lesson of this paper is to realise how far one can go in analysing the structure of production, as an endogenous engine of growth, without any sophisticated statistical or econometric modelling techniques. The analysis so far has depended on calculations done by hand. However, it is useful to reinforce the various conclusions reached with some illustrative examples of tentative production function estimates; they are merely illustrations designed to demonstrate particular features of potential production. Consider:

$$(XA—LAND—FERT) = \underset{(1.28)}{-3.672} + \underset{(1.69)}{.6429\,KA} + \underset{(.87)}{.136\,SLA} = \underset{(1.1)}{.0052\,W} \qquad (5)$$

$$rts = .8 \quad R^2 = .536 \quad \delta = .156 \quad DW = .9$$

$$(XA - LAND - FERT) = \underset{(2.07)}{-5.2} + \underset{(2.3)}{.8071\,KA} + \underset{(1.52)}{.2124\,SLA} \qquad (6)$$

$$rts = 1.02 \quad R^2 = .428 \quad \delta = .157 \quad DW = .95$$

$$XM = \underset{(2.08)}{1.794} - \underset{(1.26)}{.1608\,KM} + \underset{(5.13)}{.49\,SLM} \qquad (7)$$

$$rts = .48 \quad R^2 = .978 \quad \delta = .064 \quad DW = .73$$

$$XS = \underset{(.13)}{-.1224} + \underset{(1.88)}{.3362\,KS} + \underset{(18.46)}{.529\,SLS} \qquad (8)$$

$$rts = .855 \quad R^2 = .975 \quad \delta = .077 \quad DW = 1.67$$

where all variables are in logarithms (giving Cobb-Douglas production functions) and

XA = real (1970 prices) agricultural output, Rs. million

XM = real (1970 prices) manufacturing and construction output, Rs. million

XS = real (1970 prices) services output, Rs. Million

KA = real (1975 prices) agricultural capital stock, Rs. million

KM = real (1975 prices) manufacturing and construction capital stock, Rs. million

KS = real (1975 prices) services captial stock, Rs. million

SLA = skilled labour agricultural inputs; no of employees

SLM = skilled labour manufacturing and construction inputs, no. of man-hours/day

SLS = skilled labour services inputs; no. of man-hours/day.

LAND = no. of acres under cultivation.

FERT = fertiliser allocations from the fertiliser corporation: index 1975 = 100

W = weather index, rainfall in Sri Lanka as a deviation from a 35-year average 1944-79, inches (not in logarithms).

rts = returns to scale.

ϱ = standard error of the regression.

DW = Durbin-Watson statistic for first order serial correlation

t—ratios are given in parantheses.

The data sources are the tables of this paper, excepting the output variables which come from the Central Bank's annual reports, W which is from the DCS statistical yearbooks, and LAND and FERT are from the FAO Yearbooks of agricultural statistics and figures supplied by the Ceylon Fertiliser Corporation.

Equations (5) and (6) are for comparison only. They show the output of agricultural products as a whole, per acre and unit of fertiliser, is insignificantly affected by the weather between 1959 -1979. Its impact on, and partial correlation with, total output in this form is small and statistically insignificant. Moreover removing that variable affects the estimated coefficients remaining very little, so these conclusions are correctly applied to W itself and are not the result of W's associations with other variables in (5). Secondly, the

returns to scale in agriculture are not significantly different from unity - see equation (6) as an unmodified production function. As expected, underutilisation of capacity appears not to be a problem in agriculture. However these functions show poor degrees of fit and low DW statistics, which suggests that there is a misspecification most probably in the form of an omitted dynamic structure and other explanatory variables, Until improved specifications are found and estimated, we cannot here draw any conclusions about the roles of KA and SLA in determining agricultural output. All that we can say is that the weather, and capacity utilisation variables will not be among the explanatory factors in those improved specifications.

Equations (7) and (8) are the unmodified production functions for the remaining two sectors. Both appear eminently satisfactory from the point of view of degrees of fit, significance, and the signs and sizes of the coefficients (excepting KM). The problem with (7) is the low DW statistics and the very low and implausible returns to scale. This suggests that KM and SLM alone provide a very incomplete specification. In view of the perverse sign (and relative insignificance) attached to KM, the misspecification is almost certainly that of omitting capacity underutilisation which was so strongly indicated in the data. Notice therefore that this is a problem (on average) throughout 1959-79; it is also a problem with a very large impact implying probably 50%, or more, of potential production has been lost. Some of these capacity utilisation problems also show up in Services but to a much smaller extent. Perhaps around 15%-20% of production has been lost. Similarly the degree of misspecification appears likely to be smaller.

In both equations (7) and (8) skilled labour inputs play a very significant role as a constraint on production. The impact on Services output is somewhat stronger. If one finds support for the hypothesis that sectoral unskilled labour demand is a function of, inter alia, sectoral output, growth, and sectoral skilled labour inputs, then there is further powerful evidence in favour of the conclusions that growth and employment creation will in fact be achievable through manufacturing and particularly services, rather than via the attempted agricultural expansion. In any event, these figures clearly show that it is too simplistic to regard Sri Lanka as a labour surplus

economy. Careful planning sector by sector, in particular of skilled labour requirement, is a necessary (but not sufficient given the capacity utilisation and investment difficulties) conditon for future economic development.

TABLE 1

Employment and Unemployment (in thousands)

	Population N_t	*Labour force* L_t	*Total employment* E_t	*Unemployment* % of L_t
1959	9265	3515.6	3140.0	375.6 (10.6)
1960	9896	3540.3[e]	3183.2[e]	357.1 (10.4)
1961	10130	3551.0	3186.0[e]	365.0 (10.3)
1962	10380	3622.6[e]	3195.0[e]	427.6 (11.8)
1963	10646	3607.0	3199.7	407.3 (11.3)
1964	10903	3600.0	3150.0	450.0 (12.5)
1965	11164	3935.6[e]	3205.1[e]	730.5 (18.6)
1966	11390	4096.0	3285.7	810.3 (19.8)
1967	11703	4153.1[e]	3411.0[e]	742.1 (17.9)
1968	11992	4150.0	3674.0	476.0 (11.5)
1969	12252	4169.0	3610.0	559.0 (13.4)
1970	12514	4311.9	3285.0	1026.9 (23.8)
1971	12610	4488.0	3648.9	893.1 (18.7)
1972	12860	4639.3	3824.0[e]	815.3 (17.6)
1973	13090	4560.0	3767.0	797.0 (17.4)
1974	13280	4821.9[e]	3740.0[e]	1081.0 (22.4)
1975	13510	4957.0	3973.0	986.0 (19.4)
1976	13730	5017.3	4038.8	978.5 (19.5)
1977	13900	5096.1	4133.6[e]	962.5 (18.9)
1978	14350	5277.9	4272.2[e]	1005.7 (19.1)
1979	not available	5492.0[e]	4423.4[e]	1068.6 (19.4)

[e] denotes an interpolated figure

TABLE 2

Employment in the "organised" economy (thousands)

	Agriculture	*Manufacturing*	*Services*	*Total*	*"Unorganised" Employment*
1959	892.9	44.5	108.1	1045.6[e]	2094.4
1960	923.4	55.5	122.6	1104.6[e]	2078.6
1961	935.9	72.6	138.8	1146.9[e]	2039.1
1962	950.9	86.6	155.6	1193.2	1998.0
1963	1004.7	105.5	179.5	1289.7	1910.1
1964	1063.7	126.9	211.9	1402.5	1747.5
1965	1136.8	133.6	242.1	1512.5	1692.6
1966	1193.5	169.6	266.6	1629.7	1656.0
1967	1259.3	189.4	292.7	1741.5	1669.5
1968	1324.5	211.0	309.2	1844.7	1829.3
1969	1309.7	241.3	322.7	1873.7	1736.3
1970	1349.2	269.6	339.4	1958.2	1326.8
1971	1329.4	310.8	445.6	2085.8	1563.1
1972	1340.5	341.7	522.5	2204.7	1619.4
1973	1344.8	373.5	564.3	2282.6	1484.4
1974	1338.0	396.6	604.4	2339.1	1401.0
1975	1346.8	417.1	659.1	2423.9	1550.1
1976	1344.9	443.8	708.1	2497.1	1541.8
1977	1402.6	472.9	750.6	2631.6	1501.9
1978	1408.6	506.0	820.6	2735.2	1537.0
1979	1413.1	537.4	892.8	2843.2	1580.2

e denotes an interpolated figure; from $p^t = .0152\ t + .4027$ by least squares, where $P_t = \frac{OE_t}{L^t}$ in year t, and OE_t = organised employment. The leading three figures in the services column are based on these interpolations.

TABLE 3

Skilled labour employment (thousands)

	Agriculture	*Manufacturing + Construction*	*Services*
1959	134.7	20.7	32.4
1960	134.4	27.1	36.8
1961	131.1	33.3	41.6
1962	128.0	39.7	46.7
1963	129.8	48.1	53.9
1964	131.6	57.0	63.6
1965	134.5	59.6	72.6
1966	134.8	74.4	79.9
1967	134.7	88.0	87.8
1968	135.1	98.1	92.8
1969	126.5	114.6	96.8
1970	123.0	129.7	107.8
1971	116.7	151.3	133.8
1972	106.3	147.6	156.2
1973	87.8	142.7	163.7
1974	102.3	166.6	156.2
1975	91.0	191.0	153.9
1976	81.2	193.5	154.8
1977	78.4	209.0	162.9
1978	60.4	213.5	191.8
1979	53.7	225.6	208.0

TABLE 4

Gross Capital Formation, Rs million, current prices

	Agriculture	*Manufacturing + Construction*	*Services*	*Investment Deflator*
1959	150.0	503.3	489.1	71.8
1960	150.9	473.6	451.9	67.3
1961	152.0	495.5	453.1	70.3
1962	146.2	525.0	521.7	70.7
1963	150.2	522.4	458.8	65.5
1964	163.2	590.8	413.4	66.1
1965	154.4	509.8	428.9	64.8
1966	175.3	576.8	508.2	67.4
1967	196.6	681.6	566.8	72.0
1968	219.4	871.5	565.2	78.2
1969	290.0	1200.0	879.8	83.8
1970	258.0	1384.5	798.7	85.8
1971	280.0	1295.0	661.3	84.1
1972	308.0	1195.0	814.2	86.2
1973	309.0	1428.0	921.0	93.8
1974	414.0	1551.0	1143.7	99.9
1975	552.4	1856.5	1433.9	100.0
1976	765.0	2297.0	1882.6	113.8
1977	758.0	2441.0	2041.7	118.3
1978	1264.0	3969.0	4626.3	157.8
1979	1855.8	5827.2	5562.9	213.8

TABLE 5

Capital stocks at Replacement costs (Rs million, current prices)

Start of Year	*Agriculture*	*Manufacturing + Construction*	*Services*
1959	3251.2	1727.4	10231.9
1960	3189.9	2118.4	10055.9
1961	2934.7	2322.3	9227.7
1962	3026.8	2770.4	9492.9
1963	2994.5	3131.9	9454.5
1964	2729.9	3220.6	8602.8
1965	2740.2	3630.9	8535.4
1966	2661.7	3832.1	8238.8
1967	2770.5	4313.1	8541.0
1968	2975.9	5008.6	9135.2
1969	3258.1	5985.8	9893.1
1970	3569.6	7225.3	10838.2
1971	3681.3	8313.5	11192.6
1972	3649.1	8903.5	10904.7
1973	3811.1	9742.3	11282.7
1974	4032.5	10946.3	11944.2
1975	4446.4	12497.3	13087.9
1976	4714.3	13554.0	13684.2
1977	5823.4	16840.4	16565.8
1978	6432.9	18851.9	18185.0
1979	9426.8	27890.3	27701.3
1980	14014.4	41800.0	41292.0

TABLE 6

Real Capital Stocks 1960, 1975-9, (1975 prices)

Mid-year	*Agriculture*	*Manufacturing + Construction*	*Services*
1960	4862.6	3229.3	14458.5
1975	4446.5	12497.3	13087.9
1976	4410.0	12679.1	12800.9
1977	5018.0	14505.1	14346.9
1978	4659.8	13650.9	13168.0
1979	5073.6	15010.9	14909.2

TABLE 7

Capital output ratios, for current prices and replacement costs.

	Agriculture	*Manufacturing*	*Services*	*Overall*	*Nonagriculture*
1959	1.45	1.79	3.8	2.56	3.3
1979	.71	2.04	1.67	1.32	1.54
Average	1.08	1.92	2.74	1.94	2.42

TABLE 8

Capital output ratios, for real (1975) prices, replacement costs.

	Agriculture	*Manufacturing*	*Services*	*Overall*	*Nonagriculture*
1959	1.79	1.61	5.4	3.08	2.75
1979	1.09	4.15	1.45	1.89	2.16
average	1.14	2.88	3.42	2.48	2.46
average change per year	—0.35	.13	—.2		—

TABLE 9

Capital output ratios 1975-9, as in table 8.

	Agriculture	*Manufacturing*	*Services*
1975	1.156	4.29	1.59
1976	1.133	4.15	1.51
1977	1.167	4.87	1.61
1978	1.028	4.09	1.38
1979	1.098	4.15	1.45

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TABLES OF WORKING LIFE: SRI LANKA, 1971

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Sri Lanka is a country with a great dependency burden of 186 non-workers to every 100 workers. Computations from the 1971 census data reveal that the males enter the labour force late and retire early. The Sri Lankan females have a labour force participation pattern with an early peak and no shoulder. From the working life tables, it is seen that a Sri Lankan male had a work life expectancy of 39.1 years at birth. The new-born female, on the other hand, had a working life expectancy of only 13.2 years. Mortality does not take a heavy toll of the working life. A comparison with some South Asian countries shows that the Sri Lankan females have the highest work life expectancy.

The island nation of Sri Lanka has a unique demographic position among the South Asian countries. Most of those who drink Sri Lankan tea do not know that Sri Lanka has the lowest death rate, the lowest infant mortality and the lowest birth rate among the countries of South Asia. According to the 1981 World Population Data sheet (Population Reference Bureau, 1981), the crude birth and death rates in Sri Lanka are placed at 29 and 7 per 1000. (*Note: by Editor: The official figures in respect of* 1980 *are* 27.6 *and* 6.1 *respectively*) The infant mortality rate is estimated as 42 per 1000; and the life expectancy is some 64 years at birth. The Bureau of the Census (1977) in its demographic profile on Sri Lanka estimates that in 1970 - 1972, the male life expectancy at birth as 62.9 years and the female, as 65.8 years. In 1981 Sri Lanka is estimated to have a population of 15.3 million (slightly more than that of Nepal) growing at the rate of 2.2 per cent per annu n. (*Ed: The official figure is* 14,850, 001 *and the average annual rate of growth between* 1971 *and* 1981 *was* 1.7.) The population is very young and is only a little more urbanized

than that of India (27 per cent vs. 22 per cent for India).* Though much has been written on the mortality and fertility in Sri Lanka very little is available on the labour force dynamics of this population. In 1981, the dependency burden in Sri Lanka was 67 for every 100 persons in the 15 - 64 age group. (*Ed*: *The official figure is* 65. 7) Most of this burden was child dependency (60 per 100). (*Ed*: *the official figure is* 58) If we look at workers and non-workers, and compute the dependency burden, we see that there are 186 non-workers for every 100 workers. If the unemployed are also excluded from the workers and added to the non-workers class, the dependency burden rises to 252 for every 100 working members of the population. Tables of working life have already been prepared, for Bangladesh (Huq,1978), India (Gnanasekaran,1960; Krishnan, 1977), Nepal, (Krishnan, 1982), and Pakistan (Bean, 1967; Krishnan, 1981.) In this paper our aim is to present working life tables for the men and women of this island nation, provide a better indicator of the economic demographic situation and compare that with hose of her neighbours.

Data and Methodology

The data for this study have been taken from U. S. Census Bureau's (1977) country demographic profile on Sri Lanka. Evaluation of the the data done by the Bureau reveals that the quality of the data is not very high. The life table values developed by the Bureau for 1970 - 1972 have been utilized in the development of working life tables. The methodology suggested by the United Nations (1968) for constructing working life tables has been followed in this exercise.

Characteristics o the Labour Force

In 1971, the labour force of Sri Lanka consisted of 4.5 million people of which 3.3 million were males and 1.2 million females, aged 10 years and over. The mid-year estimated population of this country in 1971 was 12.8 million, thus yielding a crude participation

* According to Sri Lanka's Director of Census and Statistics the percentage of the urban population in relation to the total population is 22.4

0 The author is grateful to the Director of Census and Statistics, Sri Lanka and his colleagues for their comments on an earlier draft of the paper.

rate of 35.2 per 100. The crude male and female participation rates may be computed as 50.3 per 100 and 19.1 per 100 respectively. If the risk populations are changed to those aged 10 years and over, the refined participation rates are 68.5 per 100 for males and 26.0 per 100 for females.

Before we go on to look at the other characteristics of the labour force, it is worthwhile to note down the definition of economically active population employed in the census of Sri Lanka.:

> The economically active population is defined as all persons aged 10 years or over who: were engaged in any kind of work for pay or profit on a regular or seasonal basis, including unpaid family workers engaged in profit-making activities at least an average of 3 hours per day, and excluding those engaged in housekeeping; were looking for work for the first time; were unemployed but actively seeking employment; or were available for work but not actively employed because they felt that no work was available.
>
> (*Country Demographic Profile*: *Sri Lanka*, *p.* 12)

TABLE 1

Distribution of Labour Force , By Sex and Industry: Sri Lanka, 1971

Industry	*Per Cent Distribution* *Male*	*Female*
Agriculture, forestry, hunting and fishing ..	51.6	65.7
Mining and quarrying	0.5	0.1
Manufacturing	9.3	13.0
Construction	4.0	0.2
Electricity, gas, water and sanitation services ..	0.4	—
Wholesale and retail trade, restaurants and hotels	12.5	3.1
Transport, storage and communication ..	6.8	0.4
Community, social and personal services ..	14.0	17.3
Finance, insurance, real estate and business services	0.9	0.2
Total	100.0	100.0
No. of classified workers (in thousands) ..	2,572	763
Workers not classified by industry (in thousands)	741	412
Total labour force (in thousands)	3,312	1,176

Source: Bureau of the Census (1977), Country Demographic Profile: Sri Lanka, Washington: U. S. Department of Commerce.

One has to keep the definitional differences in mind, when comparing the work force participation differences between countries.

The distribution of the labour force. by sex and industry is shown in Table 1. it is clear that the primary sector is the dominant one in the Sri Lankan economy, accounting for a little over 50 per cent of the male, and nearly two-thirds of the female workers.

As in many of the developing countries, the tertiary sector tends to be the second most important sector of employment opportunities.

Table 2 depicting the per cent distribution of the labour force, by sex and occupation, presents another aspect of the same picture. Nearly 47 per cent of

TABLE 2

Distribution of Labour Force, By Sex and Occupation: Sri Lanka 1971

Occupation	*Per Cent Distribution*	
	Male	*Female*
Professional, technical, and related workers ..	3.8	9.3
Administrative, executive, and managerial workers ..	0.5	0.1
Clerical workers	6.0	2.5
Sales workers	9.2	2.2
Farmers, fishermen, hunters, loggers, and related workers	46.5	62.8
Production and related workers, transport equipment operators, and labourers	28.5	17.2
Service workers	5.5	5.8
Total	100.0	100.0
No. of classified workers (in thousands)	2,770	788

Source: See Table 1.

the male, and 63 per cent of the female workers have occupations pertaining to the primary sector. Nearly one-fifth of the male workers and a tenth of the female workers have clerical, sales or service types of jobs. Surprisingly, there are proportionately more females (nearly 10 per cent) than males (nearly 4 per cent) in professional jobs.

In Table 3, the distribution of agricultural and non-agricultural workers, by sex and status, is indicated. The sex differential is conspicuous. The male

TABLE 3

Distribution of Agricultural and Non-agricultural Workers, by Sex and Status: Sri Lanka, 1971

Status	*Per Cent Distribution*			
	Male		*Female*	
	Agri	*Nonagri*	*Agri*	*Nonagri*
Employers and workers on own account	50.5	18.1	12.3	11.2
Salaried employees and wage earners	43.0	81.0	72.2	86.2
Unpaid family workers ..	6.4	0.9	15.6	2.5
Total	100.0	100.0	100.0	100.0
No. of classified workers (in thousands)	1328	1244	501	262

Source: See Table 1.

prerogative of being an employer, or an own account worker is clearly seen in the data. This is true for both the agricultural and the non-agricultural sectors. Females are predominantly salaried employees or wage earners. Unpaid family workers are mostly seen in the agricultural sectors and the large female proportion here also cannot escape attention.

Age Pattern of Labour Force Participation

Age-specific labour force participation rates of the Sri Lankan males and females in 1971 are shown in Table 4.

TABLE 4

Age Specific Labour Force Participation, Sri Lanka, 1971

Age Group	*Labour Force Participation Rate Per 100*	
	Male	*Female*
10 years and over ..	68.5	26.0
10 - 14 years ..	6.0	4.0
15 - 19 years ..	48.3	26.7
20 - 24 years ..	88.9	43.1
25 - 29 years ..	96.9	40.2
30 - 34 years ..	97.7	35.2
35 - 39 years ..	97.5	32.9
40 - 44 years ..	96.8	30.8
45 - 49 years ..	95.7	29.5
50 - 54 years ..	92.3	24.7
55 - 59 years ..	81.1	17.6
60 - 64 years ..	66.2	11.0
65—	42.6	5.6

Source: See Table 1.

Males

The male labour participation in Sri Lanka is of the LL type—late entry and early retirement— as noted in Durand (1975). Most of the other countries in South Asia have an HH—early entry and late retirement-pattern. Sri Lanka has a higher literacy rate than many of her neighbouring countries; her better school system may also be contributing toward late entry into the labour force.

Females

The female age pattern is of the C1 type (early peak without shoulder). The labour force pattern attains its peak in the 20 - 24 age group and gradually declines as age increases.

A Comparison with Canada

The graphs of the participation of the Candian males and females and the Sri Lankan men and women are shown in Figure 1.

One can easily make the following generalizations:

a. Male participation rates are a little higher in Canada compared with Sri Lanka for all age groups except 15-19 and 65+.

b. At the ages of peak adult participation, a slightly higher proportion of males is seen in the labour force in Canada than Sri Lanka.

c. Participation rates for males in the 65+ age group are higher in Sri Lanka than in Canada. For "retired" females, the rates are similar in both countries.

d. Participation rates for females are generally lower in the island nation than in Canada.

e. While the Sri Lankan female age pattern is unimodal with the peak in the age group 25 - 29, the Candian counterpart is bimodal. In the figure, for Sri Lankan females a bimodality is noticed owing to the grouping of the data.

f. The female age specific participation rates are lower than the male rates in both countries; the Sri Lankan male-female differential is somewhat larger than the Canadian.

FIG.1.LABOUR FORCE PARTICIPATION IN CANADA AND SRI LANKA:1971

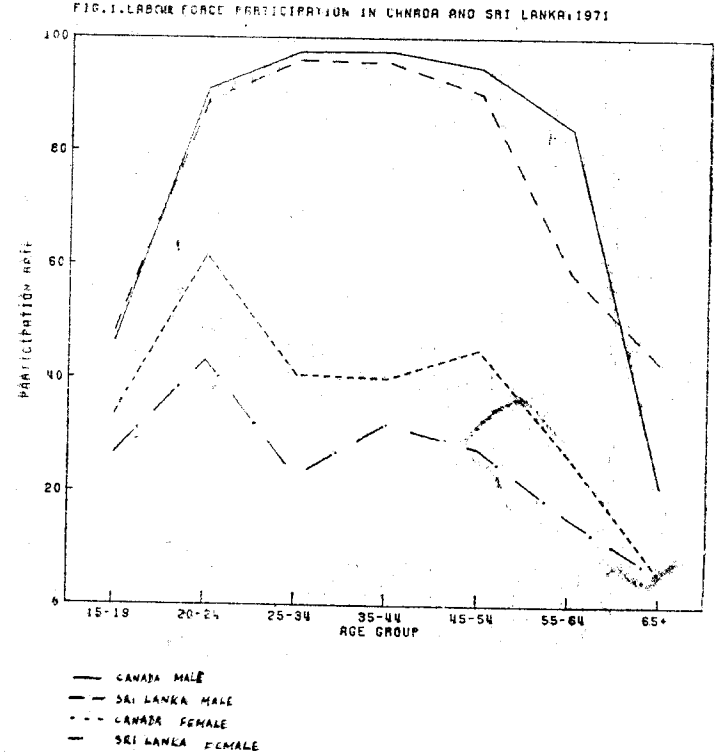

TABLE 5

Abridged Working Life Tables, Males: Sri Lanka, 1971

Age interval	*Participation rate in age interval per* 100	*Prob. of participation in the beginning of age interval per* 100	*Survivors at the beginning of age interval* (10 — 100,000)	*Expectation of life*		*Inactive years*	*Per cent life time inactive*
				Total	*Eco active*		
10 - 14	6.0	3.0	90,765	59.1	43.1	16.0	27.1
15 - 19	48.3	27.2	90,191	54.4	43.0	11.4	21.0
20 - 24	88.9	68.6	89,485	49.8	41.0	8.8	17.7
25 - 29	96.9	92.9	88,559	45.3	36.9	8.4	18.5
30 - 34	97.7	97.3	87,477	40.9	32.5	8.4	20.5
35 - 39	97.5	97.6	86,105	36.5	28.1	8.4	23.0
40 - 44	96.8	97.2	84,354	32.2	23.8	8.4	26.1
45 - 49	95.7	96.3	82,103	28.0	19.5	8.5	30.4
50 - 54	92.3	94.0	78,966	24.0	15.4	8.6	35.8
55 - 59	81.1	86.7	75,769	20.2	11.5	8.7	43.1
60 - 64	66.2	73.7	69,322	16.6	8.2	8.4	50.6
65—	42.6	54.4	61,749	13.3	5.7	7.6	57.1

Source: Computed from the data provided by the Bureau of Census Country Demographic Profile: Sri Lanka.

TABLE 6

Abridged Working Life Tables, Females: Sri Lanka, 1971

Age interval	*Participation rate in age interval per* 100	*Prob. of participation in the beginning of age interval per* 100	*Survivors at the beginning of age interval* (10 — 100,000)	*Expectation of life*		*Inactive years*	*Per cent life time inactive*
				Total	*Eco active*		
10 - 14	4.0	2.0	91,238	62.0	14.5	47.5	76.6
15 - 19	26.7	15.4	90,738	57.3	14.4	42.9	74.9
20 - 24	43.1	34.9	90,064	52.7	13.1	39.6	75.1
25 - 29	40.2	41.7	89,213	48.2	11.1	37.1	77.0
30 - 34	35.2	37.7	88.157	43.7	9.2	34.5	78.9
35 - 39	32.9	34.1	86,849	39.4	7.6	31.8	80.7
40 - 44	30.8	31.8	85.334	35.0	6.0	29.0	82.9
45 - 49	29.5	30.2	83,682	30.7	4.6	26.1	85.0
50 - 54	24.7	27.1	81,668	26.3	3.2	23.1	87.8
55 - 59	17.6	21.2	78,985	22.2	2.1	20.1	90.5
60 - 64	11.0	14.3	75,155	18.2	1.3	16.9	92.9
65—	5.6	8.3	69,190	14.5	0.8	13.7	94.5

Source: See Table 5.

Working Life Tables

Abridged tables of working life for the men and women of Sri Lanka, according to the labour force conditions in 1971, are shown in Tables 5 and 6.

Males

The working life expectancy (WLE) at various ages are shown in Table 5. According to the work force participation pattern in 1971 and the mortality conditions in 1970 - 1972, a new-born Sri Lankan boy had a WLE of 39.1 years against a life expectation (LE) of 62.9 years. At age 5, this WLE is computed as 42.6 and reaches a peak of 43.1 years by age 10. From then on, the WLE gradually declines with age until 55 and sharply thereon. Even at age 65, the Sri Lankan male could hope to have some 6 years of economically active life. The per cent of life time spent in non-economic activities is also shown in Table 5. It is 37.8 per cent at age zero, 32.8 per cent at age 5 and reaches a low of 17.7 per cent at age 20. This percentage from them on, increases with age.

Females

Table 6 presents the abridged tables of economically active life for the females in the land of tea plantations. A female baby at birth had a WLE of 13. 2 years, while having a LE of 65.8 years. At age 5, the WLE was 14.3 years (LE of 66.3 years) and the graph of WLE for females attains a maximum of 14.5 at age 10 and gradually declines till age 20. From then on, the decline is rapid At age 65, a Sri Lankan female had hardly one year of WLE.

The per cent of one's life time devoted to non-economic pursuits is shown for the females of Sri Lanka at various ages. It is seen that over 75 per cent of a female's life span is spent in non-economic activities. A good part of this is devoted to child-bearing and rearing. Another significant part cannot be used simply because job opportunities are not there. This is probably true of most of the developing countries of the world.

Loss in Working Life owing to Mortality

In most of the developing countries, the potential working life is sheared by many factors, notable among them being mortality. Since the LE is high in Sri Lanka compared with the many South Asian countries, we do not expect mortality to be the main agent curtailing WLE. The loss owing to mortality is computed and shown below. In this computation, the age group 65+ is taken as being of length equal to 15 years.

		Males	*Females*
(a)	Gross years of active life during		
	(1) 10 - 64 years	43.4	14.8
	(2) 10 - 79 years	49.8	15.7
(b)	Expectation of active life at age 10 ..	43.1	14.5
(c)	Loss owing to mortality		
	(i)	0.3	0.3
	(ii)	6.7	1.2
(d)	Loss as a percentage of gross years		
	(i)	0.7	2.0
	(ii)	13.5	7.6

Confining one's attention to the 10 - 64 age interval, the loss from mortality is negligible. If the 10-79 age span is considered, the loss is between 7 to 14 per cent of the gross years of active life. A sex differential in percentage loss is noteworthy.

Since mortality is not an important factor to be reckoned, why are the full years of potential working life not used? The answer lies in that the economic opportunities available are not sufficient to cater to the ever-growing labour force. This is the main feature of a developing country.

Length of Working Life: Trend in Sri Lanka

Estimates of WLE for Sri Lanka over time are not available. In the C.I.C.R.E.D. series on the population of Sri Lanka, the Department of Census and Statistics (1974) has presented a detailed account of the labour force, its industrial and occupational classifications, distribution by status and the rates of unemployment over time. Since crude participation rates by sex are noted for the

years 1946, 1953 and 1963 and estimates of life expectancies as well, it was decided to estimate the WLE at selected ages by using model working life tables developed by Chow, Lalu, and Krishnan (1981) With the help of simple linear interpolation, the WLEs at age 15 for males and females in Sri Lanka have been proxied and shown in Table 7. The figures for 1971 are from Tables 5 and 6.

TABLE 7

Estimates of Working Life Expectancy at Age 15: Sri Lanka 1946 - 1971

	MALE			*FEMALE*		
		Expectancy			*Expectancy*	
Year	*Participation Rate*	*Life at birth*	*Working at age 15*	*Participation Rate*	*Life at birth*	*Working at age 15*
1946 ..	57.8	46.8	41.4	18.2	44.7	12.9
1953 ..	53.1	57.6	43.9(7)	18.9	55.5	14.6
1963 ..	49.8	63.3	44.2	13.9	63.7	10.2
1971 ..	49.9	62.9	43.0	18.8	65.8	14.4

Source: The Population of Sri Lanka, 1974, p. 66 and the author's computation.

It is easy to see that over time, the male WLW shows a trend of improvement. The female WLE also depicts a similar behaviour. But during the period 1953-1968, while the male working life levelled off, the female working life declined, to rise to almost the same level in 1971. It is very difficult to comment on the general movement of the WLE with a small number of data points.

A Comparison with Selected South Asian Countries

In Table 8 are presented the WLEs at selected ages for the male and the female populations of Bangladesh, India, Nepal, Pakistan, and Sri Lanka.

International comparisons are not easy in view of definitional differences, and differences in cultural, social, religious and political aspects of the countries. Only very broad statements may be made and the results are not to be pushed to extremes.

TABLE 8.

Working Life Expectancy at Selected Ages for Selected South Asian Countries

Age	*Bangladesh, 1974*		*India, 1971*		*Nepal, 1971*		*Pakistan, 1978*		*Sri Lanka, 1971*	
	Males	*Females*	*Males*	*Females*	*Males*	*Females*	*Males*	*Females*	*Males*	*Females*
15	42.2	1.6	43.1	9.0	39.2	13.8	41.8	3.0	43.0	14.4
20	39.9	1.4	40.9	8.4	36.3	11.9	39.2	2.8	41.0	13.1
25	37.1	1.3	37.6	7.7	32.7	10.3	35.7	2.6	36.9	11.[illegible]
30	33.6	1.2	33.6	6.9	28.8	8.9	31.9	2.3	32.5	9.2
40	26.3	0.9	25.5	5.1	20.7	6.3	24.0	1.7	23.8	6.0
50	19.1	0.6	17.7	3.2	13.0	3.8	16.4	1.1	15.4	3.2

Source: Huq (1978), Krishnan (1977, 1981, 1982)

First let us look at the males. It is easy to see that the male WLE up to age 30 is highest in India, followed by Sri Lanka. After age 30, Bangladesh males have a slight edge over Indian males. The differences are neither much nor negligible . At this stage of our enquiry, we have no explanation for this differential in favour of Bangladesh.

As regards females, Sri Lanka does the best, followed by Nepal and then India. At older ages, Nepali women have higher WLE than Sri Lankan and Indian women. Pakistan and Bangladesh are able to provide only very low WLE values to their females, Pakistan faring a bit better. These two countries are Moslem and the attitude toward female labour force participation in Islamic societies is rather cold.

We require more information on these countries, on social and economic fronts, to explain the differentials in their WLEs.

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