INSTITUTE OF POLICY STUDIES

CONSOLIDATION OF FRAGMENTED PADDY LAND: IS IT REALLY NECESSARY ?

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1. INTRODUCTION

Sri Lankan agricultural policy has placed considerable stress, since independence, on extension of the country's paddy acreage in Dry Zone areas. This has been accompanied more generally by measures to support peasant producers and raise average yields, but by far the major thrust in terms of government expenditures on food production has been designed to increase acreage. This push has culminated in the Mahaweli development programme, the largest and most ambitious scheme, which has seen dramatic improvements in productivity on the land it has irrigated. In 1985, a record production year, the country's highest paddy yields (of 4,874 kg./hectare) were under these conditions, and they were a remarkable 40% above the national average. (CB 1985:32-33).

Though output has fluctuated from year to year with changing weather conditions, the long-term trend in paddy production has been extremely encouraging. The asweddumised area (the area prepared for paddy) has grown by 2% per annum since independence in 1948 (an increase of 90% over the total period). Total production has accelerated rapidly since the unfortunate slump of the mid-1970s. Over the decade 1976-77 to 1985-86 the average rate of growth in paddy output was approximately 5% per annum. With the completion of the Mahaweli, tank rehabilitation programmes, improved inputs, services and producer incentives, the government was aiming to raise production a further 11% by 1989. (PIP 1985:27). This was estimated to be sufficient to satisfy the local demand for rice given existing consumption patterns.

However, the end is in sight for the "opening up" of new land. The physical limits to colonisation have more or less been reached, and productivity gains cannot be pushed up indefinitely in the Mahaweli areas. Future rises in productivity will have increasingly to come across-the-board from existing areas of production, including those in the Wet Zone.

Wet Zone districts are notorious for their high population densities and for their high ratio of population to the available cultivable land. The picture that is conventionally painted is one of considerable fragmentation of paddy land, of people working minute plots using old-fashioned methods, and of limited gains that contribute little to the meagre subsistence that they are able to achieve. State-aided settlement can no longer release these pressures. It no

longer poses a plausible solution to the high rates of land hunger, unemployment and poverty in Wet Zone areas. What, then, is to be the role of the Wet Zone in an intensification strategy? In the foreseeable future Sri Lanka will be self-sufficient in rice. If real incomes rise in the lower deciles, the level of domestic consumption will no doubt increase, but if they do not rise (or if they grow very slowly) any surplus production may have a depressing effect on producer prices. For quality reasons, any surplus is quite unlikely to be exported.

Wet Zone production that is "inefficient" will simply have to compete or transfer to other crops. Or so it is argued. Attention will have to be paid to making it more efficient, consolidating many small and fragmented holdings into rational units. The objective must be the creation of viable holdings above a minimum size, sufficient to facilitate the introduction of new technology, to enable people to compete and to guarantee them the possibility of a reasonable standard of living.

This paper sets out to question this proposition and to clarify some of the policy requirements implicit in it. It is intended essentially as a background document. It collates and summarises existing materials on the fragmentation of paddy land in Sri Lanka, and on the attempts that have so far been made at consolidation. Based on these findings it then tries to trace parameters for a broader policy discussion. The paper itself is structured in six parts, dealing in turn with terminology, the causes of fragmentation in paddy areas, its extent, its effects, the legal basis for land consolidation, and past policy measures and the difficulties that were encountered in their implementation. A final section draws together general conclusions and identifies a number of research issues for further study.

2. TERMINOLOGY AND CONCEPTS

This section examines concepts and approaches that are used in Sri Lankan discussions on paddy land fragmentation and it looks at some of the assumptions that underlie them. Though terms such as "fragmentation", "excessive sub-division" and "consolidation" might appear on the surface transparent and self-explanatory, examination soon reveals that this is not the case. By their nature they are relative concepts; their definition and the subtleties of meaning attached to them vary quite considerably from country to country, and even within a given country at different points of time. An area that is considered excessively fragmented in the context of Sri Lanka may not be viewed with quite the same urgency in parts of Java; nor might one that is economically viable in Sri Lanka today, still be seen in quite the same way several decades hence.

Numerical cut-off points can be debated. However, this should not be allowed to conceal the fact that the terminology used ultimately derives a large and significant part of its meaning from the country's level of development, from the structure of its economy, perceived priorities, and the expectations that are placed upon agriculture. Strategies of consolidation have to take careful account of the incidence, nature and effects of fragmentation within a particular setting, and of an agrarian structure in which physical, social, political and economic factors all play their role. Interweaving these themes, and weaving macro and micro perspectives together, is a large part of serious strategy formulation.

2.1 Terminology

A conventional distinction in analysing the fragmentation of land is that between "sub-division" and "parcelisation". These two terms refer to different, though closely-related phenomena whose emergence is associated largely with local customs, traditions and laws of inheritance, but which can also reflect tenurial conditions, or results of the piece-meal purchase, sale or mortgage of land. Though there is some confusion in the terms people use to describe them, the phenomena themselves would seem quite distinct :

- **Sub-division** is understood to be the process whereby a single large holding is broken up into a number of smaller holdings; and

- **Parcelisation** is the process whereby a single holding comes to consist of a number of physically separate and discrete parcels of land scattered over a vicinity.

A holding is the extent of land that is cultivated by a particular operator. The latter may be a farmer, a household or a group of people who are working the land together. The important point is that the land they cultivate is worked and is being managed as a single unit.

A parcel is defined in census terms as an individual block of paddy land under undivided ownership and generally surrounded on all sides by land belonging to others. Though it is logically seen as part of a paddy holding, the latter can be -- and frequently comprises -- a single parcel of land.

Both sub-division and parcelisation are criticised on economic grounds. First, because the size of individual parcels, or of the total holding (or both), can become unworkably small. Secondly, because the operational distance between parcels or between parcels and the homestead can become unreasonably long.

Though they are rarely defined with any real precision, the terms "*micro-holdings*" or "*micro-parcels*" are also used in the Sri Lankan literature. On one level these can be taken as purely descriptive terms used to denote units of, say, half an acre or less. But behind them there often lies an implicit suggestion that parcels or holdings below a certain minimum size are too small to be efficient or to provide an adequate income. It is in this regard that many authors emphasise the "excessive" division of agricultural land (Binns 1950:5; Sanderatne 1974:308), implying sub-division beyond some viable point. The physical shape of the unit is also relevant, since awkward shapes hinder the use of draught power and are said to inhibit the introduction of modern methods.

A more explicit term that conveys a similar meaning is that of the "*non-viable*" *parcel or holding.* However, this is also in many ways a confusing term. It attaches a potential net value to the output of a given unit of paddy land, and if this is then found to fall below a predetermined level it is not said to be viable.

Though it is on the surface attractive, there are really two problems here. The first is that -- while it is quite clear that many holdings are so small that they are not likely to be viable

on any criteria -- the minimum necessary size can be interpreted, and hence defined, in different ways. It could be established, for example, on the basis of a given concept of productivity -- i.e. whether it will or will not permit the application of modern inputs and modern management methods. In such a situation the underlying question is whether, in purely economic terms, it permits an acceptable yield and a sensible output. On the other hand, the viability of a small holding has meaning in social terms -- i.e. whether it can provide the cultivator and his (or her) household with a minimally acceptable income or minimum standard of living. These are two very different ways of looking at the problem. They often reflect different interests (those of the more commercial farmers and those of poor peasants), and these may not coincide. The choice of definitions is therefore important.

The second problem is that, in practice, establishing a standard cut-off point is not at all easy. Even in purely economic terms the viability of a given parcel of land will depend on physical conditions, on the variety of paddy, the cost of inputs, prices and tenurage arrangements (the "share" or the level of rent that has to be paid) and a number of other factors, and as a result of which no rigidly-fixed acreage can be entirely satisfactory. The same is true on the social side. Paddy is rarely viewed by the peasant in purely commercial terms (it is after all a subsistence crop); it is rarely the sole source of income, and how long the harvest will suffice is likely to vary with local household arrangements and the number of dependants. There will always be a certain arbitrariness to any rule, however carefully it is calculated and however scrupulously applied. In this paper the position adopted has been to take in both dimensions and to look at a range of variations in the size of holding.

2.2 Types of holding

Conceptualising the fragmentation of paddy land has also to take account of the basis on which it is occupied. This is not only because tenants "lose" part of their earnings (by way of rent or by the payment of shares) that could redefine "viability", but because consolidation -- as a legal process -- has almost by necessity to deal with owners. There is a clear distinction between the ownership of land and a right to use it (statistically between "holdings by ownership" and "operational holdings"), many of the latter being closely prescribed by tenancy or share-cropping arrangements that are often temporary, frequently verbal and not always in practice protected by the letter of the law. Consolidation that increases economic viability -- makes paddy farming more productive and increases the net returns from a contiguous holding -- is likely to have a serious effect on the position of tenants. The difference between *ownership rights and operational rights* is therefore very important.

However, there are at least two complications in assessing the importance of tenancy. First is the range of variation that occurs (from money rents to sharecropping, or in the nature of the agreements) and in its relative significance (whether it is rented from a big farmer-cum-moneylender who controls much in the area, a relative, or a small absentee-owner who inherited a mere fraction of an acre). Sharecropping (*ande*) is known to be common in Wet Zone areas, where over one-fourth of operators would seem to belong to this category. There is also a second system, on a much smaller scale, in the Eastern Province (*podiyar-velian*) where a landlord rents out a large acreage for cash, and where the tenant then sublets it on a sharecropping basis to many small peasants. (Hameed *et al.* 1977:18).

The second complication in interpreting tenancy arrangements is the fact that many cultivators rent in only a part of their land, not the whole of it. This problem led ARTI, in its 1975 survey on the agrarian situation in the paddy sector, to categorise land by "the level of tenancy", i.e. the proportion of leased-in land to the total operational holding (ARTI 1975d:13). Given the small average size of holding, the prevalence of holdings in scattered plots and the relatively high proportion of owner-operators (compared to neighbouring countries), it is by no means unknown for owners to rent-in paddy land in one vicinity and rent it out in another. Interpreting the situation in practice is therefore extremely complex. Tenancy can pose problems for consolidation, but it can also be used to overcome some of the negative features of fragmentation.

A further phenomenon that complicates the question of fragmentation is that of *joint ownership* – a single plot of land co-owned by several people who take turns in its use. This acts as an alternative to sub-division when plots are already small. There would appear in Sri Lanka to be two main possibilities in this respect. In the first case the owners claim use of a piece of land in turn, i.e. a piece of land is rotated amongst several owners so that one (or a group) has its use for a particular year (or a particular season) and the remainder have to turn their attention to other activities (*tattumaru*). And in the second, several joint owners rotate a number of parcels amongst themselves so that each retains the use of some parcel of land at any time, albeit of differing size or quality, from year to year (*Kattimaru*). Given the nature of joint ownership, where there is little incentive to improve the land (and it is often of poor quality), it is frequently rented out to tenants on a share-cropping basis (*ande*).

A final point here is the distinction between *individual property rights and communal rights.* In much of the Dry Zone, the acreage that can be effectively cultivated in a given season is determined by the water level in the village tank. If less water is available, less land can be cultivated, and cooperative mechanisms of survival have traditionally been employed in severe periods of drought. These entail a division of the land that can be irrigated with the water available on a proportional basis (*bethma*) in which communal rights replace individual property rights to enable everyone to survive.

Fragmentation has to be seen not only in terms of the size of plot (and the returns to be gained from it), rights to the land are also an important part of the problem and these vary considerably in different parts of the country.

2.3 Underlying assumptions

Finally, comment must be made on some of the assumptions that underlie conventional thinking on the consolidation of land. The terminology that is used -- and much of the logic in which it is rooted -- is loaded towards the modernisation of agricultural production. It assumes that larger units are necessary, and therefore desirable to apply mechanisation and modern inputs and farm management methods. The latter are deemed to be of paramount importance if farmers are to stay in business and if their output is to grow.

There may be more than a grain of truth in this. But it is by no means clear that growth is the principal concern of peasant farmers. It is true that in most of the advanced industrial nations the average size of agricultural holding has grown and efficiency has increased, and

that development studies have for a long time accepted the notion that there was a causal relation between the two. In the 1950s, problems of fragmentation were "defects" in agrarian structure, "an obstacle" to agricultural and to economic development (UN 1951). Fragmentation was perceived as "a stage in the evolution of the agricultural holding" (Binns 1950:5). Consolidation was a natural adjustment to make the introduction of modern technology possible -- to make farming efficient. Consolidation was underway in the context of post-war Europe and Japan, in the Middle East, parts of India, Taiwan and elsewhere as well. Much of this logic would seem to be present in current thinking.

However, in the European case (and presumably that of Japan), there are two points of difference compared to the majority of Third World countries as we see them today. First, the degree of technological development in agriculture was already advanced. Farmers perceived the need for larger holdings; they felt pressures for larger farms in order to compete, and as a result they more readily agreed to consolidation. And secondly, the labour market was more developed. There were alternative sources of employment to which people could turn or preferred to turn. In Europe, therefore, and in Japan and Taiwan -- apparent "success stories" -- this was the case. Modernisation *preceded* consolidation, whereas today it tends to be seen as a *prerequisite* for agricultural growth. The latter view, that consolidation of micro-holdings is somehow a necessity, is one that is still commonly expressed. It may also be correct in certain instances. However, it is also clear that success is by no means assured.

3. THE CAUSES OF FRAGMENTATION

There are many reasons for the fragmentation of paddy land, and the mechanisms that bring it about are sometimes complex. Patterns of inheritance are generally considered the most important cause, though the loss of plots through sale or mortgage, specific characteristics of a particular plot, and a broad range of economic factors all play a role. Insights into this range of causes can be gleaned from the literature.

An important survey by Sarkar and Tambiah (1957) in the mid-1950s identified four principal causes of fragmentation in a Wet Zone Kandyan area. These echoed conventional FAO wisdom of the time (Binns 1950), and they would seem valid today. They were essentially the following:

- increasing population on available village paddy land;
- the existence of laws and customs of succession which prescribed the sub-division of properties amongst heirs on a "fair division" basis;
- the underdevelopment of industry and commerce, giving land a distorted value and seeing it emerge as the principal avenue of investment for those who accumulate money and, accompanying this, the lack of alternative employment opportunities, resulting in many people pressing in on the available land, and

> o the piece-meal but calculated accumulation of landed property by non-agriculturalists -- moneylenders, boutique-keepers and other rentier interests -- much of it acquired in the settlement of bad debts.

The absence of alternative employment and the pressures that this places on the available arable land is an important theme, which will be taken up later.

However, the fact that -- parallel to this subdivision -- there is seen to be a process of accumulation of land is an important observation. Pressures on land may be such that for many people holdings are getting smaller from generation to generation, but there are also others who are doing better and whose holdings are getting progressively larger. Some inherit smaller plots or lose land because of bad debts or because they lack the resources to retain it, but at the same time there are others purchasing this land or acquiring land through marriage to form larger holdings. There is an accumulation of land in the hands of prominent landowners and moneylenders (increasing differentiation), and the purchase of small, comparatively cheap plots of land by peasants who simply lack the capital to buy anything larger. (DCS 1954:31). The relative balance between these two processes varies from place to place and the latter may not always be so pronounced, but it is important that discussions of consolidation do not proceed on the erroneous assumption that peasant holdings en masse are progressively smaller or that the only force for change and for larger units is through state intervention.

The fact that there are different processes at work is crucial when it comes to the question of voluntary consolidation because different social groups are likely to have different, and often conflicting interests. Problems in one village where, for instance, there is no large owner, but a large number of small owner-operators with scattered parcels of land, are unlikely to be the same as in another, where a few large landowners-cum-mudalalis (moneylenders) are dominant and accumulating land. This is likely to be particularly so when the large landowners live outside the village and are less susceptible to family and community pressures.

If we turn to the Dry Zone, other dimensions emerge to complicate the view that fragmented lands have to be rationalised by consolidation. As we have already seen, fragmentation developed in tank villages as an integral part of the local culture of paddy farming. It was a way to spread risks in situations of rainfall uncertainty. The farming system as such has recently been summarised in the following terms.

> "(The) share (*pangu*) system was used as a means by which good / bad areas (e.g. those where water was easily accessible and those where it was not) could be divided more equitably. ...At the very inception of a tank the shares (*pangu*) that should go to the villagers are determined and the ownership of the shares distributed through the paddy track (*yaya*) ...Ownership of land passes from generation to generation. In tank irrigation villages, old land near the tank generally is divided into still smaller strips as "*pangu*", "*kala*" and *"elamaga".* Each family making use of a number of small strips of land is a feature of land tenure. When land gets restricted due to population pressure, the principle of exchange of land or user rights (e.g. *Tattumaru* and *Kattimaru*)

becomes prevalent in tank villages". (Economic Review, February 1986:6).

Land was allocated to people in several tracts, each of which was likely to have somewhat different characteristics in terms of soil, drainage, and the general reliability of cultivation. The apportioning of plots in different fields served to spread the risks associated with paddy production in the dry parts of the country, prior to the advent of modern irrigation schemes. Increasing pressure of population on very limited land then led to sub-division and rotation rights to its use.

The logic of this system has been analysed in detail by Leach in his study of Pul Eliya in the North Central Province (Leach 1961:Chapter 5) and by Obeysekera in his work on Madagama in the south of the country (Obeysekera 1967:117f). Leach argues forcefully that under tank irrigation, what is at stake is not really a share in land at all but a share in water, with a shared probability of sufficient water to cultivate paddy. Thus he writes the following of his village :

> "For every strip in the *pangu* portion of the Upper Field, there is a corresponding strip of corresponding width in the Lower Field. This pairing is an essential feature of the system. It is not possible to own *pangu* land in the Upper Field without also owning a corresponding piece of land in the Lower Field. Land can be bought and sold or alienated in other ways, but if an owner wishes to dispose of one-third of his *pangu* land he cannot simply dispose of that worst portion of it which is in the Lower Field. He will have to divide off one-third of his Upper Field strip and also one-third of his Lower Field strip. This fragmentation makes very good sense if it is remembered that what is being disposed of here is not really land at all, but rights to a proportion of the total water supply. The "fragmentation" that results is not an economic vice but a moral virtue!" (Leach 1961:158).

In situations of uncertain water supply this system has evident advantages. Farmer has described what occurs in periods of severe shortage in the following terms:

> "The village has an admirable system, known as *bethma,* under which, if the whole extent of the paddy field cannot be cultivated for lack of water, as many of the tracts as can be irrigated are divided, regardless of their ownership, between the peasants in proportion to their several holdings, and thus cultivated as a compact block with minimum waste of water". (Farmer 1957:558).

This is the conventional view, though it assumes that all Sinhalese villagers get on so well together that they can agree to the reallocation of land whenever water is short. This must surely be questionable. Nevertheless, the principle is clear. In those cases where every strip in the upper tract has corresponding strips in the lower tracts and there is a shortage of water, the system of allocation is such as to ensure that people always have a proportional share of the land that can be cultivated. If there is no improvement in water availability (or in the

reliability of the supply throughout the growing period), consolidation will not improve the situation for the cultivators as a whole.

Different villages tend to have slightly different ways of working *bethma* (cf. Farmer 1957:558; Leach 1961:170), but it is clear that here is an additional -- and very rational -- reason why an apparently fragmented system should emerge and could well be perpetuated. What emerges is "seasonal fragmentation" where communal rights prevail in a situation of crisis, and this is not at all the same as the permanent land hunger that is recorded for Wet Zone areas. It would seem very important to make a clear distinction between these two situations.

The question therefore arises as regards those cases in which consolidation of these paddy lands might be seriously considered -- if at all. At the local level there are practical situations where consolidation is *not* in any way relevant -- where fragmentation is unavoidable because of natural features such as outcrops of rock, streams, the degree of slope; where it is caused by the construction of buildings, roads, canals, reservoirs; or where it is rational from the point of view of agricultural convenience or of the needs of efficiency to spread risks, to place a greater variety of soils and growing conditions at the farmer's disposal, to separate areas with different soil characteristics or different drainage conditions, or to delineate regular boundaries for larger plots. (Binns 1950:9).

This is unlikely to account for a significant proportion of the fragmentation, but it serves to show that the fact that fragmentation exists is not *per se* an argument that consolidation is a pertinent issue. Various arguments will be marshalled in the course of this paper to underline this point, and only very few will be mentioned here -- some of a technical and some of a socio-political nature.

The experience of tank irrigation is one example. In such a situation seasonal fragmentation can -- as we have seen -- be advantageous in the absence of serious improvements in the water management system. More generally, cultivating parcels in more than one tract (or in more than one field) gives a farmer security, it protects him from the risk that none of his land will be cultivable in a particular season or all of it will be liable to the same pests or damage. Farmers can also -- and indeed do -- use different seed varieties and different management methods for the paddy that they grow on different parcels of land, ensuring additional security.

Finally, in a somewhat different vein, a landlord is in general likely to prefer a number of scattered parcels and to have a number of tenants, rather than a single plot, partly to increase the rent received, and partly, again, as a policy of risk avoidance. Since productivity per acre is highest on smaller plots (though not on minuscule plots), total returns and potential income for the landlord are likely to be higher on these, than in letting one large plot. Having many tenants places the landlord in a position of greater power and control in the local community. If parcelisation is confusing, consolidated units make social inequalities far more obvious and also far more public. Consolidation can have the effect of sharpening potential conflicts in rural areas; scattered parcels of land are far less conspicuous and that much safer.

Suffice it to say that assessing the problems and implications of land fragmentation is a complex task. The need for a careful, unemotional view of the issues has been stressed by Binns who aptly noted that:

> "It ought not to be necessary to record such self-evident propositions, but the history of "land reform" is so full of sad errors arising from the ill-considered application of sentimental or ideological generalizations that a *caveat* seems desirable". (Binns 1950:6).

The fact that fragmentation exists does not automatically mean that it is disadvantageous, or disadvantageous to everybody. Fragmentation is commonly associated in analysts' eyes with "micro-parcels" and with situations of poverty, while consolidation is tied with modernisation and higher standards of living. This may sometimes be true. However, logic of this kind can also be self-defeating in the formulation and implementation of a development programme. Paddy cultivators often view their land in a different way; alternative sources of rural employment may be equally important, and the interests of owners and operators, for example, may not coincide.

Discussions of policy have to be based on careful examination of the causes of fragmentation in particular areas, of the extent of the problem, and its effects on agricultural efficiency and people's standards of living. They have also to consider possibilities of effectively changing the situation, what practical measures would be necessary to carry this out, who would benefit, and whether such measures could ever be realistically implemented. These issues have to be analysed. But first, how extensive is fragmentation in the Sri Lankan case?

4. THE EXTENT OF FRAGMENTATION

Literature on rural development in much of Asia suggests that fragmentation is widespread and may be steadily increasing. This section examines the evidence that exists on the situation in Sri Lanka over the last thirty years, first at a macro and then at a more local level.

4.1 The macro picture

Since independence in 1948, and indeed even before then, there has been considerable concern for the small size of the average paddy holding in many parts of Sri Lanka. In the 1950s this emerged as a particular issue, and the thrust of the argument at that time was essentially the following:

> "The picture of our agriculture is the simple one of inadequacy of cultivated land, of its continuing shrinkage in the face of an increasing population, of a resulting pressure on land which stands unrelieved either by extension of cultivated area, or by the movement of the population out of agriculture into productive industry". (Kandiah 1950:170).

This position was echoed by the **Report of the Kandyan Peasantry Commission**. It quoted data to show that over 85% of asweddumised holdings in Matale District were of less

than an acre. The figure for Kandy was only slightly lower at 82%, with Badulla 77% and Nuwara Eliya 75%. (GOC 1951:91).

The Sarkar and Tambiah survey of 1957 confirmed the magnitude of the problem, at least in Patha Dumbara valley, in the Kandy area. (the survey site). About 41% of the 171 households with paddy land were found to have less than half an acre, and a further 27.5% between half an acre and an acre. Another 335 families had no paddy land at all. (Sarkar and Tambiah 1957:2).

The fragmentation taking place as a result of inheritance was considerable. Comparing the holdings of respondents (land they had inherited, plus land brought by their wives by way of dowry and/or inheritance, plus acquired land) with those that their parents had held at the time they died, the survey discovered a marked reduction in the size of holding. Whereas the average extent of the land that parents had possessed was 0.778 of an acre, their respondents, on average, had 0.365 of an acre, somewhat less than half. (*ibid.*:77).

With regard to the pattern of inheritance, two other interesting points were revealed by this 1957 study. First was the fact that brothers received substantially equal shares (a point raised earlier), whereas sisters received a much smaller inheritance. A comparison of land received by male respondents with that of their sisters revealed that the former had received two to three times as much. Secondly, and especially pertinent to the present discussion, they found that there was much more fragmentation of paddy land inherited from rich families than there was from poor families. There appeared to be a limit below which the process of fragmentation slowed, though no explanation could be given by the authors for this phenomenon. (*ibidem*).

Finally, they found that this gradual decline in the average size of the paddy holding was made far more problematic by situations of joint-ownership. This was common in the case of small pieces of paddy land of less than half an acre (*ibid.*:78). It could well be, therefore, that below a certain minimum size, joint-ownership was felt to be a more rational solution than further sub-division -- a point that was noted by Leach (1961:143) and by Obeyesekere (1967:18) in other parts of the country.

The Kandyan area was one of the most congested. Turning to the island as a whole, data provided by the 1946 Census and by the **Economic Survey of Rural Ceylon 1950-51** reveal that the situation was not quite as serious overall, though it was still disturbing. The 1946 Census (which would seem the more questionable of the two) found 31% of all holdings below half an acre and a further 33% between half an acre and an acre. The mean size of holding in these two categories was 0.2 and 0.6 of an acre, respectively. (DCS 1951). The rural survey, undertaken five years later, showed that of those agricultural families who had land, 22% fell into the first category (of less than half an acre) and 16% into the second (from half an acre to an acre). This was apart from the one-quarter of all agricultural families who had no land at all. (DCS 1954:30). While these two studies confirm the prominence of small holdings in paddy farming, there was clearly a considerable divergence in their views as to the scale of the sub-division that had been taking place.

Table 1: Size Distribution of Asweddumised Paddy Land, 1946

Size class (acres)	Number of holdings	%	Area (acres)	%	Mean size (acres)
Under 0.5	242,690	31.4	58,005	6.4	0.2
0.5- `1.0	253,823	32.9	147,376	16.4	0.6
1.0- `2.0	162,120	21.0	193,794	21.5	1.2
2.0- `5.0	85,310	11.1	231,726	25.7	2.7
5.0- `10.0	19,705	2.6	122,073	13.6	6.2
Over 10.0	8,260	1.1	146,996	16.3	17.8
Total	771,908	100.0	899,970	100.0	1.2

Source: Census of Ceylon 1946, Vol.1 pg.2, Department of Census and Statistics, Colombo 1951.

The general picture was analysed again a decade later by the agricultural census of 1962. This found 18% of paddy holdings below half an acre (with a mean size of 0.3 acres) and a further 23% between half an acre and an acre -- in line with the lower figures of the rural survey of 1951. Nevertheless, though they accounted for little more than 10% of the total paddy area, the number of holdings below an acre affected a large proportion (41%) of all paddy land owners.

Inexplicably, the information that emerged from the 1973 agricultural census revealed a dramatic worsening of the situation. Some 44% of all holdings were recorded in the first category (of less than 0.5 acres) and 23% in the second (0.5-1.0 acres), with a sharp decline in the proportion in the third (2-5 acre) category. At the same time, it confirmed what appeared to be a general trend from 1946 onwards of a steady increase in the mean size of holding in each category itself. The evidence it provides is therefore inconsistent.

Table 2: Size Distribution of Asweddumised Paddy Land, 1962

Size class (acres)	Number of holdings	%	Area (acres)	%	Mean size (acres)
Under 0.5	103,951	18.3	30,352	2.6	0.3
0.5 - `1.0	128,941	22.7	87,098	7.7	0.7
1.0- `2.5	189,540	33.4	283,955	25.0	1.5
2.5- `5.0	95,619	16.8	317,613	28.0	3.3
5.0 - `10.0	38,089	6.7	235,814	20.8	6.2
Over 10.0	11,513	2.1	180,356	15.9	15.7
Total	567,653	100.0	1,135,188	100.0	2.0

Source: Ceylon Census of Agriculture 1962, Department of Census and Statistics, Colombo.

Table 3: Size Distribution of Asweddumised Paddy Land 1973

Size class (acres)		Number of holdings	%
Under	0.5	291,742	43.6
0.5-	`1.0	154,465	23.1
1.0-	`2.0	84,636	12.7
2.0-	`5.0	127,412	19.1
5.0-	`10.0	6,200	0.9
Over	10.0	4,026	0.6
Total		668,481	100.0

Area data is excluded because of inconsistencies.

Source: Sri Lanka Census of Agriculture 1973, Small Holdings, Final Tables Stage I, Table 6, pg.17, Department of Census and Statistics, Colombo.

A separate study of paddy land distribution undertaken in 1976 seemed to lend some credence to the general pattern of the 1973 census data, finding 35% of all "holdings" below half an acre and 29% between half an acre and an acre. However, it is interesting to note that it classified by "operator", or "operational holdings", and that the number of operators was more than twice the number of holdings in the 1973 census.

This tended to suggest that what was at stake was a difference in definition between "ownership of holdings" and "operational holdings". If owners were dividing up holdings and renting them out as separate operational holdings, the number of the latter would naturally be greater and the average size of holding would be correspondingly smaller. However, this explanation is not borne out by the manual **"Instructions to Enumerators"** that was issued for the 1973 census.

Table 4: Distribution of Paddy Land Operators by Size of Holding, 1976

Size class (acres)		Number of operators	Distribution %
Under	0.5	450,929	34.5
0.5-	`1.0	376,342	28.8
1.0-	`2.0	230,253	17.6
2.0-	`5.0	198,534	15.2
5.0-	`10.0	41,684	3.2
Over	10.0	7,622	0.6
Total		1,305,364	99.9

Source: I.K.Weerawardena, Land Tenure Data, May 1977.

The evidence of the 1982 agricultural census is in this context interesting. First, it is more in keeping with the findings of surveys undertaken in the 1950s and 1960s than it is with more recent ones. If this is taken as a more reliable indication of the general trend (and there

are good grounds for doing so), then it becomes clear that fragmentation has not markedly increased. Indeed the 1951, 1962 and 1982 data on the proportion of holdings below half an acre, between half an acre and an acre, and below an acre in size, are remarkably similar (see Table 6). So too is the evidence at hand on the mean size of holding. In absolute terms there has been an increase in the number of holdings of less than one acre, and this too is important.

Table 5: Size Distribution of Asweddumised Paddy Land 1982

Size (acres)	class	Number of holdings	%	Area (acres)	%	Mean size
Under	0.5	140,790	19.1	34,880	2.8	0.2
0.5-	`1.0	180,680	24.5	108,420	8.9	0.6
1.0-	`2.0	175,240	23.8	210,910	17.2	1.2
2.0-	`5.0	198,750	27.0	531,550	43.5	2.7
5.0-	`10.0	32,160	4.3	190,210	15.6	5.9
Over	10.0	9,280	1.3	146,170	12.0	15.7
Total		736,670	100.0	1,222,140	100.0	1.7

Source: Sri Lanka Census of Agriculture 1982, Department of Census and Statistics, Colombo.

Table 6: Overview of the Proportion of Holdings in Selected Categories 1951 - 82

Size (acres)	Category	Year of Survey				
		1951	1962	1973	1976*	1982
Below	0.5	21.7	18.3	43.6	34.5	19.1
0.5-	1.0	16.1	22.7	23.1	28.8	24.5
Below	1.0	37.8	41.0	66.7	63.3	43.6

* NB. The 1976 survey classified by operator and not by holding.

On the other hand, a considerable amount of resettlement has taken place. A comparison of the 1962 and 1982 census data shows an increase in the 2-5 acre category to which the holdings allocated in settlement areas belong. It could be argued that this has relieved the pressure on the traditional paddy areas, though there is no hard evidence that people have relinquished land in the Wet Zone areas to gain land in the Dry, or that significant relief has been provided for those who remained behind in the congested areas.

The evidence of Table 6 shows, consistently, a large category of paddy holdings (at least 40%) that are of less than an acre, and a significant proportion (some 20% - or perhaps considerably more) below half an acre in size. It does not, however, support the view of progressive fragmentation relentlessly reducing the size of plot. The information is unclear in this respect.

4.2 Regional differences

Useful as it is, national level data conceals regional variations in the incidence of fragmentation. These variations are at times considerable, and without an analysis at this level there is no way of knowing if concentrated pockets of fragmented land occur that could be tackled effectively, or if they take the form of innumerable, scattered plots throughout most of the country. The latter would clearly be far less amenable to intervention by government.

The general situation can be gathered from disaggregated data on a district basis shown in Table 7. This data (obtained from the ten percent sample employed in the agricultural census) indicate the proportion of paddy holdings below certain selected thresholds in each district in 1982. "A paddy holding" is defined as land operated as one operational unit, regardless of title or the legal basis on which it is worked. Within this definition "a holding" can be made up of one or more parcels of paddy land and they can either be contiguous or widely scattered in the administrative unit concerned. The Table can therefore give only a partial, albeit useful, indication of the relative degree of fragmentation in different districts. Let us look at this Table.

Table 7 suggests that, on almost any criterion, the problem of micro-holdings is most acute in Kegalle and Gampaha, with Kandy, Colombo and the other Wet Zone Districts fairly close behind. The small average size of holding reinforces this view, with a high population density on the available arable land as a main causal link. Of the first ten districts, however, Colombo and Nuwara Eliya Districts comprise no more than a very small proportion of the national gross sown area (1.3% and 1.2%, respectively) and, while the problem of minute holdings may be primarily a Wet Zone phenomenon, it does occur in the Dry Zone to the extent of being visible on a district level. Suffice it to say, however, that the major areas of concentration would appear to be Kegalle, Gampaha and Kandy, with other noticeable pockets of extremely small holdings (less than 0.125 acre) in Hambantota and of holdings below 0.25 acre in Matara District.

Table 7: The Proportion of Paddy Holdings in Each District Below Selected Thresholds, 1982

District	Percentage of holdings below an all acreage of				Average size of holding
	0.125	0.25	0.5	1.00	
Kegalle	5.2	19.3	45.6	78.3	0.7
Gampaha	2.6	11.4	34.2	66.4	0.9
Kandy	3.1	9.2	30.0	64.4	0.9
Colombo	1.9	7.6	27.2	63.4	0.9
Badulla	1.1	7.4	30.8	60.9	1.0
Ratnapura	0.8	5.3	25.6	60.8	1.0
Nuwara Eliya	0.9	4.9	23.1	59.2	1.0
Kalutara	1.5	6.1	24.5	58.6	1.0
Matara	1.8	9.8	26.9	56.9	1.1
Galle	1.5	7.0	23.4	54.8	1.1
Kurunegala	1.3	4.6	19.2	47.7	1.3
Matale	1.6	4.8	19.1	46.5	1.3
Jaffna	0.4	2.5	14.5	42.4	2.2
Moneragala	0.3	1.2	10.5	31.3	1.5
Puttalam	0.5	1.8	8.3	26.6	1.9
Hambantota	2.7	5.4	12.2	25.0	2.2
Anuradhapura	0.2	0.3	1.6	9.4	2.6
Polonnaruwa	0.1	0.1	0.7	9.2	2.7
Amparai	0.3	0.5	1.3	6.4	3.2
Vavuniya	0.2	-	0.4	3.0	4.4
Batticaloa	0.1	0.3	0.8	2.3	4.6
Trincomalee	-	-	0.2	1.7	3.8
Mullaitivu	-	-	-	0.5	4.0
Sri Lanka	1.4	5.4	19.1	43.6	1.7

Source: Sri Lanka Census of Agriculture 1982, Smallholding Sector District Reports, Department of Census and Statistics 1985, Table 2.17

If the size distribution of these paddy holdings is disaggregated further, the picture becomes still more complex. It will be found that there is often as much, if not more, differentiation to be observed within these districts as there is between them. There are limited localities where the incidence of micro-holdings is especially acute. This can be seen in the following tables. Tables 8 to 10 show the proportion of paddy holdings below the same ceilings, by A.G.A. Divisions for Kegalle, Gampaha and Kandy Districts. Where a division is starred (*) this indicates that the number of paddy holdings is very small (1000 or less in the census ten percent sample).

The data in these tables reconfirm the general pattern; the size distribution of paddy holdings reflects a higher incidence of very small units in Kegalle, than in Gampaha, with both higher than in Kandy. This is consistently the case for all size categories, with one exception. There is a greater concentration of hoidings below 0.125 of an acre in Kandy than in Gampaha.

Table 8: The Proportion of Paddy Below Selected Thresholds in Kegalle District, 1982, by A.G.A. Division

A.G.A Division	Percentage below	of an	all acreage	holdings of
	0.125	0.25	0.5	1.00
Galigamuwa	10.0	28.5	57.4	85.4
Warakapola	7.3	27.6	56.9	83.9
Kegalle	6.4	22.5	50.3	82.1
*Deraniyagala	5.4	24.1	59.2	84.2
*Dehiowita	5.3	18.3	46.4	84.7
Yatiyantota	4.8	17.2	45.8	78.9
Aranayake	4.5	18.3	44.0	77.8
Ruwanwella	3.6	18.5	47.5	81.3
Mawanella	2.1	9.9	30.4	67.3
Rambukkana	1.4	8.7	30.6	69.2
Sri Lanka	1.4	5.4	19.1	43.6

Source: Sri Lanka Census of Agriculture 1982, (Smallholding Sector)
Kegalle District Report, Department of Census and Statistics 1985.

Table 9: The Proportion of Paddy Below Selected Thresholds in Gampaha District, 1982, by A.G.A. Division

A.G.A Division	Percentage below	of an	all acreage	holdings of
	0.125	0.25	0.5	1.00
Attanagala	3.5	16.3	43.1	73.3
Mirigama	3.3	18.1	44.3	74.7
Weka	3.0	11.2	32.5	66.3
*Negombo	3.0	10.0	19.0	44.0
Mahara	2.8	9.9	30.0	65.5
*Ja-ela	2.8	8.0	29.0	59.6
Divulapitiya	2.3	9.4	32.0	66.0
Minuwangoda	2.3	7.5	31.5	64.1
*Kelaniya	2.2	6.3	20.0	39.6
Biyagama	2.0	7.6	26.2	58.6
Gampaha	1.5	8.3	29.9	63.3
*Wattala	1.5	5.0	17.4	39.3
Katana	1.1	3.2	15.1	46.1
Sri Lanka	1.4	5.4	19.1	43.6

Source: Sri Lanka Census of Agriculture 1982, (Smallholding Sector)
Gampaha District Report, Department of Census and Statistics 1985

In no other A.G.A. division in the country is the percentage of paddy holdings below 0.125 of an acre, above 3%, with the exception of Badulla (Badulla District), Padiyatalawa (Amparai District) -- both of which have a very small area under paddy -- and Katuwana (Kurunegala District). There are a number of divisions that record a comparatively high proportion of holdings below 0.25 of an acre and these are recorded in Table 11. The cut-off point has been arbitrarily taken as 8%, or approximately one and a half times the national average.

Table 10: The Proportion of Paddy Below Selected Thresholds in Kandy District, 1982, by A.G.A. Division

A.G.A Division	Percentage of all holdings below an acreage of			
	0.125	0.25	0.5	1.00
Tumpane Patha	6.5	14.9	39.9	73.3
Hewaheta	4.9	12.5	33.2	66.2
Kundasale	4.3	12.0	38.7	73.5
Harispattuwa	4.2	11.7	37.8	72.0
*Ganga Wata Korale	3.9	10.3	39.3	71.4
Ganga Ihala Korale Patha	3.8	10.6	33.2	67.8
Dumbara	3.2	9.6	39.2	76.3
Yati Nuwara	2.7	7.5	26.1	63.2
*Panwila	2.4	8.5	30.1	73.5
Udu-Nuwara	2.4	7.9	25.7	60.9
Uda-Palata	1.9	5.4	20.8	52.5
Meda Dumbara	1.6	4.9	22.5	55.3
*Pasbage Korale	0.0	1.1	18.5	53.4
Uda-Dumbara	0.0	0.7	4.7	25.8
Minipe	0.0	0.1	1.3	12.8
Sri Lanka	1.4	5.4	19.1	43.6

Source: Sri Lanka Census of Agriculture 1982, (Smallholding Sector) Kandy District Report, Department of Census and Statistics 1985.

Here the fragmentation is much less extreme than in the cases of Kegalle, Gampaha and Kandy, though in individual divisions it can be quite severe. The distinguishing feature of districts in this group is the absence of micro-holdings of less than 0.125 of an acre (that was noted earlier), and the considerable degree of internal differentiation that they reveal (not shown in this table). In the case of Ratnapura, a predominance of small-scale holdings is to be found alongside divisions primarily consisting of larger ones. Only 3 out of 13 divisions are found in Table 11, the district average is 5.3%, and there are divisions (such as Embilipitiya) with 99% of holdings over a quarter acre. The same is true of Badulla where the district average is 7.4% and where, alongside the 7 divisions recorded in Table 11, there are 4 that have 99% of holdings above a quarter acre (Mahiyanganaya, Haldumulla, Kandaketiya and Ridimaliyadda). Similar contrasts can be found in Galle, Nuwara Eliya and Matara Districts.

The picture then is one of considerable regional differentiation, and within it one of scattered pockets where the incidence of fragmentation is particularly acute. Village studies would seem to confirm this interpretation (see ARTI 1977:6). Although it does not come out in district and divisional statistics, there is evidence of fragmentation in Dry Zone areas, with the possible exception of Hambantota and Matara. In general the proportion of holdings below an acre is comparatively small (less than 10% in Anuradhapura and Polonnaruwa Districts in 1982). However, in *purana* villages the existence of small parcels of land is -- as we have already noted -- well documented. What is less clear is its extent.

Table 11: The Proportion of Paddy Below Selected Thresholds in Remaining Districts, 1982, by A.G.A. Division

District	A.G.A Division	Percentage of all holdings below an average of		
		0.25	0.5	1.00
Colombo	*Kolonnawa	15.3	34.8	58.7
	Kesbewa	9.8	30.3	66.4
	Avissawella	9.6	29.6	64.3
	*Moratuwa	8.2	23.5	54.1
Badulla	Badulla	19.4	49.6	80.3
	Hali-Ela	13.6	46.8	81.0
	Uva-Paranagama	10.9	41.7	78.0
	*Haputale	10.8	39.5	73.8
	Passara	10.6	43.3	78.9
	Soranathota	10.1	47.1	84.2
	Ella	9.5	39.9	70.2
Ratnapura	Atakalanpanna	11.7	18.9	56.4
	Eheliyagoda	10.2	38.0	73.9
	Imbulpe	8.4	35.0	73.3
Nuwara Eliya	Kotmale	8.3	30.6	66.6
Kalutara	Walallawita	8.8	30.4	62.5
Matara	Kotapola	14.7	36.3	66.3
	Mulatiyana	11.4	33.0	69.4
	Hakmana	11.7	31.1	61.2
	Kamburupitiya	10.5	26.7	58.1
	Matara	10.1	27.7	55.9
	Weligama	8.6	22.8	33.6
	Malimboda	8.4	21.3	48.5
Galle	Yakkalamulla	13.1	33.5	64.8
	Labuduwe	10.4	25.2	50.1
	Akmeemana	9.8	26.4	56.5
	Beddegama	8.7	25.1	54.5
	Hikkaduwa	8.6	27.3	59.4
Matale	Katuwana	23.9	53.0	81.2
	Rattota	12.4	42.9	79.3
	Ukuwela	10.0	33.8	71.4
	Matale	9.4	33.2	67.6
Kurunegala	*Abanganga Korale	8.1	34.4	69.4
	Mahaarachchi-mulla	13.0	39.9	70.7
Sri Lanka		5.4	19.1	43.6

Source: Sri Lanka Census of Agriculture 1982, (Smallholding Sector) Kandy District Report, Department of Census and Statistics 1985.

This also appears to be true in settlement schemes. Thus, while Minipe scores well in the context of Table 10, the scheme itself has not escaped without difficulties. One observer has noted that :

> "Land sub-division has been common and in fact 61 per cent of the original allotments were found to be sub-divided. Today, the second and third generations of the original settlers still subsist

> on the original land allotments. With a rapidly expanding population and virtually no off-farm employment, this has been a natural consequence and has led to very small sizes of holdings, resulting in the highest "cropping index" for the Minipe area". (Amerasinghe 1977:115-166).

This problem would appear on the surface to have been contained by legal restrictions that have been designed to prohibit excessive fragmentation in the context of the formalised settlement scheme. However, Farmer's experience in early colonisation schemes led him to the conclusion -

> "that many allotments had already been unofficially partitioned, either between the original allottee and other parties, or between his successor and other parties. It is impossible to stop this unofficial fragmentation, for persons working on what is legally the land of one allottee can be passed off as labourers, helpful relatives and so on". (GOC 1958:176).

Hidden tenancy has also been noted in the H area of the Mahaweli development programme (Siriwardhana 1981), though the fragmentation of standard allotted holdings into smaller units is not an element of the problem that has been thoroughly documented.

4.3 The extent of parcelisation

Data on the size distribution of paddy holdings will always tend to underestimate fragmentation because the holdings can themselves consist of scattered parcels of land. If the size and distribution of the latter could be taken into account, the picture that emerged would in all probability be more acute. What the precise picture would be is difficult to estimate. There have been very few studies that have specifically analysed the parcelisation of paddy land.

Various authors have argued that paddy production in the Dry Zone based on village tanks *has* become problematic because of parcelisation. The case in this context would seem to rest on issues related to irrigation. The complexity of tenure in relation to the management of village irrigation becomes the crucial issue (**Economic Review,** February 1986:13). Without changing the pattern of holdings -- or so it is argued -- it is extremely difficult to protect peasant cultivators from the economic distress of repeated crop failure, and the extent of the problem is seen in some cases to have been quite disturbing. Leach, on the other hand, has argued that the problem is not that of parcelisation but unreliability in the supply of water. (Leach 1961). Parcelisation is simply a symptom of a broader problem, and a rational response to it.

To some extent the matter may be one of degree. For example, a case of advanced parcelisation has been recorded in Toruwe Tulane in the Anuradhapura District in the late 1960s, the extent of which can be judged from the information in Table 12.

Table 12: The Distribution of Parcels and of Paddy Owners in Toruwe Tulane, 1968

Number of owners	Number of parcels each
9	30-50
9	20-29
60	10-19
183	5-9
291	2-4
263	1
815	-

Source: Water Resources Board, "Report on Cultivation Habits and Practices in Toruwe Tulane, NCP", mimeo, 1968.

The data here is organised by ownership, and it does not necessarily follow that the land would be worked in fragmented parcels of such minute size. Yet at face value what the study reveals is in itself remarkable. One person in the village was found to own fifty separate parcels in seven different tracts. These parcels varied in size from two-fifteenths of an acre to four-fifths of an acre and, since not all plots could be worked, only those that were most readily accessible or which offered the greater potential return were being regularly cultivated (WRB 1968:22). More to the point, one-third of all owners had more than four parcels. How far this is a typical situation, even in Dry Zone *purana* areas, is very difficult to assess, but that parcelisation of this kind occurs has been documented. (cf. Karunanayake 1977; Kloos 1981).

A distinction has also been made in a study of Palannoruwa village in the Wet Zone, in the Kalutara District, between "ownership holdings" and "operational holdings" (Selvadurai 1977:174f) -- a point that was made earlier. In as far as owners gave out parcels to others to operate as separate holdings, which would appear to have been the case, this can also be taken as an indication of the extent to which parcelisation has been taking place. As can be seen from Table 13, the average size of operational holding that resulted was extremely small. Over 40% was of less than one-eighth of an acre, and over 57% was of less than half an acre.

It has often been noted that the average size of holdings (and presumably of parcels) does not in general vary much among different tenurial categories (Binns 1950:11; ARTI 1975c:13). However, this was a point that warranted attention in the case of Palannoruwa. Some 45% of land was held under the *tattumaru* system, and because it changed owners often and was not maintained, it also tended to be rented out under *ande* (a share-cropping arrangement). Half the land in the village was found to be cultivated under some form of share tenancy.

Table 13: The Distribution of Ownership and Operational Holdings by Size, Palannoruwa Village, Kalutara District (percentages)

Size class (acres)	Ownership holdings	Operational holdings
Below 0.125	0	41.9
0.126- 0.25	2.5	15.6
0.26- 0.5	3.0	14.0
0.6- 1.0	47.5	25.1
1.1- 2.0	7.5	3.4
Above 2.0	12.5	0

Source: Selvadurai 1977 : 174 - 175

Similarly, in the case of Beminiwatte in the Kegalle District, increasing fragmentation led to forms of joint ownership. (ARTI 1975). Some 38% of paddy cultivators were operating holdings of less than half an acre; 65% were working as joint operators, tenants and part-tenants, and 80% were subjected to one or other of these disabilities. Thus, while fragmentation may not as a rule be associated with specific forms of tenancy, conditions of ownership and of tenure can be important in fragmented areas. Paddy cultivators can be part of several *tattumaru* rotations within the same area, and the comment has been made that the inability of the courts to deal with the number of partition actions that are brought before them may be a factor contributing to joint-ownership arrangements. (cf.Robinson 1977:144). Unravelling rights to land can well be a nightmare when it comes to the implementation of a programme of consolidation.

5. THE EFFECTS OF FRAGMENTATION

Views as to how far fragmentation is perceived to be a hindrance by the cultivator vary quite markedly. This is partly because of differences in the nature of problems that occur in the contrasting agrarian settings of the Wet Zone and Dry Zone, and also because of a gap between perceptions of western trained policy- makers and of rural producers. National goals of increased production are sometimes simply assumed to correspond with perceived priorities of the peasant cultivator - in short that he (or she) is a profit maximizer.

The degree of divergence in these views on the effects of fragmentation can be illustrated by juxtaposing two clear positions. The first is that expressed by Farmer in his memorandum of dissent to the 1958 Land Commission :

> "It is often argued that the ownership of land in small parcels per owner leads to very low productivity per acre, the assumption being that efficiency is greater on large units than on small. But the assumption is ...completely invalid in the case of paddy. This is partly because, given present and foreseeable future techniques of paddy cultivation, the unit of cultivation is bound to be the *liyadda,* for reasons of water control. A man with three *liyaddas* does not produce more paddy per acre than a man with only one *liyadda*, for he has to treat each of his *liyaddas* as

separate units for most of the important operations in cultivation". (GOC 1958:175)".

A *liyadda* is a plot of land levelled and surrounded by bunds that retains the water during paddy cultivation. A parcel of paddy land is normally sub-divided into a number of *liyaddas*, which are in practice the basic unit of cultivation. Farmer maintained that intensive land cultivation on small *liyaddas* was more sensible than mechanisation, yields tending to be higher than on larger plots.

The alternative view (that is often much more concerned with growth than with production practices) is illustrated by the report of a Study Team on Land Consolidation that was examining areas to come under the Mahaweli programme -- and whose members collectively had a considerable amount of practical experience.They were to argue in 1971 that :

> "Further studies in the need for consolidation do not appear to be necessary, because there is a sufficient amount of published information which indicates in no uncertain terms the need for consolidation". (MDB 1971).

Clearly, working a large number of physically separated parcels can make the operation of a holding difficult. However, the nature of the problems that emerge needs examining closely. What, then, is the evidence on which these positions are based?

5.1 Problems of micro-units

A basic economic argument is the inefficiency of many small parcels for water management, in cultivation itself, and in the use of the cultivator's time. Many of the problems that are commonly associated with parcelisation are not specifically related to paddy production and, though derived primarily from European experience, the following summary is useful:

> "Time is wasted and extra expense involved in moving workers, animals, and implements to and from the farmstead and from one field to another, and in carrying seed and manure to the various fields, and crop from the field to the threshing floor...; supervision is rendered more difficult; depredations of animals and birds are harder to control; expense on fences, water supplies, buildings, threshing floors etc., is often much greater; comprehensive drainage or other schemes of improvement may be rendered impossible; access to various fields may be difficult, especially during the season when the crops are on the ground; more hands may be required, especially for watching cattle and crops". (Binns 1950:15).

These are general problems inherent in the parcelisation of agricultural land. However, there are also disadvantages that are more specifically related to paddy lands, and to paddy lands in Sri Lanka. These have been described in the following terms:

> "Fragmentation and parcelisation introduced obstacles to efficient organisation and management of paddy tracts. The presence of a large number of units within the paddy tracts makes synchronisation of operations difficult. It particularly handicaps irrigation as, within the numerous plots, irrigation needs to be coordinated for economic and efficient use of the water. The handicap applies to other agricultural operations as well, such as weeding and sowing and the use of insecticides, herbicides, fertilisers and some forms of agricultural machinery. Parcelization introduces several diseconomies to paddy cultivation. There is much waste of labour time due to the need to move from one unit to another. Techniques suited for smaller units rather than more productive techniques utilizable with consolidated holdings, tend to be practised. Extra expenditures may also be incurred due to the necessity for the duplication of structures such as bunds, fences and watchhuts as well as additional transport needs". (Sanderatne 1974:309-311).

There is also a loss of land in the bunds and paths that separate a multitude of minute parcels. There is little possibility of land improvement, and the situation as a whole lends itself to boundary disputes and to litigation. Essentially, however, the argument is simple. Parcelisation wastes land, labour-time and money that could be better spent. Consolidation avoids these pitfalls and creates the possibility of a higher productivity through more modernised farming.

5.2 Economic efficiency and size of plot

A conventional view on the economics of peasant farming is that productivity per acre is higher on smaller plots. More labour is put into the cultivation of small units, albeit cheap family labour that is "reimbursed" at a level below the wage rate prevailing in the labour market. As a result, while yields are higher, much of the production on small plots is unremunerative once these labour costs are taken into account. Efficiency can therefore be seen in two ways: (a) in the simple terms of yields per acre, and (b) as net revenue per acre using accounting procedures.

In the first definition of efficiency, that of yields per acre, there are findings that would seem to confirm the general hypothesis. This is suggested in the case of Ussapitiya village (Panditharatna and Gunasekera 1977:148). However, overall the picture is by no means clear. The ARTI survey that was undertaken in five selected districts in 1971-1972 found no clear and consistent relationship between the size of holding and yield per acre as such. In *maha* 1971-1972 the highest yields in Polonnaruwa, Kandy and Colombo Districts were in the 4-6 acre category, and in Hambantota they were in the 2-4 acre category. In *yala* 1972 there was an inverse relationship to be observed between farm size and yield, at least in the Wet Zone (ARTI 1975f:22-23).

Interpreting these findings is complicated by the fact that holdings of up to 2 acres were grouped together in the ARTI study. However, there are two interesting and potentially relevant points to be noted in it:

- first, there was a positive relationship between output per acre and the reliability of water - this being closely related to cropping intensity. There were major differences in yields between major settlement schemes, minor schemes and rainfed production (ARTI 1975f:24). This is confirmed by paddy statistics published each season by the Department of Census and Statistics; and

- secondly, there was a difference in the yields obtained on tenanted land and on owned land, the former generally being higher. This would seem to suggest that, given high (and rising) land rents and the generally limited size of operational holdings, tenants were driven to increase their productivity to maintain the quantum of paddy they needed for their own consumption.

Both of these points take us outside the question of the size of holding *per se* as a factor influencing the efficiency of peasant farms, but they do not strengthen the argument for consolidation. They raise the relevance of infrastructural supports (irrigation) and of tenurial arrangements.

Looking at the efficiency of production in a broader sense, the report of the 1958 Land Commission stated that:

> "Long years of experience make it quite clear to us that the reduction in the size of cultivation units below a certain extent adversely affects the efficiency of cultivation". (GOC 1958:163).

There must be a point, of course, where this is obviously true. There is evidence of minute plots of a mere faction of an acre left fallow because they are badly located and too costly to work. However, the odd corner of, say, a hundredth of an acre is not the norm. It is above that size that there is the area of uncertainty. There seems little doubt that many small farms try to run on a commercial basis, and that -- assessing them in cost accounting terms -- many appear to have been in difficulty in many years. That this may be true is one thing, determining a viability threshold below which they are unprofitable, is quite another.

Sarkar and Tambiah, in their study in Patha Dumbara (in Kandy District), were concerned with the most efficient size of operational holding in terms of net output per acre. (Sarkar and Tambiah 1957:45f). "Net output" was defined as gross output less the costs of non-labour inputs (i.e. fertiliser or manure, seeds, draught power, water rates, etc.). Their reason for not including labour costs was that much of the work in their area was carried out on a mutual exchange basis (*attam*) and would be eventually paid back. They found that holdings between 0.4 and 0.45 of an acre had the highest net output per acre -- one-third higher than holdings of more than an acre. (*ibidem*:46).

However, an analysis of this kind is not without difficulty. There is by definition no cost at all for family labour. If this was included the diseconomies of smaller holdings might be more apparent and the pattern somewhat different. But even then, problems would remain regarding the "price" at which family labour is in fact imputed. Sen has pointed out in an old debate that the obvious alternative, valuing family labour at the ruling wage rate (as in the Indian Farm

Management Studies of the mid-1950s), poses problems. It overlooks the dualism that is a significant feature of these labour markets, and it is not very meaningful, unless there is alternative employment to which this labour could turn. (Sen 1962:246).

Secondly, though perhaps truer today than at the time of the Kandy study, large farms in particular (but also a number of smaller ones) do employ wage labour. Wage labour is clearly an input cost, and to compare "commercial holdings" with labour costs with "family holdings" without labour costs introduces an element of bias that must influence results. The practicality of such measures must be open to a good deal of question.

Finally, and in many ways more important, not all producers -- and certainly not all of those with the smallest holdings of paddy -- operate on the commercial terms implicit in this mode of analysis. For many the marketable surplus from small parcels is miniscule; their primary motivation is producing for subsistence, and the varieties they choose to grow are not necessarily those with the highest yield. Often they grow what they know are reliable varieties, and some select varieties on the basis of taste. In many cases they put just enough labour into the production of paddy to get an adequate subsistence from what has, in effect, to be no more than a sideline or a subsidiary activity. A family cannot live on a quarter acre of paddy even if its productivity was amongst the highest, but that is not to say that the contribution of this quarter acre is not critical to them.

Thus, it is hard to argue on the data on purely economic terms that fragmented holdings have to be consolidated to provide an adequate income. It might also be argued that infrastructural investments, tenurial reform or additional off-farm employment could be equally effective. Nevertheless, there remains the point that these people must have some minimum household income, and that extremely small-scale holdings just cannot provide it.

5.3 Paddy production and household income

An underlying assumption of the argument that larger holdings are necessary to provide an adequate income, is that paddy production is the principal source of household revenue. The question then is whether the paddy produced on a certain acreage of land is sufficient to assure a minimum level of subsistence for a household of average size. As we have seen in a great many cases this seems to be highly questionable. On the other hand, if other sources of income are included, the situation changes.

The evidence that exists shows that while paddy is often the main source, it is rarely the only source of household income in any part of Sri Lanka (ARTI 1974b; Bogahawatte *et al.* 1984). It also suggests that there is quite considerable regional variation in the pattern to be observed. The ARTI survey of the mid-1970s (though it is now quite out-of-date) found that paddy income as a percentage of total income ranged from 85% in Hambantota to 75% in Polonnaruwa, 68% in Anuradhapura, 56% in Kandy, and a mere 27% in Colombo District (ARTI 1974f:30). The proportion of "part-time" paddy farmers was generally higher in the Wet Zone (reflecting not only the limited income that small holdings provided, but the relatively larger availability of alternative employment). It ranged from 96% in Colombo to 68% in Hambantota District. *(ibidem).* It is clear, therefore, that any evaluation of fragmented holdings

that equates paddy incomes with household incomes and then uses a cut-off level as a measure of efficiency, takes only a partial view.

Several points are pertinent here. First, there are other sources of income in agriculture. Preoccupation with paddy overlooks the fact that most cultivators own or operate highland - 54% of peasant lands in Kandy District in the early 1970s, 64% in Colombo, and elsewhere between 30-35% (ARTI 1974f:9). Even if the highland parcel was small, it could provide spices, jak, mango, drumsticks, coconuts, bananas, citrus, in some areas vegetables, or be used for livestock production. *Chena* production, a form of shifting cultivation based on drought-resistant crops for subsistence -- and also for the market -- is important as well (see Hettiarachchi 1984). This was the main occupation of many villagers in Dry Zone areas until the 1930s; there paddy has become a way of life relatively recently, and to talk of "paddy supplemented by *chena*" is to misview what has actually occurred. Indeed, the point in these areas may be that, largely because of this misconception, the destruction of jungle in the vicinity of villages has undermined *chena* and has made people more dependent on paddy than they had been in the past. In the Wet Zone there is also employment on tea and rubber estates, though this is not preferred employment for most Sinhalese villagers.

Secondly, there is alternative employment in construction, artisanal trades and in other activities that are taken on by family members as and when they arise. In short, a household is likely to consist of a number of persons with different sources of income, and their subsistence is in practice a result of their combined efforts. In this context a certain volume of paddy can provide an important contribution, but the fact that it is insufficient to meet all their needs is not in itself an argument for consolidating paddy plots.

Finally, there is also the point that if paddy lands are consolidated to form larger units, some people must lose land. What then will replace paddy in the total household income of those who lose? The availability of alternative employment at a greater level than at present will clearly be a necessity, even though the Wet Zone areas that have the most fragmentation are (almost by definition) also those with the highest levels of un-employment and underemployment.

5.4 Security and status

There are a number of other, non-economic considerations that impinge heavily on the political feasibility of consolidating land. First, in a situation of high unemployment, the fact that a household can produce at least some part of its staple food provides it an element of security, however small. If land has to be given up by some of these cultivators the loss surrounding even this level of basic subsistence will pose political problems, unless there are commensurate alternative sources of income.

Secondly, the ownership of paddy land has traditionally been important in determining a household's social standing in rural communities. In the past, there was an important social division between those who had land and those who did not, and those who had, commanded -- or claimed -- a certain respect and a certain deference within the village community. This situation is changing (Morrison *et al.* 1979; Perera 1985), but it seems reasonable to argue that as long as paddy land is the main economic resource, it will retain much of its importance as a source of social status at the village level. There is, in addition, an element of emotional attachment to "one's own land" or to land that has been inherited. And when it comes to

consolidation there is a "not unnatural professional doubt as to the wisdom of changing this well understood land for something less familiar". (Binns 1950:23).

Thus, even when the sums are done and the economists have their answers, there are likely to be a series of pragmatic social considerations that will have to be dealt with. They affect the willingness of the cultivators of small parcels of land to accept consolidation and to give them up.

6. THE LEGAL BASIS OF CONSOLIDATION

If, after careful study, the fragmentation of these paddy lands is believed to be a matter that is best redressed by a government consolidation programme, then the policies that are introduced will have not only to be technically and socially viable, but also legal.

A number of issues are of relevance here. The 1958 Land Commission felt that the endless division of holdings into infinitesimally small units meant that, on account of their small size, owners did not have "the necessary interest or incentive to adopt the latest methods of cultivation" (GOC 1958:163). It felt that legal constraints were necessary. It was firmly of the view that further reductions in size -

> "should be arrested by legal provisions which ensure that there would be no sub-division below what may be prescribed in each region as the economic unit for a particular type of crop". *(ibidem).*

This is clearly linked to the law of succession and inheritance. However, also at stake are the registration of ownership and, more broadly, the legal basis that exists for the voluntary or compulsory consolidation of agricultural land. These are issues that are particularly pertinent from the standpoint of policy.

This section will examine these issues: the law of succession, land registration, and laws in relation to the more general theme of consolidation.

6.1 The law of succession

Throughout Sri Lankan literature it is stressed that one main cause of fragmentation is sub-division of land amongst heirs upon the death of the owner. Patterns of inheritance have been seen as a crucial element, and understanding laws of succession -- and where possible tightening them up -- has been seen, not as a way to reduce fragmentation, but as a means of slowing down the rate at which it progresses. The introduction of primogeniture, or of succession by one person, has often been mooted in discussions as a possible alternative. In contrast, the 1958 Land Commission proposed to leave inheritance laws unchanged, but to introduce a restriction preventing co-owners partitioning an existing holding into holdings that were no longer considered to be an economic unit. (GOC 1958 164-5). Heirs would inherit undivided shares in an economic unit.

Since these legislation address what is perceived as the major cause of fragmentation, they are obviously pertinent. However, there are a number of difficulties that emerge with proposals of this kind.

The first, and most obvious, is the fact that they can in no way reverse the sub-division that has taken place. Where fragmentation is already acute, changing the rules of inheritance or restricting partition can do no more than slow the process.

Secondly, several different laws affect the rules of inheritance in different parts of Sri Lanka. The first interim report of the 1985 Land Commission identifies not only Kandyan law, but the Tamil Thesawalami, Muslim law, unitary inheritance under the Land Development Ordinance and Roman Dutch law as all applying. (GOSL 1986:38). This complicates considerably the possibility of intervention by law.

Thirdly, and in many ways more important, is the fact that it is not really practicable. West has argued that, even where laws do exist, the ability of the Courts to resolve matters relating to the division of property is effectively limited. He has pointed out that:

> "in the unusual case of testamentary disposition, the heirs must apply to the Court for a partition decree by way of probate, currently under the Partition Law 1977. In the case of intestacy the Court may decide on partition, or sale, or some combination of the two. In either event the partition procedure can become prolonged, tedious and expensive; especially where succession is disputed and judgement has to be repeatedly postponed. The result has been that partition actions have accumulated before the Courts; the general public have tended to lose confidence in the judicial process through frustration; and the co-ownership of undivided shares has proliferated extensively throughout the Wet Zone. The average time for the partition process to reach finality has now reached 15 years". (West 1986:10-11).

That disillusionment leads peasant cultivators to avoid the Courts is confirmed by Robinson who observed a shift away from them in settling disputes of land. Litigation, she confirmed, was extremely expensive, and it was only worthwhile if a large holding was at stake. (Robinson 1975:144). In the case of small paddy holdings, where the principal problem lies, it is very unlikely that the Courts can be a means of control.

There are very real limits to the ability of the Courts to enforce a law restricting succession or the partition of land in the countryside. If a claimant comes to Court on a question of land sub-division and meets these delays, then monitoring what actually happens in the village and constraining it by law are more complex still. Peasant cultivators do not take kindly to the State telling them how they can or how they cannot dispose of any small piece of land. The scope for concealment and evasion is clearly enormous.

Regulations have been introduced to limit inheritance to one member of the family in (i) the transfer of land operated by a tenant cultivator, and (ii) the alienation of lands of state settlement schemes. The latter case can be taken as an example of some of the difficulties.

Formal restrictions on sub-division through inheritance (and in other situations) have been said to be a valuable control against fragmentation on the government's colonisation schemes in the Dry Zone of the country. Under the 1935 Land Development Ordinance, an allotment could only pass to a single successor chosen either by the original allottee or according to a schedule of relatives. However, a more general view is that these regulations are ill-conceived and that they are difficult to implement (see GOC 1958:179). Farmer has argued forcibly this case in the following terms:

> ".. my own experience in colonisation schemes leads me to the clear conclusion that many allotments have already been illegally partitioned, either between the original allottee and other parties, or between his successor and other parties. It is impossible to stop this unofficial fragmentation, for persons working on what is legally the land of one allottee can be passed off as labourers, helpful relatives and so on". (GOC 1958:176).

He emphasised the real possibilities of evasion that existed in practice, a point taken up by Gold who elaborated it further. As he saw it -

> "either the colonist arranges the circumvention before his death by having his children each obtain a plot... or his family arranges a system after the colonist's death in which several members share the land. Often the arrangement is technically legal in that one person is listed as the owner but its actual operation ignores, or nearly ignores, both the letter and the spirit of the Land Development Ordinance". (Gold 1977:132).

The evidence suggests that even on these schemes, where there is considerable involvement of Project Officials, the situation is not really controllable. And the point here is captured by Farmer when he argues that:

> "if the condition that there shall be unitary succession is evaded in carefully supervised L.D.O. allotments, how much more will it be evaded in the villages? And if there are feuds already over succession to L.D.O. allotments, how much more will there be feuds in the villages, where land is so firmly entangled in the mesh of kinship?". (GOC 1958:178).

He failed to see how, in the words of the Commission, legislation could be drawn up "with due regard to the traditional land holding practices and inheritance laws of the country". For him the problem lay precisely in the fact that they conflicted so markedly. Sarkar and Tambiah also concluded that in general "it is dangerous and difficult to tamper with and change inheritance laws" with regard to settled peasant land. (UC 1957:80).

But if the law cannot intercede, the question that remains is how traditional rules of succession are applied when an owner (or a tenant) dies intestate. Accounts of paddy land inheritance in different parts of the country are given by Sarkar and Tambiah (1957:50f), Leach (1961:137f), Obeysekere (1967:37F), and by West (1986:10). In the majority of cases the normal practice is for peasant cultivators not to leave a will, and a fundamental feature of

intestate inheritance amongst the Sinhalese would appear to be equality of division between all (male) children. The general pattern observed by Sarkar and Tambiah in the Kandy area was for land to be divided equally between sons, with less plots for daughters (if they get anything at all). The picture drawn by Leach and Obeysekere is far more complex than this; heirs who move away from the area do not always press claims, but the tendency to sub-division would seem well established. Villagers cling on to sub-division as a matter of tradition, and also because if one son inherited everything there would be no living for the others. There is little information available on Tamil and Muslim areas.

Underlying critiques of this procedure there is somehow the view that the peasant is irrational -- that by blindly subdividing his land he simply slides into poverty. However, Leach maintained that preoccupation with the notion that inheritance leads to fragmentation in geometric progression underestimates the mentality of the average village producer. He argued (again with regard to tank-fed cultivation in the case of Pul Eliya) that :

> "it is perfectly true that in the North Central Province the average size of holdings has tended to decrease over the last fifty years, but this is due to the increase in population and not to the operations of the bilateral rule of inheritance. There is no evidence at all that the inheritance system as such tends to excessive fragmentation. North Central Province villagers are sensible practical farmers; they are perfectly well aware as to what is the minimum size of plot which, given present cultivation techniques, it is practical to farm. They do not operate their inheritance rules in such a way as to make the whole system uneconomic. In the ordinary way bilateral inheritance serves as an effective mechanism for breaking up large estates, but it is not used in a legalistic way. If a legalistic claim leads to ridiculous conclusions the claim is abandoned". (Leach 1961:143).

Technology may redefine the perceived viability of many plots, but the underlying point, that it is not so much the rule, as the way it is applied, is one that is very well taken.

The fact that legislation would be difficult to enforce may not in itself be a valid argument to dismiss out of hand the possibility of exploring some form of regulation by law. But again the point has to be made that this is a matter of priorities. The absence of alternative employment opportunities magnifies the importance of possessing land; it intensifies people's insistence on their right to a piece of whatever land there is to be inherited, and on a physical sub-division of parcels so that shares are fair and correct. Sub-division through inheritance is a reflection of a certain level of development, and more specifically of the lack of diversification into other activities.

6.2 Land registration

A second legal feature that affects the question of consolidation is the adequacy of the present system of land registration. Before land can be consolidated (and even before the land market can become really effective) it is necessary to know who owns which land and who has the rights to its cultivation. There are difficulties facing any legislation working to create "more

economic holdings" in the absence of a cadastral survey and a system of title registration. Where this is not available, rights will have to be established.

The costs of cadastral survey and the prevalence of inadequate or spurious claims are therefore frequently voiced as a potential technical bottleneck in schemes for the consolidation of peasant land. Land registration in Sri Lanka is based on the 1927 Registration of Documents Ordinance which established a series of Land Registries throughout the island. However, the principal aim for which it was established was that of deeds registration (recording land transactions). This affords some protection, but it is neither compulsory nor indeed necessary from the point of view of the legality of transferring property. Not all property is included and it is unlikely to be adequate.

Both a Paddy Land and a Highland Register are maintained by the Agrarian Services Department under the 1979 Agrarian Services Act. These record operational rights to land as laid out by the Act. Claims are inspected and areas estimated by Cultivation Officers. However, responsibility for up-dated registration lies with the owners and with those operating the land, and for a variety of reasons they are often reluctant to have rights placed on record. It is also maintained that there is frequently a difference between records in the Paddy Lands Register and those on the P1 form for village paddy statistics.

The question of an improved registration system to facilitate the process of consolidation was taken up by the 1985 Land Commission (GOSL 1986:23f), which devoted the second part of its first interim report to it, and also by West (1986:17f), but its absence is a weighty argument against the emergence of an active land market and against any government attempts at consolidation.

6.3 The legal basis for land consolidation

The first proposals to counter the sub-division of paddy holdings other than on settlement schemes came in the recommendations of the 1958 Land Commission. It argued:

> "that the District Agricultural Committee of each District be vested with the authority of prescribing for each class of land in each region in the district an economic minimum unit below which no sub-division should take place. If there are any fragments or any holdings below these limits in any of these regions such units can be transferred only if the transfer provides for their being combined with other units to result in a holding larger than the prescribed economic minimum". (GOC 1958:164).

The proposals of the Commission were clearly unworkable and they were not taken up in the legislation that followed. On the other hand, the Commission was *not* in favour of the consolidation of paddy holdings (1958:170), though this was in fact the point that was to reappear.

The Paddy Lands Act of 1958 was much wider in scope, aiming more generally to promote peasant production and to increase production of rice. As a part of this it provided a legal basis for the consolidation of paddy holdings. Consolidation and the establishment of

collective farms were seen together as being part of the task of overcoming the smallness of scale inherent in the country's paddy production (Moore 1985:58). Section 36(g) stated that Cultivation Committees should be set up, under the Act, with powers -

> "to prepare and submit to the Minster for implementation by regulations approved by the Government and made under this Act, schemes for the consolidation of holdings of paddy land and schemes for the establishment of collective farms for paddy cultivation". (GOC 1958).

No regulations for their implementation were, in fact, approved.

The Act also provided that tenant-cultivators should select only one successor. However, the nomination provisions it contained were highly formalistic, and this has been seen as a reason for its subsequent failure. (Gold 1977:132f). It was argued (probably correctly) that inheritance procedures were too deeply engrained to be overcome by the mere passing of law.

In the early 1970s a Study Team on Land Consolidation was formed, consisting of senior government officials, to review the issue. Though their focus was on the lands that were to be incorporated under Stage 1 of the Mahaweli Development Programme, some of their findings are particularly pertinent to the present discussion. (MDB 1970-71):

- First, they found that there was no specific legal basis for consolidation -- it was only an incidental objective of the Paddy Lands Act of 1958;

- secondly, they found that the provisions of the Paddy Lands Act did not cover highland, though paddy and highland were commonly combined within a single holding;

- thirdly, the Act was not concerned with the owners of land so much as those who operated it. The experience of the Department of Agrarian Services in trying to introduce consolidation on an informal basis, highlighted the need for a fundamental change in orientation . The problems it had faced argued eloquently for a switch from the consolidation of operational units to consolidation of ownership;

- fourthly, they felt it necessary to have more comprehensive and more specific legislation. *Ad hoc* measures under the aegis of the Paddy Lands Act would not in their view work, if only because the Act itself was not comprehensive enough;

- the consolidation process had, ultimately, in their view to receive legal sanction, resulting in the amalgamation of uneconomic holdings into larger, economically viable units;

- and finally, they argued that consolidation would have no meaning if it was not tied up to the registration of titles.

Clearly, therefore, there was more at stake than was envisaged by the 1958 Act.

Elements of this were rectified some four years later, when the Agricultural Productivity Law (APL) No. 2 of 1972 was enacted, *inter alia* -

> "to provide for maximum productivity through the proper use and management of agricultural land and efficient management of agricultural crops and livestock". (GOC 1972).

Similarly, under Section 24(2), it empowered the newly created Agricultural Committees (established under the same Act) -

> "to prepare and submit to the Minister for implementation by regulations, schemes for the consolidation of agricultural lands". (GOC 1972:11).

It was clear that "economic efficiency" was the main criterion on which fragmentation and the subsequent need for consolidation had been assessed. However, while the Paddy Lands Act of 1958 made reference only to the consolidation of paddy holdings, its successor was not confined to the problems of paddy production to the same extent. It was far broader in scope, referring to "the consolidation of agricultural lands". The latter were defined in the 1972 Act as -

> "private lands, lands alienated under the Land Development Ordinance or the Crown Lands Ordinance or any other enactment but shall exclude home gardens". (GOC 1972:22).

In this the Agricultural Productivity Law of 1972 removed a legal barrier to the consolidation of highland holdings, which were an important part of the subsistence base of Sri Lankan village producers. The Paddy Lands Act was repealed by the Agricultural Lands Law No. 42 of 1973, but the APL remained in force until the Agrarian Services Act No. 58 of 1979. was enacted. The latter eventually repealed it, and with it the legal basis for the consolidation of land was no longer explicit.

A main objective of the Agrarian Services Act was to provide security for tenant-cultivators and to maximise the productivity of paddy and other agricultural lands through their fuller use and better management methods. It limited rights of transfer and inheritance to one member of the tenant's family (Sections 7 and 11b), but it did not contain provisions for consolidation.

Legal recognition of the possible need for consolidation was not taken further, and Sri Lanka would appear to have no experience with the legal problems of compulsory consolidation. Despite provisions contained in the Paddy Lands Act and the Agricultural Productivity Law, there seems to have been no attempt to consolidate lands based on specifications that were legally defined. The attempts that have been made have been of a very small scale and have been voluntary.

It seems true that, throughout the world, legislation of this kind has stressed the need for active participation of the interested parties, and for initiatives to be taken by the cultivators themselves. Hence Binns's view that "regulation cannot move much in advance of public opinion".(Binns 1950:18). Education and public discussion are plainly an important part of the problem. On the other side, bureaucratic requirements can be a hinderance. Policies and rules that are imposed from above and for which the community is mentally (or economically) unprepared would seem to be begging for wholesale evasion and many forms of resistance.

However, for compulsory consolidation, and even for voluntary consolidation beyond a minimum scale, some ground rules are needed with regard to the valuation of plots, hearings and arbitration, and -- if the average size of holdings is to increase -- for compensation and finance. (Moral-Lopez:1962). There is also a need to define the boundaries of consolidation areas to facilitate the planned improvement of infrastructure and service facilities within it. The lack of this experience in legal drafting would seem in itself to be grounds for considerable caution in considering options that rest finally upon state intervention and upon legal compulsion.

The dangers in guiding and pushing consolidation are underlined by the force of Farmer's argument that fragmentation -- even if it was found to be highly undesirable and to have strong adverse effects on productivity -- may well be a phenomenon that cannot be effectively prevented or corrected by legal measures. His view, that the latter are ineffective because they fail to address the crux of the problem, would seem pertinent today. Fragmentation was for Farmer a symptom, it was not the disease. The disease was the growing pressure of population on available land and the inability of government to generate sufficient alternative employment in other sectors of the economy. Hence people cling onto shares in tiny parcels of land through insecurity. "It is useless", he was to argue, "to try to control fragmentation unless economic development is adequate to draw the surplus population from the land already developed". (GOC 1957:39). This has equal validity for consolidation in the contemporary setting.

6.4 Some concluding remarks

Three other remarks would seem warranted under this heading. The first concerns the important distinction between ownership and the use of land. Questions arise as to how legal

provisions designed to bring about the consolidation of ownership will influence the position of tenants. To what extent would legislation to protect the position and rights of tenants -- which itself is important -- run counter to the priorities of consolidation? What provisions would be required to relate the two?

Secondly, there is the island's diversity. Adjusting agrarian structures so that they are more suited to the application of modern production techniques and preserving a degree of equity in land ownership, where that is possible, may be considered a broad objective of land consolidation. Legislative measures to deal with it have therefore to be comprehensive, and at the same time flexible enough to serve its objectives. Though Sri Lanka is a small country, its agrarian structure is highly diverse, and this in itself poses problems for legislation. How can these diverse conditions be accommodated in such a way that both efficiency and equity are present, and so that the legislation remains specific enough to be pertinent? This would seem a fundamental problem that would have to be faced in considering any legal provisions for consolidation -- and one which, in itself, could well cast doubts on the feasibility of such a programme.

Thirdly, there is also the question of how to prevent the refragmentation of consolidated holdings. It has been noted that interfering with inheritance laws is an extremely prickly and extremely questionable alternative. Are there others? And how far do they lie in the legislative field?

7. PAST POLICY MEASURES AND CONSOLIDATION ATTEMPTS

There have been few attempts in Sri Lanka to address the problems of fragmentation and of micro-holdings through government-sponsored programmes of consolidation. Those that occurred took place in the decade from the mid-1960s to the mid-1970s which was one of considerable change and politicisation of rural institutions. Since that time the idea of consolidation has been laid in abeyance. Attention has more generally turned to large-scale colonization in the context of the Mahaweli Ganga development programme, and it has done so to a great extent at the expense of problems prevailing on existing lands. The efforts that have been made at consolidation have therefore to be seen in the context of their period.

A second characteristic of the early efforts was the fact that they relied on voluntary participation of the cultivators involved. They evolved through a careful process of discussion at village level; they were "top-down" initiatives, though in organising the schemes and in their implementation heavy emphasis was generally placed on "getting people involved". It is not clear from the material how far there was a felt need and a latent demand for consolidation amongst the village population, but it does not seem an issue that was explicitly assessed before approaches began. The impression that is gained from reports that exist on the various experiments (and the evidence is scant), suggests more that cultivators were persuaded of the advantages of consolidated units by the field officers involved. However, it is evident they were persuaded to the extent that they were willing to cooperate in implementing it.

This section sets out to provide a commentary on the materials that are available on these experiments in Sri Lanka. It comprises a number of headings, looking in turn at (1)

experimental consolidation schemes, (2) group production, and (3) a range of general problems observed in the literature. A final section ventures some concluding remarks.

7.1 Consolidation experiments

For all its shortcomings, the 1958 Paddy Lands Act set the stage for several experiments in the consolidation of paddy land on a voluntary basis. Officials hoped that Cultivation Committees formed under the Act would piece together the detailed information that was needed on tenurage and the size of holdings in a village Paddy Lands Register, and that -- on the basis of this -- they would encourage cultivators of fragmented holdings to consolidate their land and, where possible, to embark upon cooperative farming (Gold 1977:137).

Activities of the Committees were to be financed by a fixed acreage levy, paid in cash by all cultivators. (These replaced variable dues -- 1/64 of the crop -- that owners had earlier paid to the *Vel Vidane* under the Irrigation Ordinances).

The fact that consolidation was to work through these Committees generated a number of difficulties that have to be taken into account in assessing experiences. An important factor in this was that they were highly politicised. The Paddy Lands Bill was envisaged at the outset by its initiator, Philip Gunawardena, as a modernising measure that was "to take the class struggle to the villages" and "to root out remnants of feudalism". It was passed with much opposition, and only after several revisions and considerable compromise. The Committee membership of twelve was in the end to comprise one-fourth non-cultivating landlords and the remainder, tenant-cultivators and agricultural workers. Elections entailed difficulty; they were for a term of one year, and some of them were boycotted or deliberately sabotaged. (Gold 1977:99f).

The result was almost inevitably very limited success. Cultivation Committees were in general unable to fulfil the task that was expected of them, and only very few were to make any attempt at the consolidation of land. From 1965, the Department of Agrarian Services embarked on the consolidation of fragmented holdings in a number of villages in Anuradhapura District (in the Dry Zone of the country) where over 2,200 acres were said to be fallow because of fragmentation. (ARCAS 1966-67: KK57).

On the whole, Committees were more successful in the Dry Zone because the exigencies of climate meant that cooperation to keep the irrigation and water supply system working was that much more pressing. The 1964-65 and 1965-66 seasons were also marked by an improvement in the financial position of the Committees themselves. Under the 1964 Amendment to the Paddy Lands Act, the acreage levy was to be deducted from payments made to producers for sales of rice to the government under the Guaranteed Price Scheme (GPS). This saw an increase in the proportion of the levy that was actually collected -- from less than 20% to 32% for 1964-65 and then 47% for 1965-66. (Gold 1977:103). Thereafter the figure declined to the 24-27% range because the market price exceeded the GPS price, and cultivators preferred to sell rice on the open market. In some respects, therefore, the mid-1960s was a fairly propitious period in which to start in those areas where Committees were working well.

The Department of Agrarian Services focused its efforts on 13 Cultivation Committees. in the Anuradhapura district. There is some ambiguity surrounding the actual area involved. In one version they encompassed a little over 750 acres of paddy land (MDB n.d.:1), while in another it is said that schemes in the mid-1960s (which constituted the majority) covered 492 acres -- reducing 858 holdings to 509 (DAS 1966:5). Presumably the latter were simply part of a larger area that was eventually treated.

Schemes were undertaken with the active cooperation of farmers and of the Government Agent; they were experimental in nature, and they were carried out by a special unit that had been formed in Colombo. Intensive work was undertaken between 1966 and 1968. At that point interest fell away for a number of reasons -- amongst which was transfer of the officers in charge to other activities (Siriwardana 1970). Two examples can be given of these experiments, that of Mahakumbukwewa and that of Kadurugaskada, though in all cases the information available is extremely limited.

In the case of *Mahakumbukwewa* the experiment extended over a period of six seasons beginning in 1966, and it was comparatively successful. This was partly because the president of the Cultivation Committee was especially dynamic. The committee had collected the information that was asked of it, and this apparently revealed that fragmentation had reached extreme proportions. Villagers owned as many as sixteen separate parcels of paddy land, and 38% of the uncultivated land was said to have been left unused because of the extent to which it was divided.

The work that was undertaken was basically the following:

> "In early 1966, discussions were started with the farmers about pros and cons of consolidation. They were asked to try out a programme of consolidation for *just one season*. The following disadvantages of parcelisation were discussed. The multiplicity of operational units (meaning a) need for fencing in several places, wastage of time and labour, high costs, difficulties in water management and the wastage of tank water. There was practically unanimous acceptance of the need for consolidation. Then each farmer gave in writing the names of the paddy fields he owned, their extents, and his desire to participate in the programme. Those who had one or a few parcels were reluctant at first. Ultimately, all except one farmer proved to be willing. The lone objector participated from the next season. Next, each field was surveyed and maps drawn showing the condition prior to consolidation. Then the 72 owners were grouped into 13 bodies based on kinship and friendship. Each of the 13 groups had an elder. The members of the C.C. (who happened to own some of the largest gross extents of paddy land) agreed to take their shares from anywhere in the *mahawela*. Consolidation began with the reluctant owners of one or two lots from the *ihalawela* end. The re-division was done meticulously. Not a single *niyara* was changed in the process of consolidation. In this way the consolidation was completed to commence cultivation for the '66/'67 Maha" (Siriwardana 1970:2).

The *mahawela* and *ihalawela* are upper and middle tracts of the land irrigated by tanks. The average yield of previously uncultivated land rose after consolidation from 30 to 40 bushels per acre, the latter roughly the national average in 1966/67. The average national yield was also rising sharply at this time, however, and it is not at all clear how far these gains could have been due to other factors. It was also reported that when water in the tank was inadequate there was a tendency to revert to the earlier system to deal with this and that jealousy and enmity led to unilateral abandonment on the part of some individuals (Gold 1977:137). After some years the committee members lost interest and the scheme petered out.

In the area of the *Kadurugaskada* Cultivation Committee, the experiment in consolidation was even less successful, lasting very few seasons. Again, it was found that the real test of the experiment was not so much in its normal operation as in times of difficulty. When the tank had insufficient water, farmers reverted to the *bethma* system and to the situation prior to the consolidation attempt. The scheme was unable to deal with a situation of crisis, and the cultivators turned to the only way that they knew of to resolve problems associated with drought.

In contrast, a rather different attempt at consolidation was undertaken in part of *the Dewahuwa project* area in Matale District (an intermediate zone). This was undertaken with assistance from the Japanese Government, and its objective was to increase the productivity of land and labour. In as far as it is possible to discern, farmers' perceptions of problems do not seem to have been adequately considered in the design of the project. The consolidation programme began in the 1971 *yala* season and was to cover 771 acres comprising 14,000 *liyaddas.* This in itself was an indication of the extremely small size of the basic units that paddy cultivation entailed. The expected results of these efforts were the following: (LCD/JICA 1977:118)

- Improvements in the productivity of the land. Consolidation was seen as a way of increasing the efficiency of water use through better land arrangement and the unification of *liyadda* inlets, soil dressing, underground draining and sub-soil compacting, etc.;

- improving labour productivity. It was seen as a way of facilitating the use of mechanical energy, by extending the size of *liyaddas* and the improving of road conditions;

- conserving agricultural land. It was seen as a way of stabilising land permanently, modifying the gradient, and strengthening the borders and inlets of individual *liyaddas.*

The report emphasised that, though land consolidation schemes envisaged long-term benefits, they had to provide short-term gains if they were to be accepted socially. This is clearly true, and the earlier evidence that was examined reaffirms this point.

There is no available information on the extent to which the Dewahuwa programme was successful, or in any detail how it was carried out. In this respect the record is unsatisfactory. In other schemes it was found that, after some years, farmers reverted to the pre-consolidation pattern, and it would be useful to know if the Japanese experience that had gone into this programme yielded different results.

Overall, the evidence would seem to suggest that the relative success of these voluntary schemes depended very much on the consistency of the support that they received from the authorities, on the quality of local leadership, and on the extent to which they were assured of reliable water supplies. Where the latter were not assured, the schemes had no remedy. Secondly, while fragmented parcels were combined to form more contiguous holdings, the average size of holding remained unchanged.

Here, again, the degree of dependence on paddy and the availability of other sources of income would be important for an adequate assessment of what these experiments achieved for the peasant families involved. The data for such an assessment, however, do not exist.

There is also evidence of considerable strains in the implementation of such schemes (over and above those that were associated with the Cultivation Committees):

> "Some cultivators did not like their new land, perhaps fearing its drainage or its exposure to the sun or its soil would not be as good; some felt that others had benefitted more than they, an indication of the jealousy and suspicion that exist in the villages. If there was a quarrel a cultivator might satisfy his anger by forcing a reversion to the pre-consolidation pattern, even if he was hurting himself in the process. The voluntary consolidations were so tenuous that if just one man, or a few, no longer supported the plan everyone was forced to drop it. Some big owners disliked consolidation plans because they made it more difficult for these owners to buy land from owners of small or fragmented holdings. Any strain on the system, such as lack of water, or a loss of support among village leaders, could lead to a plan's collapse". (Gold 1977:138).

Many of these problems are inherent in the idea of a voluntary consolidation of paddy land, touching as it does on a central determinant of income and status at village level. Consolidation is by definition a human process, and the foibles and fears of the people involved are inevitably part of it. However, it is also very important to note just how fragile and complex a process consolidation can be.

7.2 Group production

Though not strictly a consolidation programme, an important experiment was undertaken by the Agrarian Research and Training Institute (ARTI) in the 1970s. This was the

experiment in group production in its field laboratory at Beminiwatte in Kegalle District, one with an extremely small average size of paddy holding (see Section 4.2). It has to be seen in the context of the redistribution of land in the wake of the 1972 land reform, and its relevance lies not only in the notions that underpin it, but in the fact that it was the first project of its kind to be attempted in the Wet Zone. The experiment was an attempt to evolve new forms of farmers' organisations in which they were working in groups .(Gooneratne *et al.* 1977).

These did not entail collective ownership of land. The system was to differ from cooperative farming in that the participants retained their individual resources while undertaking production activities on the basis of a common formula. It was essentially -

> "an arrangement whereby the ownership of land remains with the farmer while the production of a crop or rearing of animals is done by farmers as a group according to an agreed calendar of operations". (Gooneratne *et al.* 1977:10).

That the social background of the farmers, their relative levels of experience, capital and other assets are of crucial importance in schemes of this kind is self-evident. However, in the case of this scheme, farmers had earlier become tenants of the Beminiwatte Agricultural Productivity Committee (APC) which managed land on behalf of the Land Reform Commission. The APCs were formed under the 1972 Agricultural Productivity Law, each with ten to twenty cultivation committees within their jurisdiction.

The relative homogeneity of the farming population at the outset of the scheme (in terms not only of their socio-economic background but also of the tenure of land) was clearly an important factor. How far differentiation over time might have undermined the process remains uncertain.

The experiment itself was organised in two stages. In the first stage a tract of just over 16 acres was selected and operated by 18 farmers whose individual holdings ranged from 0.5 of an acre to 1.25 acres. They had previously operated this land on an individual basis with very little cooperation in their farming activities. Some had adopted "better" cultural practices, but not systematically. Sowing and transplanting were done at different times; different varieties required different periods to mature, had different degrees of resistance to disease and different pests. (Gooneratne *et al.* 1977:17).

With the onset of the scheme, the ARTI provided training, advisory and supervisory support, but it was the Beminiwatte Agricultural Productivity Committee that was made responsible for its implementation:

> "While being responsible for the provision of credit and other inputs to farmers it was expected to coordinate the activities of institutions and the farmer group. The Cultivation Committee was to be in charge of the distribution of inputs, recovery of credit from the farmers and supervising the activities of the group at field level. The Extension Officer of the Department of Agriculture was to provide technical advice and assist the Agricultural Productivity Committee and the Cultivation Committee in the implementation of the project". (*ibidem*).

As a result of this experiment the average yield increased from a previous level of 32 to 65 bushels an acre, with the variation amongst members ranging from 59-72. Requests from other cultivators to join the scheme would seem to have been evidence enough of its perceived success. However, it was noteworthy that what impressed farmers most was not the advantages of consolidated farming and the uniformly higher yields so much as "the ability to get their farm requirements more easily".

In the second stage an attempt was made to extend the scheme to some 300 acres and 300 farmers in areas of (a) assured water and good management, and of (b) much less reliable production and production conditions. The aim was to replicate the scheme under normal village conditions. This experiment suffered from the fact that *yala* 1976 was a bad season throughout Kegalle District. The failure of the South-West monsoon left large extents uncultivated. However, the performance of groups was systematically better than that of neighbouring tracts that were individually operated. Variations in yields amongst the farmers were also small. (*ibid*:22-23). Unfortunately, the eventual outcome of the scheme is again not clear.

Nevertheless, two comments seem warranted. First, it is notable that the group had highly similar backgrounds. And second, the perceived success of the scheme would seem to have revolved around the timely provision of inputs to those who participated, efficient credit procedures, the commitment of extension workers, and the expenditure of a considerable amount of time in developing the common production programme by which they worked. All of this involved much more than cultivators working together as a group. The importance of viewing their problems in a broader context was underlined by the experiment.

7.3 Problems in land consolidation

In this section, a number of general problems that have been identified in the literature on land consolidation and which seem pertinent to Sri Lanka, will briefly be summarised. These include delimitation of the project area, farmer resistance, problems of leadership, the situation of non-beneficiaries, and project costs. The aim here is not to elicit answers but to identify certain issues.

7.3.1 Delimitation

Discussions of the need to consolidate paddy land focus on problems of holdings that are very small and are highly fragmented. Attention is geared to holdings that in one sense or another are uneconomic to operate. In practice, however, there are often likely to be difficulties in confining a programme of action to these categories of land.

While there may be localised concentrations where problem-holdings predominate and are readily identified, it is not always the case that they are separated from others. They are more likely to be interspersed, or to be concentrated in certain parts of a village, or in certain villages. The larger the geographical area to be encompassed in a programme, the greater the degree of variation that is likely to exist.

To deal only with problem-holdings may not therefore be practical. Reallocation raises questions of a technical nature. It is often necessary for the efficient and systematic consolidation of holdings in a given area, to include certain key holdings or parcels within the programme. If the owners of these lands are excluded, the effectiveness of the project as a whole can be reduced to a disproportionate extent. In the Dewahuwa project, for example, the following was noticed:

> "Since application from farmers was (required) at the commencement of the work, the project could not perform the necessary work against the unapplied allotments... but those allotments will still remain in poor field condition and it will disturb the systematic functioning of irrigation facilities, agro machinery, labour input and so on". (LCD/JICA 1977:129).

Problems of access and cost make working with certain categories of holdings uneconomic. Finally, a viable programme of consolidation will often include not only reallocation but also land improvement, and the provision of infrastructure and supporting services that can only be effectively planned and implemented for a wider geographic area.

The nature of a land consolidation programme is therefore likely to be such that it will delineate an area within which there are different categories of owners, operators and rural workers. The programme will relate to a specific agrarian context where the interests of owner-operators may well differ from those of part-time farmers, landlords from tenants, rich from poor, and where differences in caste and social origin are important separating factors. In areas of serious fragmentation the relative numbers in respect of different categories may make negotiations easier, but in this setting the complexity of "voluntary" consolidation and the need for strong support from the authorities become more apparent.

7.3.2 Farmer resistance

There is evidence of considerable resistance on the part of paddy cultivators in Sri Lanka to participate in consolidation schemes. This, in the view of some observers, has been the principal bottleneck. Karunanayake concluded that such schemes have met with failure "owing largely to peasant resistance". (Karunanayake 1978:27).

It seems doubtful, however, that this is entirely the whole story. No doubt some (and sometimes many) people stubbornly refuse to accept the idea of changing land. The position cultivators adopt will not always be reasonable, and if a few will not cooperate this can be enough to disturb the functioning and logic of a programme as a whole. But there can also be another side that affects the scale of these problems. The way a project originates, its technical design, and the extent to which it is understood and acceptable to the local community will in turn affect attitudes. There is an intrest on the part of officials to push everyone to participate, and there is a tendency to blame project failures on resistance to change. Reactions have, however to be seen in their social setting as well as on the level of individual psychology.

The reasons for resistance, therefore, need examining carefully. In the Dewahuwa project non-participation was explained in terms of the following factors:

(a) a lack of confidence in the benefits;

(b) a temporary potential increase in investment (or costs) of paddy cultivation just after consolidation, e.g. an increase in labour costs, in fertiliser use to supplement lost fertility in the top soil, etc.;

(c) difficulty in reallocating one allotment to several cultivators after the introduction of new irrigation infrastructure (where new and larger liyaddas have been created with a lower number of inlets).

A mixture of technical, economic and psychological factors would all seem to have been involved. Participants had to feel confident about the project -- that it would meet their needs. Increasing costs pointed to the importance of improving access to credit and to other facilities, and of viewing land consolidation and land improvement in the context of a broader programme of rural development if it was to be readily accepted. Elsewhere there have been reasons of a political or a socio-economic nature that have generated resistance - party conflicts, pressures from landlords, fears that control over tenants would weaken, or on the part of tenants, that their rights to land would come under threat, fears that additional incomes from agricultural labour could somehow diminish.

It can also be argued on a much broader front that the precariousness of the ecological situation (especially in Dry Zone areas), the turbulent nature of Cultivation Committees, the fact that schemes originated from above and not from felt and articulated needs in the local community, have all played a role in magnifying in the minds of peasants a whole range of uncertainties. Nor indeed did everyone stand to gain. People with larger holdings and a few parcels of land have been unwilling to join because consolidation meant bother and parcelisation was not a real problem for them. They could see that they would never emerge as the real beneficiaries and broader social objectives were unconvincing.

But when all is said and done, programmes of consolidation have often been met with a impassioned reluctance. On a psychological level, a recurrent phenomenon has been the hesitant, often emotional, response of the peasant cultivator to the idea of exchanging land - of parting with a parcel which he (or she) knows and which may have been in his (or her) family for generations. Change poses the threat of some loss and of insecurity, and there is often a stubborn conviction that his land is of superior quality to that of everyone else. In such a situation the implementation of a consolidation scheme may well be "a crusade against prejudice, inertia and suspicion" on the part of the peasantry. (Jacoby 1971:268).

It has also been noted, however, that the reactions of individual peasants are not always the same. Conservatism tends to be strongest among the older generation (who find change more difficult) and appears, at least in much of the Third World, to be stronger amongst men than amongst women. Jacoby concluded -

> "that experience has shown that a psychological readiness to accept the changes involved in land consolidation is greatest amongst women who suffer most under the excessive fragmentation of minute holdings and are therefore more

amenable to any proposal that may improve their situation". *(ibidem).*

How far this point is true -- specifically in the Sri Lankan case -- cannot really be judged, but it is noteworthy that in Sri Lankan literature there is no mention of gender beyond rights to land on marriage and inheritance rights. (Leach 1961; Obeysekera 1967). There is no distinction between the roles and interests of men and women, between the ways in which they may have been differently affected by fragmentation, or between different views which they have held on consolidation.

In short, resistance to change can be a considerable obstacle. But it can also be firmly based in an element of pragmatism; it can reflect the vulnerability of the cultivator's position, the narrowness or fragility of a programme, and the fact that it is imposed on an unconvinced and unwilling community that sees its inherent dangers. Resistance is a complex issue that needs careful study.

7.3.3 Leadership

Experiments supported by the Department of Agrarian Services showed institutional support and the quality of leadership at local level to be crucial factors in the success of Sri Lankan consolidation schemes. The composition of Cultivation Committees and the political context in which they emerged was a particular problem. Where strong leadership was not forthcoming (or was not sustained) much greater onus was placed on outside agencies. This could not be maintained and -- as far as can be seen from the data available -- when the support was withdrawn or these bodies were forced to reduce their influence, there was no independent basis on which the scheme could continue. How far the collapse of individual schemes was due to the lack of an institutional base as against other factors, is certainly debatable, but the evidence suggests that in Sri Lanka schemes were held together under normal (non-crisis) conditions as long as there was outside pressure to maintain control and generate local enthusiasm.

A very real question is how these schemes can be self-sustaining. Much clearly rests on felt needs and on the adequacy of the project design. However, the successful promotion of local level institutions dealing with a broad range of needs, and in which the cultivators themselves participate on an equal basis may prove to be a *sine qua non* for consolidation to work.

7.3.4 Non-beneficiaries

An implicit assumption of consolidation as a solution to the problems of fragmentation in Sri Lanka is that everyone benefits. Reallocation of land will somehow lead to all-round greater efficiency and to higher standards of living. However, there are serious grounds for believing this is unrealistic. If a programme area is delimited in geographical terms (as was suggested earlier), then it is very likely that there will be people within it who will not benefit directly, or whose livelihood will be negatively affected by the consolidation that takes place.

First, there will be people with no access to land who rely on agricultural work for a large part of their income. If consolidated lands speed up the process of mechanisation (of, for example, ploughing and threshing), they could well result in the displacement of labour, lower wage rates and higher unemployment and underemployment. This might be offset by increased cropping intensity -- by the reduction of fallow and double cropping, but that will also depend on irrigation conditions. There is no evidence of the effect of earlier Sri Lankan experiments on the demand for labour.

Secondly, land improvement and improvements in infrastructure may actually reduce the amount of land that there is available. In the case of Taiwan it has been suggested that as much as 10% of the cultivable land was lost because of this -- for example through the construction of access roads. Again, there is no indication as to the magnitude of this loss (if any) in the earlier Sri Lankan schemes, but if a scheme is broad and includes this kind of upgrading, some people will lose land.

Thirdly, Sri Lankan schemes have envisaged the reorganisation of scattered parcels into contiguous holdings. The point remains, therefore, that the size of the holding itself may be a limiting factor. Unless the scheme facilitates significant improvements in the productivity of land - which may occur -- it may simply mean that an operator is exchanging (at the cost of a good deal of trouble) the total output of a fragmented holding for more or less the same output from a contiguous plot. In much of the Wet Zone the size of holding is problematic. An assumption of the consolidation discussion is that this size can be increased, but this can only be done if some cultivators are displaced.

And, fourthly, there remain a number of difficult questions about the position of tenants. If, for legal reasons, consolidation must work with owners rather than with operators (or with owners and operators), it is a moot point to what extent tenants retain rights in consolidated holdings.

It may seem desirable that they are not thrown out from the land. But this can lead to considerable complication. If earlier there were many tenants who rented small, separate parcels of land from the owner of a holding, and the holding is consolidated, maintaining tenants' rights on individual parts erodes the aim of the exercise. The assumption is that large units will be more commercial with a greater marketable surplus. Again, if compensation is due for loss of land in the reallocation process, who should be the ones to pay (the owners or tenants who gain, or the state) and who are the ones to receive (the old owners, the old tenants). If compensation is to be divided between landlords and tenants, how should it be divided ? On what criteria, on what legal basis, and by whom ? The question of tenancy rights is therefore a complex one, and one on which the Sri Lankan experience casts little light.

7.3.5 Costs

There is no information available on expenditures associated with earlier Sri Lankan schemes of consolidation, and the cost implications of such a programme are not currently known. However, it has to be recognised that, in general, such schemes are costly and that any future programme will have to weigh carefully anticipated costs against likely benefits received. Preliminary work, land improvement and preparation, infrastructural provision,

provision of alternative employment opportunities for displaced persons, payment of compensation, plus administrative costs -- will together amount to a substantial sum for which funds have to be found. There is no ready information at hand on possible Sri Lankan costs. However, it is important that discussions of consolidation are realistic in cost terms, that the financial implications of such schemes are explored well in advance, and that they are weighed against the possible benefits of alternative strategies.

8. CONCLUDING REMARKS

This paper has explored paddy land consolidation as a policy option in the context of Sri Lanka and it has taken issue with the idea that it is necessarily desirable or could be readily implemented. The notion that it set out to examine maintained that, with physical constraints on state-aided colonisation in Dry Zone areas, paddy output could in future only be increased by raising productivity on existing lands. Particularly in the Wet Zone -- though by no means exclusively -- intensification was said to be hindered by the level of fragmentation that had taken place. Holdings were small, and the efficiency of cultivation was further reduced by the fact that they frequently consisted of minute parcels scattered over a considerable area. The average size of these parcels was often so small that they could not be worked efficiently; many were left fallow while, more generally, they prevented modernisation and engendered conditions of poverty.

In such a situation consolidating minute plots into contiguous holdings of a viable size was said to make economic sense; it would increase efficiency, increase total paddy production and generate a higher standard of living for the cultivators involved. Moreover, as settlement schemes would be unable to serve for long as a safety valve in siphoning off the landless and the unemployed from Wet Zone areas, attention would sooner or later have to be paid to the congestion and the concomitant social problems amongst these paddy producers.

So the argument flows. But how far is it tenable ? This paper has demonstrated that the consolidation of paddy land is, in practice, a highly complex process -- be it on a legal, a technical or a political level. Sri Lanka has little concrete experience with such a process; given the differing ways in which paddy production fits into the rural household economy and the functions fragmentation perform, its pertinence must be viewed with a good deal of wariness, and it must be seen against other strategic options for rural development.

There are a number of concrete grounds for such a view. First, there is no evidence that fragmentation is worsening at such a rate that immediate action is paramount. Since independence in 1948, there would appear to have been a consistently large proportion of paddy holdings very small in size -- to the extent that they could be seriously considered, as such, to be "uneconomic". At least 40% has been under an acre and roughly 20% below half an acre in size. There is no doubt that a problem exists. However, the evidence does not confirm the image of relentless progression of ever smaller units from one generation to the next. Nor does it argue that solution to the problem has inevitably to start and end with the production of paddy.

On the contrary, there are equally strong grounds for arguing that fragmentation in itself is only part of the equation. Since it is known that sub-division is common, and that the

proportion of very small holdings is not substantially increasing, there has to be a parallel process of work -- that of concentration, the accumulation of landed property through marriage, purchase, mortgage or debt defaults etc. In many respects, the operation of the land market, measures (such as improved land registration) to facilitate it, and the parallel process of accumulating land that is taking place, may be as important and effective in creating larger units as government-initiated efforts at consolidation.

Secondly, the logic of the latter approach rests on the assumption that specialisation and commercialised paddy farming is the central issue. Again, there is evidence that this view is unsatisfactory. "Household Income" would in this case seem a far more pertinent concept than "Paddy Income". Few operators on small plots of less than half an acre could see themselves as full-time, commercialised paddy growers -- for a variety of reasons. The most obvious reason is the simple fact that it cannot yield enough. In addition, soil conditions, problems of slope, risks of drought or inadequate drainage, the prevalence of joint ownership or onerous tenure arrangements, also place constraints on potential yields.

For most of these cultivators paddy is a subsistence crop; peasant households derive a substantial part of their income from a number of activities in which their members are engaged and paddy is but one contribution that assures them of some subsistence for at least a part of the year. Small plots of paddy provide an element of security and some social status, while in the Dry Zone fragmentation is an age-old response to uncertain rain and to the risks failure entails. Thus "consolidation" alone may not be adequate unless it takes account of the earlier "mixed" (highland or homestead, *chena*, livestock) cultivation and off-farm possibilities, and promises comparable incomes and comparable security, or assures regular water.

If cultivators do see themselves as commercialised farmers, consolidation that brings together scattered parcels of land, but does not increase the average size of holding may militate against the broader objectives of modernisation based on paddy production. If, as self-sufficiency in rice approaches, priority is increasingly given to concentration of paddy cultivation on those soils and in those parts of the country that are particularly suited to it (which would seem eminently reasonable), areas of heavy fragmentation will rarely fit into this category. There are limits to the creation of really competitive paddy production in many of these areas. Indeed, when self-sufficiency is reached, surplus production may well have a depressing effect on producer prices and leave cultivators in the less suitable areas extremely vulnerable. If the average size of holding increased, this must of necessity displace people from the land in areas of relatively high unemployment. Questions have therefore to be raised concerning alternative employment.

On the other hand, commercialised production does not need to be confined to paddy. There remain the options of diversification to other crops and off-farm employment, and it would seem useful to ask how much (if any) of the heavily fragmented paddy land could be technically or economically unsuited for other crops, and to explore the principal zones of concentration as pilot areas for the creation of off-farm employment.

It may be that, when all is said and done, voluntary consolidation appears pertinent in highly localised situations. The record of such experiments, however, is not encouraging. Few schemes have been successful in the long-term, and they have generally been part of a broader programme of land improvement, the provision of infrastructure and the provision of services, and these can only be planned for a contiguous area. The solution to the

fragmentation of paddy land -- in as far as direct intervention should seek to resolve it -- would seem to lie, in the longer term, in a strategy that lays high priority on diversification and the generation of off-farm employment, and which pays careful attention to the possibilities in geographical zones in which these problems are acute. It does not seem to lie in consolidation.

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