A Strategy for Land Consolidation in Dry Zone Purana Villages

Marcus Karunanayake

The need for consolidation of the fragmented paddy lands of the peasant farmers in the dry zone purana villages with a view to increasing productivity is discussed in this paper by Marcus Karunanayake, Dean Faculty of Arts, Vidyodaya Campus. Dr. Karunanayake has carried out studies and written many papers on the attitudes of peasants in Sri Lanka's Dry Zone villages to land consolidation, adaption to droughts and other agricultural practices of peasant farmers.

Consolidation of the heavily fragmented paddy lands in the rice growing countries of Asia can help to a large extent in the more efficient use of water for irrigating those lands. This is a principle now accepted in many of these countries where it is acknowledge that through increasing the efficiency of existing irrigation systems and exploiting known ground water resources could be found the greatest potential source for stepping up levels of food production in the South Asian region. Several studies of agriculture in the various countries of Asia have highlighted the large and undeveloped potential for irrigation in this region; India, Pakistan, Bangladesh and Burma being the outstanding examples. More important is that even where irrigation capacity has been built water is often used inefficiently.

In many such places, irrigation systems are less efficient than they should be because their design characteristics are antiquated or because farm holdings are fragmented into large numbers of irregular plots. Many of these traditional systems do not seem suitable to present day intensive cultivation. It has been found that many modern designs for new systems and renovation of old systems can add substantially to the amounts of water available right down to the smallest farmer, thus easing the redistribution of water and expanding the total of irrigated area with a resultant gain in productivity. But land consolidation, though it is generally agreed is a good thing, has not been easy to achieve.

A recent observation on the agricultural situation in the low income Asian countries made in the "World Development Report 1978", issued by the World Bank in August, draws attention to this aspect as follows: "Consolidation of fragmented holdings has been an objective of the agrarian policy for many decades in Low Income Asian countries. It serves other objectives besides efficient water distribution — for example, land levelling and shaping, reducing the land used in boundaries and cutting the time required to travel among the plots. It also simplifies land use planning. But little land has actually been consolidated. Even where it has, the consolidation has generally been incomplete and not in accordance with any systematic plan for land, soil and water development". This statement is an accurate surmise of the situation in Sri Lanka as well. Despite the provisions in both the Paddy Lands Act No. 1 of 1958 and the Agricultural Productivity Law No. 2 of 1972 little or no effort has been made at land consolidation; even where attempts have been made these have met with failure owing largely to peasant resistance.

There is now a great need for consolidation of holdings in the Dry Zone *purana* (ancestral) villages. A central problem today is that much land in the *purana* villages that can be brought under cultivation is annually left fallow even when sufficient water is available or may be cultivated once in a few years only, largely due to excessive fragmentation of land. It may also be that optimum use of land may not be possible. However, if all such land is annually brought under cultivation there should undoubtedly be a greater contribution to national paddy production, even without the addition of capital intensive inputs. In any case the present pattern of tenure also prevents the easy adoption of innovative practices in irrigated paddy cultivation. Hence, the urgent need for serious thought to be given to the problem of land consolidation in the *purana* villages as Dry Zone development has to be conceptualized both in terms of the many large scale land settlement schemes and the multitude of *wewa* (tank) based villages. (In the Anuradhapura district alone there are well over 700 *wewa* based villages. The average extent of paddy under a *wewa* varies from 50—75 acres.) Furthermore, water and not land is the limiting factor in Dry Zone peasant agriculture. Hence, there is the need to maximize on the available water resources. But in the *purana* villages water could be land augmenting only by an effective and rational approach to the problem of land consolidation.

PATTERN OF LAND TENURE

As a prelude to an examination of the tenurial system of the *purana* villages of the Dry Zone it is necessary to consider the underlying principles. Since water is the scarce factor the rights to irrigation water are of utmost importance. This has resulted in an elaborate and finely worked out dispersed system of land tenure which ensures social equity by a fair and equal access to irrigation water. The need to provide social justice by way of equal access to irrigation water has resulted in the fragmented ownership of paddy land; this has also ensured a more or less equitable distribution of the fertile and infertile land among the different yaya owners. The *yaya* (paddy-fields) below the tanks are laid out in several sections. The number of divisions into which a yaya is sub-divided depends on the irrigation potential of the *yaya*, i.e. a larger village tank will have a larger number of units within a *yaya* than a smaller one. Indeed the fields under the realtively smaller tanks may not be sub-divided. At Parangiyawadiya — a village in the Hurulu Palatha, the *yaya* is in 4 unequal sections.[1] Again at Ihala Puliyankulama in the Puttalam district a still more complex pattern is in evidence. The major tank is supported by a number of smaller tanks; each tank provides for a distinctive *yaya* pattern depending on irrigation potential.[2] Investigations in the field reveal that in its pristine form the tenurial system was designed to provide each owner a *pangu* (share) in each section of the *yaya*. This is a rational and convenient arrangement whereby the problem of differential access to water is overcome by the *yaya* shareholders. In particular it ensures maximizing on the available water supply in the drought prone Dry Zone environment. That is to say, the system permits the *yaya* cultivation in reduced units (determined by the drought intensity) without effecting the relative return per share per owner.[3]

This practice in the parlance of the Dry Zone peasant is called the *bethma* (division) system. However, it should be noted that the system cannot function efficiently unless there is equality or moderate inequality in the pattern of ownership. It becomes increasingly evident that rising inequality in land ownership is constraining the operation of the *bethma* principle on the basis of finely worked out *yaya* divisions and require more flexible arrangements as those described by Yalman for Vilawa — a village in the North-Western Province.[4]

In an environment, where scarcity of water is the crucial factor influencing settlement and agriculture, the rights to irrigated paddy land are of the utmost importance. This has, for example, resulted in a highly complex and finely worked out system of land tenure among the peasants of Parangiyawadiya

The division of the yaya in four unequal sections provides the framework within which the tenurial system is operated. It is argued that the fragmented ownership of *yaya* land may not be a problem when labour is the only in put in agriculture. However, if other capital inputs are to be introduced and utilized efficiently in peasant agriculture, the fragmented ownership of land is bound to place constraints. Thus, it is seen that land consolidation is an essential prerequisite in the modernization of peasant agriculture. This fact is recognied in recent legislation relating to the peasant sector. of Sri Lanka. (e.g. the Agricultural Productivity Law No. 2 of 1972).

It is claimed by the peasants of Parangiyawadiya that the fragmented ownership of land is an important factor in the proper maintenance of the channel system which forms a vital component of irrigation. Unless the channel bed is clear and graded, it is not possible to ensure the equitable distribution of water among the different sections of the *yaya*. The failure to achieve this results in an inadequate supply of water especially to the lower sections of the *yaya;* there is also the attendant problems of water loss due to evaporation and seepage. Further, some parts of the *yaya* may be affected by a surfeit of water. It is, therefore, suggested that the present system of dispersed ownership of land is a factor which contributes to the collective maintenance and management of the channel system. There is the fear that consolidation of land, resulting in the localization of individual interest in the *yaya*, might result in the neglect of the channel network.

The peasant resistance to land consolidation is also supported by the fear that it would result in the disintegration of the finely worked out cultural practices designed to maximize on the scarcity of water and provide social justice to the community. A close examination of the cultural practices involved is necessary for the proper appraisal of the point at issue. Thus it is seen that the usual practice in irrigated agriculture is to irrigate the fields farthest from the *wewa* first and then work in progression towards the source of water supply. Even if the entire *yaya* is not cultivated (based on collective decisions when the *wewa* water is insufficient), the same principle is adhered to, i.e. cultivation begins at the farthest point. This is a sensible practice since it ensures that the fields located at some distance from the *wewa* will have water for cultivation. On the contrary, if the fields closer to the *wewa* are irrigated first it might not be possible to provide sufficient water to lower sections of the *yaya*. It is also pertinent to mention that the *wagula* principle is adhered to by the peasants of Parangiyawadiya to derive further advantage from the cultural adaptation described above. It is therefore, a common practice sanctioned by tradition that in the preparatory stages of cultivation, irrigation water is conducted in temporary channels (wagula) which cut across fields lying above those irrigated. Such channels are usually non-circuitous. It is therefore, possible to minimize the losses due to evaporation. It should be noted that such practices are possible because the peasant is socially conditioned to adhere to group norms; without it the group as a whole stands to lose. It is feared that consolidation would remove the social compulsion to obey group norms thus creating problems in the management and utilization of irrigation water.

The dispersion of shares within the *yaya* is also a convenient arrangement to overcome the differential fertility of the *yaya*. It is observed that there is a progressive increase in fertility from the upper to the lower end of the *yaya:* this has much to do with the flow of irrigation water i.e. the coarser material is deposited nearer the source of water supply while the finer silts are deposited in the lower reaches. Thus the situation arises where in the upper reaches there is an assured water supply combined with low-fertility. and in the lower reaches a less reliable water supply combined with high-fertility. Hence, the tenurial principles outlined above tend to balance the inequalities of the land-water relationship.

It has also been argued that the small units of cultivation permit better regulation of irrigation water and allow for more intensive use of the *liyaddas* (fields enclosed by bunds).[5] Further, fragmentation permits the proper maintenance of the irrigation system because it ensures collective responsibility for the channel system.

It is useful at this stage to examine the more specific characteristics of fragmentation. The statistics given in the tables relate to Parangiyawadiya but in the author's experience the generalizations drawn from these tables hold true for other *wewa* - *yaya* systems of the Dry Zone.

Table — I OWNERSHIP PATTERN IN RELATION TO YAYA DIVISIONS

Ownership Pattern	n = 87 Number
Shares in all 4 divisions	57
Shares in 3 divisions only	19
Shares in 2 divisions only	07
Shares in a division only	04

Source: *Field Survey*

The data in table I reveal that of the 87 shareholders of the *yaya*, 66 percent own land in all four divisions of the yaya. (It has already been mentioned that the *yaya* in Parangiyawadiya is in four unequal sections). But 13 per cent hold shares in one or two sections of the *yaya*. Another 22 per cent have ownership rights in three divisions only. The inequality of *pangus* evident in the table is a negation of the ideal referred to earlier. It is clearly a recent development and is a sure indication of the increas-

Table — II OWNERSHIP OF PARCELS OF PADDY LAND

Number of	Number	Ownership percentage
1 — 4	47	54
5 — 8	22	25
9 — 12	10	11
13 — 16	06	07
17 — 20	01	01
21 — 24	01	01

Source: *Field Survey*

ing pressure of population on land.

Table II clearly indicates the nature of fragmentation arising from the dispersed ownership of paddy land. The data reveal that 54 per cent of the owners held 1 to 4 parcels of land; but 46 percent owned between 5 and 24 parcels of land.

The figures relating to the size of holdings show that 94 percent of the parcels are below one half acre in extent; indeed 47 percent of the parcels are below ¼ acre. Only 3 percent of the parcels are over 1 acre in extent (Table III).

Need for Consolidation

The principles of the tenurial system discussed above indicate the rationale behind fragmented holdings in an environment subject to periodic droughts. The question, therefore, may be posed as to why a system of land tenure that has undergone cultural selectivity needs change or to rephase the question, what is the need for land consolidation?

Table — III PARCELS OF PADDY LAND

Extent in acres	Number of plots	Percentage	Cumulative percentage
1/16	74	14	14
1/16 — 1/8	113	22	36
1/8 — 1/4	57	11	47
1/4 — 1/2	249	48	95
1/2 — 01	17	03	98
01 — 14	14	03	101

Source: *Field Survey.*

The smooth operation of the traditional system necessitates that the *wewa - yaya* system is the focal point of interest of the community. It is then only that elaborate cultural practices associated with irrigated paddy cultivation could be completed in time. Further, the collective — co-operative effort of the community is needed in the sequential cultivation of the *yaya.*[6]

However, the pressures of change have eroded the importance of the *yaya* as the focal point of economic activity of the *purana* village. Favourable market prices for *hen* (chena) crops, have resulted in a shift of interest to the hena. Besides there are other attractions. Quite often labour is the only input in *hen* cultivation; and returns to labour expended are high. *Hen* cultivation also makes for a greater degree of individual decision making unlike in *yaya* cultivation which necessitates collective decision making; it is imperative that individual decisions accord with group norms.

In some instances noted by the author there is the preferential use of land received under village settlement expansion. The situation at Parangiyawadiya is a case in point. The new land received is in larger units (2 acres per individual) and such land does not come under the rigid social and cultural norms adhered to by the community in respect of the *purana yaya.* Thus the approach is more individualistic and cultural practices such as *bethma* which asserts collective right over individual rights are ignored. This in a sense encourages the addition of capital inputs and the adoption of innovative practices.

All this means that the focal position occupied by the *wewa - yaya* system originally is now relegated to a peripheral one. The *wewa-yaya* system receives attention only after the initial activities relating to the cultivation of 'new fields' and *hen* have been completed. If too much time of the agricultural calendar is taken up by these activities in a particular season it invariably follows that the *purana* fields will be left in fallow or not used to full capacity. There is also the added point that the *wewa-yaya* system demands a collective co-operative approach. The cultural practices associated with the cultivation of the *yaya* demands that cultivation should begin at the lower end of the *yaya.* Unless all *yaya* holders work in unison it will not be possible for the upper reaches of the yaya to be worked because the *wagula* principle sanctioned by custom demands that water be taken to the lower sections of the *yaya* by means of temporary channels to minimize the labour expended and reduce water loss due to seepage and evaporation; these temporary channels cut - across *liyaddas* in the upper and middle divisions of the *yaya.* Therefore, failure by individuals to meet common work schedules retard the entire scheme of *yaya* operations and frustrates the efforts of enterprising individuals. It is such factors, therefore, which contribute to the apathy shown by the peasantry towards the cultivation of the *purana* fields. However, the crucial point is that owing to the above there is a large-scale neglect and non-operation of *purana* fields which can be ill afforded from a national point of view.

It is thus imperative that a well formulated policy of land consolidation be implemented in tne *purana* villages of the Dry Zone. Hopefully, consolidation will result in larger holdings that will facilitate easier and better cultivation. It will also provide the incentive to adopt innovative methods. The agricultural practices in the *purana yaya* at present functions, often at a level of 'static — efficiency' because of limitations set by the terminal system. But it has been demonstrated that this system of tenure evolved in response to the drought hazard. Hence any scheme for land consolidation should take note of this factor and the alternative strategies should be capable of overcoming the 'cultural inertia' of the peasant to change a time honoured system.[7]

SUGGESTED STRATEGY FOR CONSOLIDATION

This section introduces a strategy that may be adopted to consolidate land in the *purana* villages of the Dry Zone. It takes into consideration three crucial variables influencing peasant resistance to

land consolidation viz, (a) scarcity of water (b) the differential fertility of the land and (c) the size of individual holdings.

Land consolidation necessarily implies a change in the present practices relating to irrigation water use. It has already been observed that the scarcity value attached to water is a factor in the present system of land tenure. If the water supply can be assured for both *Maha* (rainy season) and *yala* (dry season) it will be possible in large measure to overcome peasant resistance to land consolidation. However, it calls for a change in the methods of cultivation as now practised. The usual practice at present is to commence irrigated paddy cultivation after the *wewa* is filled to capacity by the *Maha* rainfall. As a consequence much of the initial fall runs to waste. However, the Dry Zone farmer is also adept at rainfed paddy cultivation under certain conditions. In the terminology of the Dry Zone peasant, rainfed cultivation is known as *kekulan*. The technique of rainfed paddy cultivation is less exacting than that for flow irrigated paddy cultivation. It is suggested that by a combination of both techniques it is possible to maximize on the available water supply. This will necessitate rainfed cultivation of the *yaya* in *maha* thus conserving the *wewa* water for yala cultivation. If necessary wewa water may be stringently used to supplement rainfed paddy cultivation in *maha*. An alternative strategy for *maha* cultivation (is that of utilizing sub-surface water by recourse) to lift irrigation as suggested by Madduma Bandara.[8] This, however, involves a wide departure from existing cultural practices.

The adoption of the charges suggested above calls for a better system of water use than that available at present. Therefore, it is imperative to do away with the present permissiveness in irrigation water use. It will, therefore, be necessary to introduce strict supervision and discipline in water issue and serious thought has to be given to evolving an efficient institutional mechanism at village level for the enforcement of irrigation rules. As Chambers suggests these measures would be ineffective without political support from the highest level.[9]

The process of consolidation itself could be a gradual one. It will assess the importance of land consolidation through practical experience. An example will illustrate the point. It has been pointed out that the *yaya* is in four divisions in Parangiyawadiya. It has further been observed that there is fragmentation within each section of the *yaya*. It is suggested that as a first step the dispersed ownership of land in the different divisions of the *yaya* be maintained while achieving consolidation within each section. Total consolidation of holdings — i.e., the consolidation of the entirety of an individual's holdings in the different sections of the *yaya* into 'one block' may be effected on a pre-determined time - scale.

In effecting 'total consolidation' due consideration must be given to the extents held by individuals. The differential fertility of the *yaya* too has to be taken into account. It would, therefore, be necessary for those owning small extents to be allocated land in the more fertile sections. It needs to be mentioned in passing that the greatest resistance to land consolidation is shown by those owning relatively small extents of land. Those owning larger extents will have to be accommodated in the less fertile sections. This might call for forceful action on the part of the village level institutions. Indeed in some cases compulsory acquisition may be a prelude to land consolidation. In regard to those owning small extents of land it may also be necessary to explore the possibilities of resettling them elsewhere. But the extent of land allocated under village settlement expansion must be sufficiently attractive to influence the decisions of the peasant to relinquish his rights to the *purana yaya*.

Once land consolidation becomes a reality measures should be taken to prevent subdivision and fragmentation. This is imperative as the traditional laws of inheritance allow for the transmission of property both through males and females[10] however, there is bound to be great ressistance towards any legislative measures aimed at modifying the rules of inheritance. The way out of this impasse appears to be to make a distinction between the unit of ownership and the unit of operation. It could be legislated that while property can be subdivided for the purpose of inheritance, the consolidated units of operation should be maintained intact. The Paddy Lands Act No. 1 of 1958 recognized this distinction. However, it did not lead to any far reaching results because this provision primarily applied to land held by tenants only.

CONCLUSION

It has to be borne in mind that land consolidation is a means to an end and not the end itself. Theoretically, land consolidation by facilitating the application of more efficient methods of production should lead to a rise in productivity. However, this cannot be achieved by the act of land consolidation alone. It is necessary that supporting measures for agricultural development should be made available to the peasant by further strengthening infrastructural facilities.

NOTES AND REFERENCES

1 Karunanayake M.M., 1977. 'The Attitude of Peasants to Land Consolidation: a case study of a Dry Zone Village in Sri Lanka, *National Geographer 12: 25—34.*

2 Karunanayake M.M., 1976, 'Adaptation to droughts in a Dry Zone Village of Sri Lanka' in R. L. Singh *et al* (ed) *Geographical Dimension of Rural Settlements. BHU.*

3 Leach, E.R., 1960. "The Sinhalese of the Dry Zone of Northern Ceylon", *Social Structure in South East Asia* Viking Fund Publications in Anthropology No. 29 pp. 116—126.

4. Yalman, N., 1971, *under the Bo Tree*, Berkeley.

5. Farmer, B.H., (1960) 'On Not Controlling Sub-divisions in Paddy Lands Transactions of the Institute of British Geographers 28: 225 — 235.

6. For a discussion of the finely worked out cultural practices associated with the *wewa - yaya* system see Karunanayake, M.M. (1977) and (1976) op. cit.

7. On peasant resistance to land consolidation see Karunanayake M.M. 1977, op. cit.

8 Madduma Bandara, B.C., 1977 'The Prospects of Recycling Subsurface water for Supplementary Irrigation in the Dry Zone' in *Agriculture in the Peasant Sector of Sri Lanka*, Ceylon Studies Seminar.

9. Chambers, R. 1977 'On Substituting Political and Administrative Will for Foreign Exchange in *Agriculture in the Peasant Sector of Sri Lanka*, Ceylon Studies, Seminar, Peradeniya.

10. Leach, E.R., 1960, op. cit.