

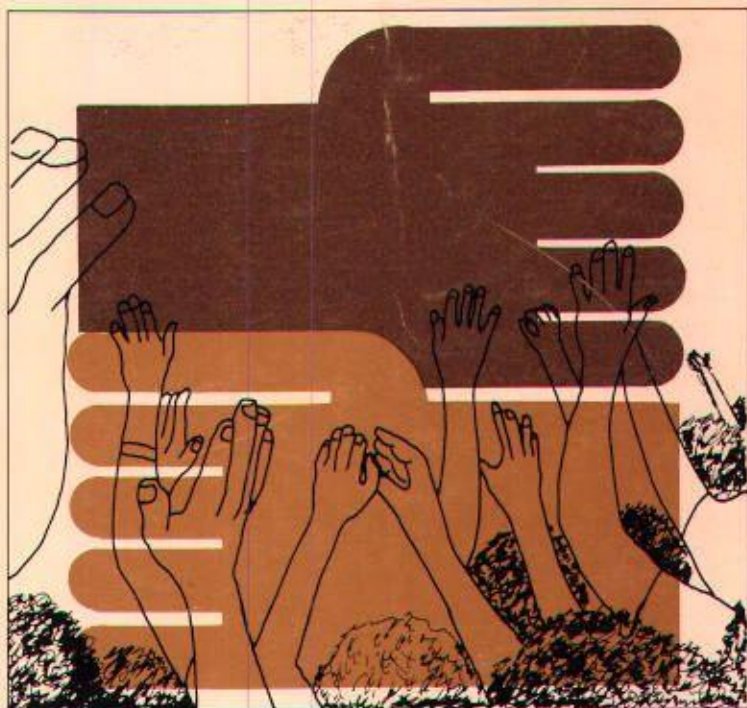
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From planned intervention to negotiated development

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The struggle of bureaucrats,
farmers and traders in the Mahaweli
irrigation scheme in Sri Lanka

S.S.A.L. Siriwardena



Stallingen

behorende bij het proefschrift 'From planned intervention to negotiated development', door S.S.A.L. Siriwardena.

1. The interrelations of theoretical notions and policy models have been under-researched. Therefore many development problems of irrigation settlement projects have been identified and explained in terms of the weaknesses of project implementation and not as a failure of the development models themselves.
2. When government policies are implemented through local officials, the top-down authority structure gets tilted, because of the manipulation of down-upward communication flows by the local agents.
3. If social change and development is simply viewed from the perspective of implementing agencies or that of policy models, then one will find it difficult to understand who creates development problems, and who needs solutions.
4. Farmers are not passive participants within official development programmes but strategic actors who use their knowledge and capabilities to pursue their own interests.
5. The commoditization process, which follows the logic of the market, is blocked by counter-tendencies that emerge from farmers' livelihood strategies aimed at market avoidance.
6. Policy discourse and the procedures of development intervention acquire legitimacy within bureaucratic settings, but lose their social meaning in local arenas of development.
7. When confronted with the struggles, negotiations and strategic actions of farmers, local officials are forced to alter the policies and procedures of planned intervention in order for themselves to survive within local arenas.
8. Rather than bringing water to people, the Mahaweli Scheme (Sri Lanka) has brought people to water.
9. The participation concept has been misused for management purposes.
10. High-protein animal food shipped in from third world countries to Holland sustains Dutch agricultural development. Thereafter, animal waste, accumulated in groundwater manifests the underdeveloped nature of Dutch agriculture.

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FROM PLANNED INTERVENTION TO NEGOTIATED DEVELOPMENT:
THE STRUGGLE OF BUREAUCRATS, FARMERS AND TRADERS IN
THE MAHAWELI IRRIGATION SCHEME IN SRI LANKA

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hoogleraar in de rurale
ontwikkelingssociologie.

FROM PLANNED INTERVENTION TO NEGOTIATED DEVELOPMENT:
THE STRUGGLE OF BUREAUCRATS, FARMERS AND TRADERS IN
THE MAHAWELI IRRIGATION SCHEME IN SRI LANKA

S.S.A.I. SIRIWARDENA

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ABSTRACT

This thesis examines the ways in which farmers, local officials and traders reshape the planned programme of development initiated from "above" by the Mahaweli Settlement Authority in Sri Lanka. This process of reshaping involves both individual and collective struggles aimed at realizing the goals of the three different actors at the point where planned intervention actually takes place. It therefore entails both a contest of interpretation and social interest. The dynamic and emergent character of these "struggles from below" is analyzed, taking into account the interlinkages and interactions of the three groups of actors as they deal with the new circumstances they face as a result of the introduction of new forms of development intervention.

A detailed analysis of the reality of ongoing local processes in Mahaweli settlements reveals that many of the assumptions made about the nature of agrarian social change, as viewed from the perspective of the intervention of public authority or powerful outside organizations, are non-valid or empirically unfounded. It is found, for example, that: a) at critical points of linkage, producers apply government policies in accordance with their own practical needs and transform them by attributing to them social meanings that were not set out in the original policy statements; b) local officials, when confronted with the struggles, negotiations and strategic actions of farmers, are forced to alter the policies and procedures of planned intervention in order for themselves to survive within these local arenas or "battle grounds" with farmers; and c) the logic of markets cannot be used to explain the interdependency and types of personalized social

relations that emerge between local traders and farmers. Hence, both 'frontline' government officials and local traders are knitted into the fabric of local life, establishing and adjusting their goals in accordance with the exigencies of local pressures and interests.

These various complex processes of adaptation have meant that, in many ways, commoditization in the Mahaweli case has reinforced processes of peasantization rather than depeasantization. Farmers use their knowledge and social experience to devise their own livelihood strategies. In this way, the so-called "market-led" commodity economy, promoted by the penetration of merchant capital, has been re-shaped into a "farmer-led" economy, whereby farmers have incorporated traders and officials and their activities into their own livelihood strategies.

ACKNOWLEDGEMENTS

My interest in a study of this nature originated when, as a Research Officer of the People's Bank in Sri Lanka, I was monitoring socio-economic problems of Mahaweli farmers. From close observation of the everyday living problems of farmers over the past ten years, I have come to learn much more about the reality of social life than what I learnt from theoretical studies on the subject of social change. My initial interest therefore was to analyze the actual practices of development undertaken by the people involved.

This interest was developed further after I came into contact with Norman Long, Professor of the Department of Rural Development Sociology of the Wageningen Agricultural University. I was fortunate to have Professor Long as my supervisor, who encouraged and guided me to carry out further research along my line of thinking and finally to produce this thesis. I wish to express my greatest gratitude to him for his deep interest in my research, for his comments and criticisms based upon his outstanding academic qualities and world-wide experience in rural sociology, as well as for his help and kindness. I also wish to thank staff members and postgraduate students in the Department for their friendly cooperation, fruitful discussions and debate. I benefitted a great deal from discussions with Professor Dirk van Dusseldorp who has much experience in Third World development problems, Dr. Jan den Ouden who always helped me to solve practical problems during my stay in the Netherlands, Ms Nannie Brink and Ms Jos Michel who were very kind in sharing my typing problems and who helped me right up until the final printing of the thesis. I wish to record my sincere thank to all of them. In the same way I would like thank Professor Norman Long, Mrs Ann Long and Dr Christopher Martin who were involved in the frustrating final task of editing the thesis.

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Finally, I must emphasize the critical role played by Chandi, Ama and Sara during the entire period of my studies. Chandi took over the most difficult part of our family life, undertaking responsibilities and duties in addition to her own job. Ama and Sara shared the difficulties with her and helped me to concentrate on my work. I am certain that without their help and encouragement I could never have found the time to complete this study. I thank them deeply for all their sacrifices and for this difficult way of contributing to my education.

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CHAPTER ONE

PLANNED INTERVENTION AND ACTOR STRATEGIES IN IRRIGATION DEVELOPMENT: BACKGROUND AND THEORETICAL APPROACH.

INTRODUCTION

The settlement of populations in large-scale irrigation schemes, under the technical and administrative control of state agencies, constitutes a complex process of rural "incorporation" and "modernization" leading to complicated social problems and sometimes farmer resistance. The first part of this introductory chapter outlines the social conditions of such schemes and provides a broad description of the size, scale and dilemmas of the Mahaweli Irrigation Project in Sri Lanka. This is followed by an examination of the socio-economic problems of the Mahaweli settlement and of the ways in which researchers have interpreted and analyzed these problems. Finally, I elaborate the methodological and conceptual weaknesses of existing theoretical models for understanding problems of agrarian development and argue the usefulness of an alternative approach for analyzing planned intervention and farmer strategies in Mahaweli settlements.

During the last two decades most Third World countries have experienced a new phase of agricultural development, whereby new efforts have been made to introduce modern forms of technology in subsistence-oriented agriculture.

Some countries, such as Sri Lanka, have undergone dramatic changes in their agriculture as a result of the re-structuring of their rural economies projects involving both land development and population settlement. According to the World Bank, the Asian continent constitutes more than 80 percent of the world's irrigated area, which has been the single most important factor in increasing rice yield (1).

Various funding agencies and local institutions with a commitment to these projects have attempted to demonstrate their success by quantifying the infrastructural and physical aspects of irrigation and agricultural development. Official documents frequently highlight the most concrete aspects, namely, investment resources and equipment required for implementation and expected results in terms of production, employment and income. More specifically, the expected results include capital formation of land, since land, which would otherwise be unproductive, is converted into productive agricultural areas. Land (usually rain forest or marginal subsistence farming areas) brought under irrigation is expected to provide the basis for employment and income generation for the households involved in commercial production, as well as for the nation as a whole, through the types of high-value products grown. These effects, which we might label quantitative and economic, are fairly easy to measure or estimate and they are usually presented as the rationale behind such undertakings. While available statistics show overall progress for irrigation schemes, many recent accounts of global irrigation paint a gloomy picture of the adverse social, economic and ecological impact of such projects. Although 'big dam' schemes promise much, they have frequently failed to deliver. Today the developing world

is full of such dam schemes that have not fully lived up to expectations (Madeley, 1983:8).

During the last decade almost every such irrigation project has been affected by social and environmental problems.(2) The socio-economic effects of irrigation are often more serious than other aspects of resettlement farming since irrigation systems frequently have negative implications for certain social groups. Furthermore, irrigation projects often portray a picture of massive ecological destruction, social misery, and increasing ill-health and impoverishment for those very people for whom such projects were intended most to benefit (Goldsmith and Hildyard, 1986:50-78). Moreover, it cannot be doubted that irrigation is a technique of great complexity with a vast appetite for finance and sensitive to errors in planning and construction. From the beginning of the seventies, many modern irrigation projects have been dogged with problems relating to technical malfunctioning and to deleterious economic and social consequences for water-users (Hazlewood and Livingstone, 1982:20-39).

Thus, despite official estimates and progress reports detailing the achievements of large-scale irrigation projects in developing countries, empirical evidence suggests that such schemes display major shortcomings. Goldsmith and Hildyard (1985) highlight the following problems in selected irrigation projects of the Third World:

- They require a great number of development personnel and demand an intensive utilization of chemicals (fertilizers, insecticides and herbicides), the use of which farmers have yet to master. Unless a programme of

closely supervised aid is introduced, the farmers may suddenly find themselves immersed in the cash economy and face financial burdens which bear no comparison with their current expenses, or they are compelled to become salaried agricultural workers.

- Irrigation projects are gradually integrated into the local political economy. Some farmers and local groups continue to refuse to co-operate with these projects. Others establish special relations with project staff in order to obtain access to water and other services on the most favourable terms possible. Project officers are thus placed in a position of handing out patronage which brings benefits to themselves. Often investment is lost and peasant benefits are only maintained through state subsidies.

- Self interest of many officials working in irrigation projects increases because they fear that they will be without work once existing projects are completed. Projects are immensely profitable and prestigious to them. Yet the process embarked upon is not sustainable ecologically, and is often socio-culturally destructive (Goldsmith and Hildyard, 1985:28-82).

The Mahaweli Irrigation Settlement Project in Sri Lanka

Arising from the desperate search for a large-scale technological solution to Sri Lanka's increasing food and employment requirements, the government, in 1977, embarked upon a multi-million dollar project: the Accelerated Mahaweli Development Project. This was a huge undertaking which aimed at building self-sustained

family farms, considered of major importance to the entire nation.

The Master Plan

The Mahaweli Ganga basin covers a total area of about 4,000 sq. miles of the country's 25,000 sq. miles and has been estimated to discharge nearly 6.4 million acre-feet of water into the sea. This volume of water represents approximately one fifth of the total discharge of all the island's rivers into the sea. In order to plan the utilization of the water resources of the Mahaweli in an effective manner, an UNDP-FAO team, together with Sri Lankan engineers and scientists, carried out investigations during a four-year period between 1964 to 1968, and formulated a 'Master Plan' which proposed to utilize 4.3 million acre-feet of the flow of the Mahaweli Ganga in an area of 900,000 acres in the dry zone of the country, and to use the 0.9 million acre-feet of water already available in these areas. The total area of irrigation and settlement development covered 365,000 hectares (901,500 acres) of new land under irrigation, of which 100,000 hectares (247,000 acres) consisted of already developed land but which was now designated for the construction of a series of reservoirs on the Mahaweli Ganga and its tributaries.

It was originally intended not merely to irrigate about 900,000 acres of land but also to develop 15 multi-purpose projects, 4 trans-basin diversion canals, several power stations with a total capacity of 500 megawatts, and to settle over half a million people who would earn their livelihood in the area, all at a cost of Rs.27 billion (1977 prices).

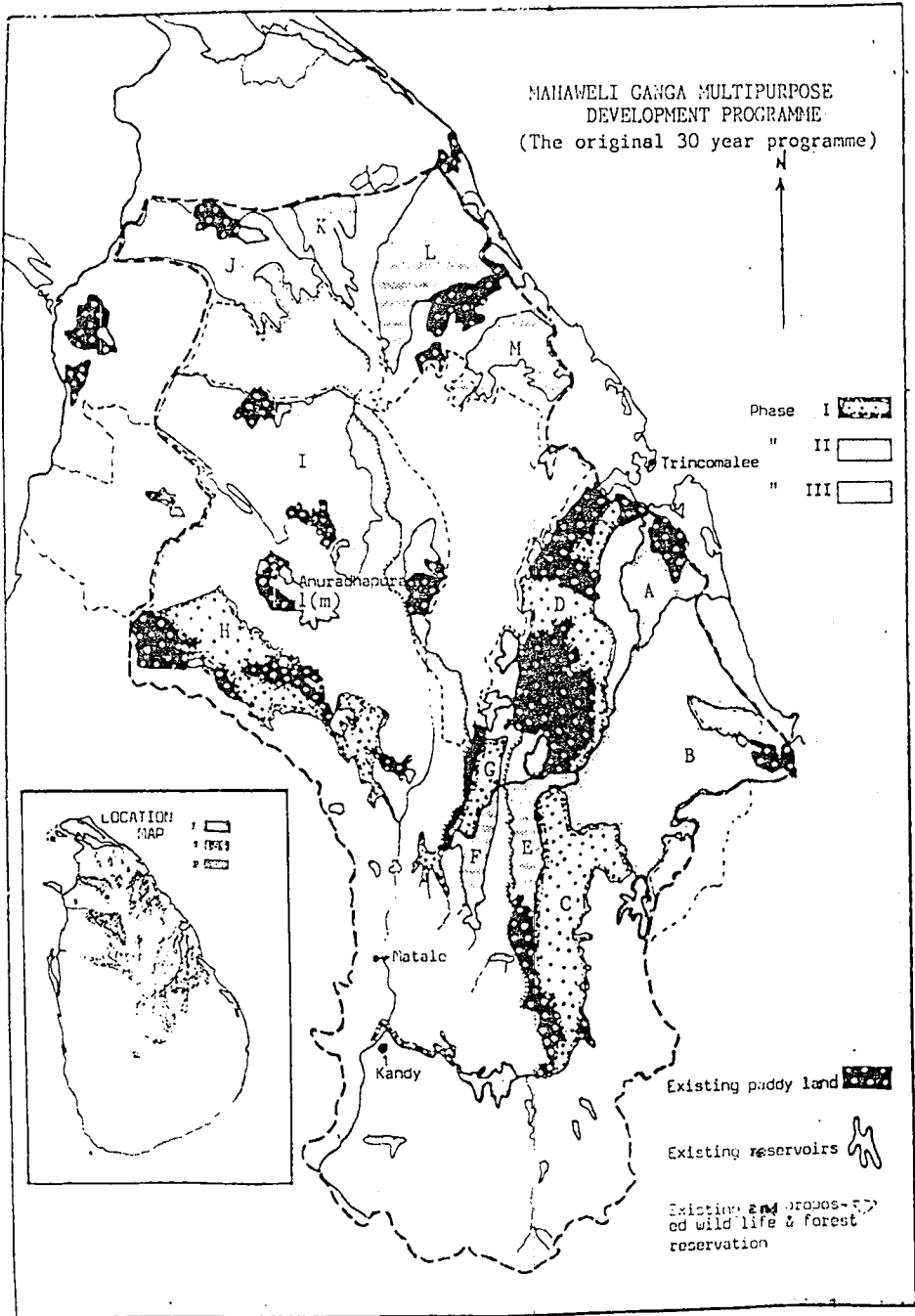
Accelerated Programme

After 1977 there was heavy pressure to speed up implementation of this project. A step-by-step implementation of the originally proposed Mahaweli Development Programme would have lasted 30 years from 1975. So in July 1977, the new government decided to accelerate implementation of a truncated programme and to complete the project within its term of office of 6 years. The decision was taken for 'acceleration' or immediate implementation of certain key projects of the Programme, based on the recommendations in the Mahaweli Master Plan that had been formulated in 1968 by the UNDP and FAO, with the assistance of relevant Departments of the government of Sri Lanka. What was meant by 'accelerated' was that a number of projects would be undertaken simultaneously which, under normal conditions, would have been carried out sequentially (see Map 1).

After the decision was taken to 'accelerate' the Mahaweli Development Programme, the responsibility for its implementation was vested in the newly established Ministry of Mahaweli Development. As an umbrella organization for planning and implementing the programme, the Mahaweli Authority of Sri Lanka was established in 1979.

A Multiple-Purpose Project

The Accelerated Mahaweli Programme envisaged the



hydro-electricity plants and the development of a large area of land in the downstream areas with irrigation facilities. The establishment of this new programme required about 320.000 acres (compared to the original 900.000 acres) for irrigation, agricultural and infrastructural purposes. It would also increase the hydro-electric generating capacity of the island by 400 megawatts through the construction of six major reservoirs and five power stations. It was hoped at that stage, that these major works would be completed within six years, beginning in 1978, at an estimated cost of Rs.11 billion, the major part of this investment being for equipment and materials.

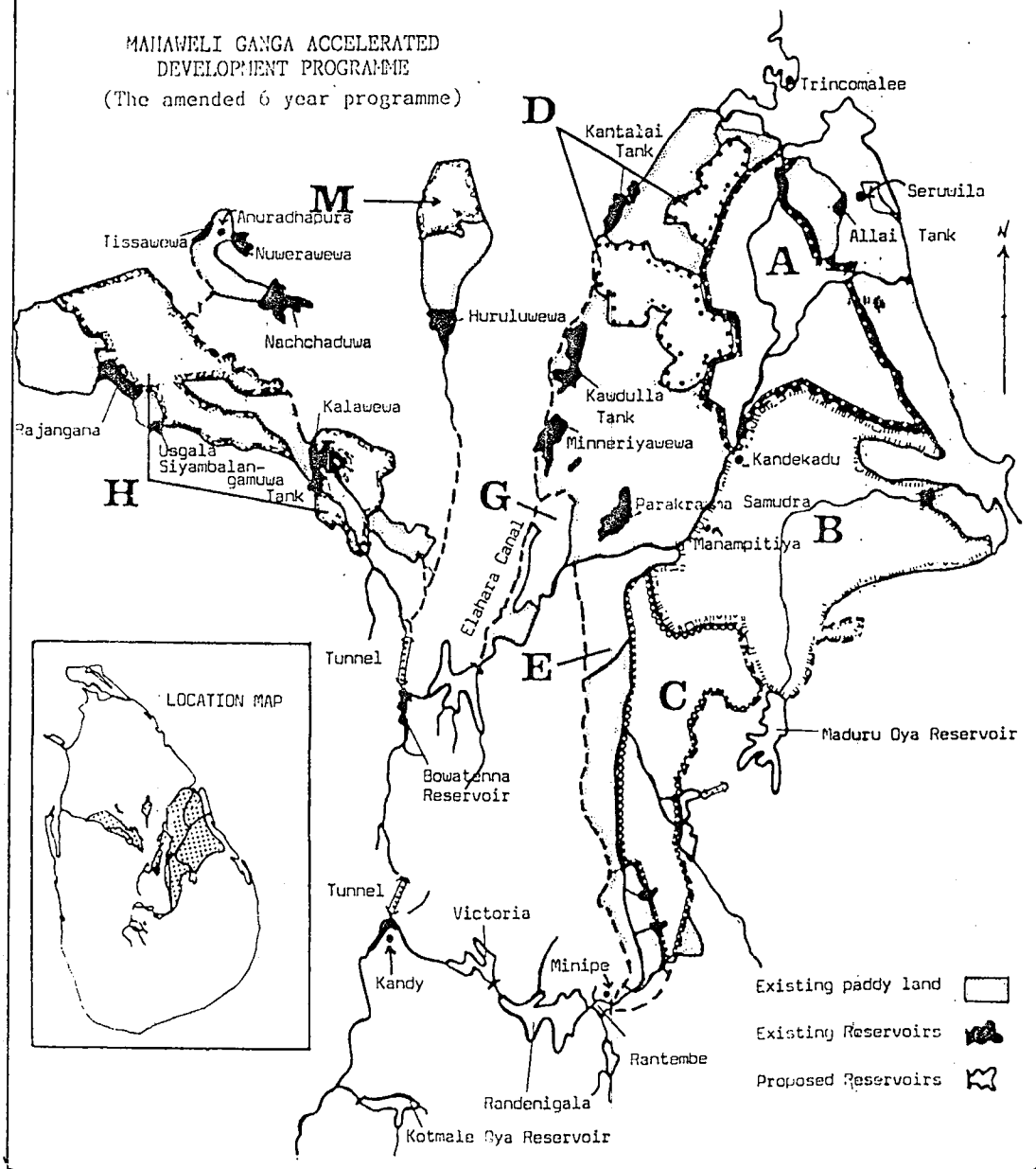
The government decided to take up the construction of four reservoirs, which included the Randenigala reservoir, and three others recommended by the Netherlands Engineering Consultancy (NEDECO).

Irrigation and Drainage Systems

The Accelerated Programme was expected to supply water to an extensive region along the course of the river, mainly to the Mahaweli plain stretching from Mahiyangana to Trincomalee. This region is described in the Mahaweli Development Plan as Systems A,B,C and D (see Map 11). Initially Systems B and C were to receive water.

The huge irrigation engineering works, comprising five major dams and related works, were expected to supply Mahaweli water to 320,000 acres of new land and 90,000 acres of existing paddy land within this region. An approximate breakdown of the area of new land to be

MAHAWELE GANGA ACCELERATED
DEVELOPMENT PROGRAMME
(The amended 6 year programme)



irrigated under the Accelerated Mahaweli Programme was as follows:

System A -	36,000 ha. (89,000 acres)
System B -	48,000 ha. (118,000 acres)
System C -	24,000 ha. (59,000 acres)
System D -	19,000 ha. (47,000 acres)
System E -	2,800 ha. (7,000 acres)
Total	126,000 ha. (312,000 acres)
(Projects and Programme, 1985, M.E.A.)	

Additionally, the ongoing work of System H was also to be brought under the Accelerated Programme. In itself, the Accelerated Programme was a project of immense magnitude when considered in the light of the demands it would make on the country's resources, but there was also now the added factors of the tight time target set for implementation and the necessity of undertaking many other action programmes before work could actually commence on these projects.

The decision to accelerate the Mahaweli Programme required speedy action to establish the feasibility of the key projects recommended in general terms in the Master Plan: they had to be studied and appraised in detail before being accepted for implementation and for foreign funding. To this end, the services of a number of foreign agencies were obtained (see Appendix 111). Several studies, carried out with advice from the Central Engineering Consultancy Bureau, were financed by various donor countries. Based on these feasibility studies, a development programme and implementation strategies were prepared.

The government's views on the importance of this project are summed up in the following statement by the Minister

of Finance in an address to prospective foreign investors visiting Sri Lanka in September 1980:

"The Mahaweli will not only provide much needed cheap power and save on expensive oil imports, but will also provide insurance to the farmer against unpredictable rains, in achieving higher agricultural output. We cannot develop agriculturally unless we get effective control over water. Contrary to popular belief, it is not a long-term project in a conventional sense. It is a conglomeration of short-term projects of dams, reservoirs, water channels, and farmer settlement - each of which can produce results within 3 to 4 years and result in increasing availability of land, food, employment and power. Moreover, it is such an imaginative project that it is capable of generating popular appreciation of the need to maintain current welfare, thereby inducing a transfer of resources from consumption to investment. It is the vision of the future that we wish to build. Thus, our whole economic strategy could flounder, without Mahaweli "(Economic Review, 1985:5).

Downstream Irrigation Development

Water from the Maduru Oya reservoir would irrigate areas in System B through its Left and Right Bank. Work on the Left Bank main canal commenced after work was completed on the main dams and reservoirs. All the canals on the Left Bank were to be concrete lined. The total cost of these canals was estimated at nearly US\$ 100 million.

The headworks programme was able to keep within the schedule after initial problems were cleared and

adjustments made and this has helped considerably in the power supply programme of the overall project. But the irrigation aspect fell behind expectations. It was always accepted that downstream projects, particularly irrigation, agriculture and settlement, were as important as the headworks, since the increase of food production and the saving of foreign exchange expenditure and employment generation could not be achieved without the full development of the downstream projects. Yet the late start and delays in construction at different stages of the project have resulted in accumulated delays in the downstream works.

Since 1977, only 6.02 percent of land under the targeted areas have been fully developed with irrigation water and only about 13 per cent of the targeted 140,000 families have been settled. On the other hand, Systems C and B are the major areas of settlement development under the Accelerated Mahaweli Programme. However, only 23.58 percent and 3.54 percent of land respectively, were fully developed with irrigation water in those two systems. System C comprises about 66,000 ha. and here only Zones 1,2 and 3 have been developed.

A General Understanding of Socio-Economic Problems in Mahaweli Irrigation Settlements

The Accelerated Mahaweli Programme, begun in 1978, was due for completion within a period of six years; yet several factors, such as faulty rock formations, engineering difficulties, management problems, funding and administrative delays, and the fact that a project of this magnitude had never been attempted in Sri Lanka before, held up work. Plans therefore had to be altered

and the original six-year deadline was ultimately stretched to cover a possible further five years; thus the goals of the AMP (Accelerated Mahaweli Programme) could not be achieved.

In the process of irrigation construction and settlement numerous problems and weaknesses were identified. Most of these problems were related to cultural disruption, social alienation and commoditization of the agricultural production of small-scale family farms. An executive of the Mahaweli Authority explained the contradiction between the technocratic approach and planned settlement development of the Mahaweli Settlement as follows:

"At the planning stage necessary consideration was given to issues connected with the irrigation system and subsequent social development. But at the level of implementation those plans fell by the wayside and could not be fully translated into reality due to the gap between technical possibility and social consideration. Hence problems with regards to the downstream development often lead to social issues at the settlement stage. The dichotomy of construction and operation/maintenance was limited to the immediate establishment of an infrastructure. Therefore we find a very uncomfortable polarization between the construction group and operation and the maintenance group working under pressure from farmers" (Bandaragoda, 1986:22).

A multi-purpose project such as the Mahaweli Scheme is difficult to assess satisfactorily. Its main objective of constructing the four main reservoirs and generating hydro-electric power has been completed on time. Therefore, as a hydro-electrical, power-generating project, the Mahaweli could be considered a success. But

with regard to the settlements, it is essential to evaluate the actual performance during the crucial phase of implementation in order to assess the positive, negative and even unintended consequences of settlement development.

Various attempts have been made to identify the problems of Mahaweli settlements. Most of these exercises are either ad-hoc types of studies or limited only to specific aspects of the settlement process (see Appendix IV). A basic difficulty, of course, with studies of this kind is to find points of comparison, since their methodological approaches and objectives are likely to be different. Moreover, critical observations are often kept at a distance from project officials. One of the most common observations, however, concerns the emergence of patterns of social differentiation and inequality among various settler groups. This tendency is highlighted in order to demonstrate the failure in establishing an unified and self-sustaining family farming system, one of the main objectives of the Mahaweli Settlement strategy.

According to Runhild Lund, a foreign researcher, (1983:12-18):

" Family farm settlers have responded differently to change depending on the physical, economic and social pre-conditions in the area. Only a few settlers correspond to the hoped for ideal settlers, namely ambitious local farmers who achieve good production results. The successful settler is one who knows how to make use of the resources provided and who has received workable land and a proper water supply. Knowledge about Dry Zone cultivation is also an important asset. Economically, these farmers may choose between one or

more promising production and marketing options depending on family skills, education level, number of household members and contacts with politicians and bureaucrats. Socially, the settler is also largely dependent on the outside world. Equally important, however, is the background of the settler: does he have close ties to the traditional local society of the area? Caste, class and religious groups are important cultural dimensions, which may structure social networks, labour co-operation and labour obligations."

According to her estimate, only 10% of the settlers worked mainly for wages. Other farmers had various supplementary sources of income for their families (Lund 1983:12-18). The wage work of some settlers, is not a sufficient indicator for considering them fully-fledged proletarians since they are are playing the role of owners who rent or lease out their lands to tenant cultivators for a limited period. The state, on the other hand, protects the sales of owner cultivators' land by legal means. Thus social differentiation is not a process which develops independently of the support or actions of the state.

Thomas Krimmel (1982), who carried out an in-depth study on social disparities of settlers in System 'H', has attempted to analyze emerging social differentiation. He maintains that contrary to what is documented in the settlement planning strategy, inequalities within the Mahaweli Settlement tend to emerge as a consequence of the current design of such schemes. Uneven resource endowment of the settlers and differentiation continue inspite of the formal commitment to equalization. Empirical evidence produced in Thomas Krimmel's study strongly suggests that the supposed equality and

egalitarianism of settlers in the Mahaweli Settlement is of a "transitory nature" (Krimmel, 1982:25-56).

Dr. Walter Abeygunasekera, former General Manager, Mahaweli Development Board and Agricultural Consultant, Mahaweli Authority of Sri Lanka, gave his views on the equitable distribution of project benefits through settlement on 2.5 acres of farms as follows:

"Significant assumptions of the development model, envisioned the equitable distribution of project resources and benefits through uniform settlement on 2.5 acre farms. The soil drainage and fertility characteristics of System 'H' are highly variable within each farm, irrigation turnout or block. The upland or well drained soils are poor in organic matter, soil, fertility, and are highly permeable in contrast to poorly drained soils in the valley bottom which require adequate drainage to prevent impediments such as salinization and accumulation of toxic chemicals. There is also considerable variability in the distribution of upland, well drained soils in the different irrigation blocks, the largest extent being in the Kalawewa Service area, more specifically in H4 and H5. Thus the variability in the soil and drainage region influences productivity per unit of land. Similarly, inequitable distribution of irrigation to each farm, turnout or block has an influence on production. There is ample evidence [for this] in Sri Lanka in major irrigation schemes where agricultural production, economic well-being, incomes etc, are very uneven between head- and tail-ends of a channel providing irrigation water. For instance, the farmers at the head of a main branch distributory or even field canal are generally more assured of reliable and adequate irrigation supply than those at the tailend,

thus, the high variability of the most important resources, land and water, challenges the planning assumption of equitable distribution of project benefits and income by settlement on 2.5 acre farms" (Abegunewardena, 1985: 8-10).

Most of the planners and project officials, however, tend to believe that the above types of economic and social differentiation are not significant so long as the settlers are able to manage without social conflict or food shortages. But an important question is how the social and economic consequences of such differentiation processes are measured and explained?

Kapila Wimaladharma, a former Additional General Manager (Settlement and Operation) presented a strong image of future Mahaweli society:

"With the progress of time, Mahaweli settlements are expected to advance from traditional to modern society, from subsistence to commercial farming, from bureaucratic to participatory management. The Mahaweli Settlement policy aims at an elimination of economic disparities through an egalitarian land tenure and an uniform ownership pattern. Mahaweli Settlers are aided by the state to become affluent farmers relative to their fellowmen elsewhere in the Island" (Wimaladharma, 1979:38-49).

But, in 1985, a joint study conducted by him and Prof. T. Scudder revealed that many of the assumptions concerning the success of small-scale family farms were incorrect. The economic viability of a small farm does not depend so much on its size but rather on the improvement of its adaptability, capability, training, extension, community

development and the delivery of other inputs. However, in observing the new settlements and the economic changes taking place, they made the following remarks:

"The major conclusion of our present assessment, is that net incomes of the large majority of settler households, in even the oldest Mahaweli Settlement areas, have not yet moved beyond the subsistence level. Indeed, in a significant number of cases in both System "H" and Zone II of System "C", living standards actually appear to have dropped, at the very time in the settlement process that they should be going up, if the settlement component is to catalyze development ..."

Less than 20 percent of the settlers in the project have been able to complete the construction of their permanent dwellings. Many farmers defaulted on low interest government loans primarily due to crop failures in successive drought years, making them ineligible for future loans" (Scudder and Wimaladharma, 1985:12-20).

The above types of problems in the Mahaweli Settlements are due not only to social and economic inequality among settlers but also to the organizational problems of irrigation water management. Top-enders generally receive adequate water during the entire period of water distribution, whereas tail-enders receive small, unreliable and untimely deliveries. Moreover, irrigation water often becomes a point of conflict between the management staff and settlers, as well as between the top-enders and lower reaches.

Theoretical Problems of Understanding Development
Tendencies and Social Change in Mahaweli Settlements

As Long suggests, research should be addressed to understanding the complex relationship between types of intervention and types of outcome. Yet we still find it immensely difficult to formulate sound generalizations about this relationship (Long, 1989:2).

Disparities between households and groups of settlers have been observed from the very early stages of the Mahaweli Settlement. Even after more than seven years of family farming, income disparities among settler households still remain a consistent feature. If such social differentiation followed a capitalist logic of transformation, then Mahaweli farmers would have developed a contradictory relation to capital and wage labour. One might expect (following a Leninist argument) to find one group of farmers who had lost their means of production, and as a consequence, now worked increasingly for wages, whilst a second group would consist of a few wealthy families who controlled more of the project's resources (such as land and water) and provided wage labour opportunities. But up to now it is clear that Mahaweli settlers have survived as farmers without any significant change in their livelihood strategies. Therefore precisely what this social differentiation means, is a complex issue yet to be explained.

Although social differentiation has been identified as a dominant tendency, hardly any study provides sufficient evidence of the development of a significant contradiction between capital and wage labour. So how do farmers actually manage to solve their livelihood problems under these changing circumstances? According

to settlement policy, the owner cultivators cannot rent or lease out their lands. Therefore how does social differentiation develop as an illegal or underground process of consolidating operational holdings? Also, with more and more political commitment to the poor majority of in the country, can the state allow this pattern of development, which runs counter to the policies of the Mahaweli Settlement Programme?

Where I Failed

I have pursued many schools of thought in the search for an appropriate conceptual framework with which to deal with the above types of questions. I went from the modernization approach to the dependency approach, from the mode of production debate to the commoditization debate, from the logic of capital approach to the institutional incorporation model, and so on. Finally, I was left with a confusion of views about the operation of macro-structures in the process of social transformation and little understanding about what actually took place in practice at the local level.

Most accounts of peasant societies have focused on changes in the forces of production based on the kind of theoretical approaches noted above. When I started my research in the Mahaweli Irrigation Scheme in 1984, I also adopted a broad theoretical framework in which I considered social differentiation to be the most important factor to be studied in this uniform family farming settlement. My first research monograph published in 1981, was an outcome of this research orientation. Nevertheless, though there was sufficient empirical evidence to prove income disparities, the

process of change did not appear to follow the basic laws of capitalist transformation as theoretically assumed. Moreover, my explanation of changes in the production process was weak, due to the application of too abstract a theoretical model for the analysis of my empirical data. I was led, therefore, to re-examine the development problems in the settlement scheme in order to find out where I had failed analytically.

During the second stage of my field research (1985-1986) I realized that I had concentrated more on socio-economic indicators than on the complex forms of interlinkage and interaction among farmers, and between the management bureaucracy and settler families. Also, my single-minded concentration upon highly visible state intervention had, I concluded, severely distorted my understanding of the social changes taking place. This was particularly critical for analyzing state-sponsored irrigation schemes, such as the Mahaweli Project, where extensive development interventions are the norm.

The Nature of Planned Intervention

A dominant strategy of state intervention has, it seems, emerged in many Third World contexts which entails the establishment of a new institutional structure aimed at organizing and closely supervising a system of small-scale production units based on a new type of family farming. This has frequently required the setting up of programmes of settlement development with a large number of bureaucratic agencies and massive injection of foreign aid and technical assistance, leading to the increasing encapsulation of the family farmer and to the erosion of his independent decision-making in the field

of agricultural production. The form that this process of encapsulation takes varies somewhat from situation to situation, but frequently we find that the government sets up a special settlement authority to coordinate the system of services (e.g. credit, seed, fertilizers, and marketing) and to control access to basic resources (e.g. land and water).

A major consequence of this development strategy is that the state assumes greater direct control over both the type and level of production and over the livelihood and socio-economic decisions of the settler households. Administrative staff in the settlement have to be strengthened, so that any settler who goes against outside interests can be detected and reprimanded. In this way also, it is hoped that political mobilization amongst the poorer group of settlers will be limited. A central feature of this new encapsulation strategy is that it is important, because of the very high capital investment and overhead costs incurred, for the state to achieve a satisfactory economic return. Thus, even if, as is often the case, the goals of the programme are described in terms of the ideals of equity and participation, the primary motivation must remain that of securing a sufficiently high level of production for the market to offset the high infrastructural and administrative costs, and to meet conditions imposed by external lending agencies such as the World Bank. In order to attain this, it is necessary to develop various organizational means to stimulate the commoditization of production. This process entails the increasing dependence of the farmer and his family upon external agencies, including both government servicing institutions that handle such questions as agricultural extension, water management and various technical inputs,

as well as private interests involved in trading and moneylending.

Orthodox Intervention Models and Their Limitations

During the last decade, policy makers and implementing agencies have given attention to the formulation of 'rational' policy models for developing the Mahaweli irrigation settlement. Consequently, many development problems have been identified and explained in terms of the weaknesses of project implementation and not as a failure of the development model itself. In addition, to make policies more effective, the problems of the settlement programme have been monitored and evaluations carried out. Yet the programme still produces "failures" and the actual socio-economic problems remain complicated and unclear. The lack of understanding or sheer misunderstanding of the social reality of the Mahaweli and similar schemes is due, it seems, to the limitations of the theoretical approaches upon which development models have been based. For example, attention is often given to elucidating the broader constraints to development intervention, to the analysis of policy implementation aimed at promoting planned development, rather than to the carrying out of systematic research on intervention practices in relation to the livelihood strategies (which often fall outside the formal parameters of the development project) decided by the farmers themselves. Also, since the interrelations between theoretical notions and policy models have been under-researched or not studied, these development models, I believe, do not provide the theoretical instruments for understanding the consequences of massive development intervention, such as the Mahaweli Scheme.

A major difficulty of understanding development problems therefore relates to misleading or distorted conceptualizations of the relationship between farmers and external institutions. Distorting the social reality in this way not only isolates theories from people's reality but also creates a dichotomy of planned intervention discourse and the analysis of intervention practices. Moreover mechanistic approaches to the problems of irrigation settlement have failed to address how humans influence the process. As Ubels puts it:

'Within a wide body of topics a variety of approaches have been applied. Not wishing to neglect the many differences between them, after more than 15 years of research and discussions on irrigation water management, one conclusion has become very clear: the problems relate, not so much to the handling of water itself, but to the way in which people act and interact in response to the issues posed by the particular irrigation system.' (Ubels, 1989:185).

Development models of planned intervention give the impression that local processes are 'minor' or 'insignificant' tendencies of pre-determined transformation processes, generated by external structures. Hence, the complexities of development problems and local structures are often conceptualized simplistically as social and cultural constraints to planned development, which with the right measures can be overcome. Linked to this line of argument is the assumption that rural producers are 'backward', 'poor' and 'incapable'. Therefore planned intervention is a necessary and effective instrument for breaking barriers to rural poverty. Thus development programmes consist of

the necessary expertise, organizational structure and better controls for directing the poor towards project goals. The broader tendencies of development, therefore, are not considered important; and there is a stress on the active role of intervening parties and the passive role of beneficiaries in the process. Under such theoretical notions, intervening parties, such as development officers, are accorded a dominant position in respect to the relationship of external organizations and farmers. The role of development institutions is to formulate strategies and implement them on a package basis in order to achieve policy goals. This tendency to isolate policy and implementation from the consequences of development practice is one of the main weaknesses in the theorization of development models, since each set of operations is considered to be directed or controlled by outside forces. The actual actors involved in the process, their role and influence on externalization or vertical integration are more or less left out.

As Long and Van der Ploeg argue: "this type of dominant theoretical paradigm of planned intervention espoused a rather mechanical model of the relationship between "policy", "implementation" and "outcomes". A tendency in many studies was to conceptualize the process as essentially lineal in nature, implying some kind of step-by-step progression whereby policy was formulated, implemented and the results followed, after which one could make an ex-post evaluation to establish how far the original objectives had been achieved. Yet, as any experienced planner or development worker will readily appreciate, this separation of 'policy' 'implementation' and 'outcomes' is a gross over-simplification of a much more complicated set of processes which involves the reinterpretation or transformation of policy during the

implementation process, such that there is no straight line from policy to outcome. Also outcomes often result from factors which may not be directly linked to the implementation of a particular development programme" (Long and Van der Ploeg, 1989:2).

Serious doubt arises concerning the capacity of development organizations to achieve desired results. Their role is increasingly regarded as ambiguous, uncertain and problematic; and development organizations themselves are beginning to raise the question of effectiveness (Van Ufford, 1987:9). Yet, most of the discussions and debates are centered around the subject of 'corrective measures' with a view to promoting further planned intervention to overcome such failures. For example, the organizational problems and failures of planned intervention in the Mahaweli settlement are well known. However, this crisis situation contributes to an expansion of branches and sub-branches of the development programme, which at local level often involve a de-socialization of the social life of people. As one farmer puts it, "not only the agricultural production of the family farmer, but also his toilet, children and pregnant wife, and daily food and drink have become part of the project". And also farmers' own perceptions and problems are gradually transformed into a project language, using the more complicated development terminologies that belong to the international vernacular of development professionals. Essentially then, intervention aims to bring the dynamic of local initiative into line with the interests and perspectives of public authorities, and to reproduce the image of the state as being the key to development. This intention to increase outside control may, of course, affect the effectiveness of and meaning accorded local development activities (Long and Van der

Ploeg, 1989:13). Development projects create a 'cycle' of development (from initial projects to failures, from failures to corrective measures and from corrective measures to projects) with the assumption that effective organizational structures are essential for development.

These assumptions of orthodox intervention models are also based upon a narrow conceptualization of the role of state. Marxist theory views the state as an alliance of political control that reflects forms of coercive domination (see, e.g. de Janvry, 1981; Poulantzas, 1973; and critical review by Shanin, 1982). Many writers within this school of thought have tended to treat the notion of the state in a rather abstract and reified manner, sometimes suggesting the image of a unitary structure geared to the needs of capitalist expansion (Long, 1988:113). On the other hand, functionalist approaches see state structure as consisting of an enduring executive and administrative apparatus that makes authoritative decisions and exercises control over a given territory and people. In a critical analysis of the state, Skocpol stresses the autonomy of the state and the internal contradiction that exists between dominant and subordinate classes. According to her, the state's own fundamental interest in maintaining physical order and political peace may lead it - especially in period of crisis - to make concessions to the demands of subordinate classes. These concessions may be at the expense of the interests of the dominant class (Skocpol, 1979:24-29). This point has the general methodological value of bringing into focus the significance of the state's internal organizational and social contradictions when understanding processes of state policy-making and intervention (Arce, 1986:3-15). Such contradictions are

reflected in the organizational crisis of planned intervention in the Mahaweli Settlement Scheme.

Theorizations of the state, then, have often not given sufficient attention to the autonomous role played by government institutions. Neither do they take into account problems of state structure involving inter-agency conflicts, misuse of power by local agents, and the state's incapacity to deal with counter-tendencies (i.e. the issue of governability). Thus organizational crisis in the Mahaweli Settlement Scheme is mainly an unintended consequence of the operation of the state structure in the local setting.

The supposed power and effectiveness of a centralized organizational structure is based on various assumptions derived from subjectively simplified theoretical explanations concerning the complexity of development problems and local processes. For example, planned intervention is often conceived of as a 'package deal' which involves a discrete set of activities that take place within a defined programme of implementation (delivering inputs and services to already-identified beneficiaries). State institutions and officials therefore are supposed to institutionalize power by way of rules and procedures of the system of resource distribution. Hence intervention models, based upon package delivery systems and a technocratic approach to development, frequently become strategic weapons for attempting to assert control over farming households. This type of development intervention also seeks to influence rural producers to go beyond what are seen as their limited capabilities, and to acquire new organizational skills and technical know-how. In so doing, attempts are made to convince farmers that,

without access to outside institutions and resources, they cannot solve their own problems or improve their living conditions. In the Mahaweli settlement, development intervention generally implies the re-structuring of existing social arrangements to confront to externally-managed institutional structures, and the introduction of new elements, technical concepts and new meanings to farming practices and to farmers' own "livelihood projects". Validation of this normative and technical elements is "sustained by a process of labelling which functions to promote or impose certain interpretative schema concerned with the diagnosis and solution of so-called "development problems" (Long and Van der Ploeg, 1987:7).

An Actor-oriented and Interface Perspective on Rural Development: An Alternative Approach

Due to the above types of theoretical problems, misconceptions of the reality of intervention practices, and inadequate analytical tools for the analysis of development problems and change, a more flexible approach becomes indispensable. After several years of field research in the Mahaweli settlements, I came to realize the importance and practical usefulness of an actor-oriented and 'interface' approach for analyzing problems in Mahaweli settlements. Based upon the writings of several authors who have contributed to the interface perspective of rural development (see Long, 1977, 1984, 1988:127-129, 1989; Arce, 1986, 1987, 1989; Giddens 1981, 1984) and on my own field experience, I have developed a methodology for analyzing the three-fold linkages and relationships between farmers, officials and traders. Social interface, (3) as Long argues, is not

only a methodological device for studying the confrontation between different lifeworlds, but is also a means of understanding the social meanings of transformations that are not set out in original project goals (Long, 1989:2-6).

An interface approach emphasizes the importance of:

- a) analyzing the dynamic and emergent character of interactions taking place between intervening parties and other actors such as traders and family farmers;
- b) explaining how the goals, perceptions, interests and relationships of various parties are reshaped as a result of their interactions; and
- c) exploring how these interactions are affected by and, in turn, themselves influence the situation itself.

An interface approach, therefore, provides methodological tools for the study of linkage structures. For example, it aims to explore how different types of households and groups of farmers develop strategies for dealing with the new circumstances they face due to the introduction of new development inputs. Looking at interface situations is also useful for understanding relationships between implementing agencies and local groups and actors. These relationships refer to the ways in which different actors interpret and confront new situations in an attempt to create space for organizing their own livelihood strategies.

Although interface focuses more attention methodologically on the understanding of social phenomena through the study of everyday situations and interactional processes, it can also offer a way of analyzing, in vivo, capital-state-peasant relationships in particular regions and localities, and thus indirectly

facilitates a fuller understanding of the character and significance of specific state formations.

The notion of "human agency" - an important component of actor-oriented approaches - draws attention to unexplored issues concerning knowledgeability and power. In the implementation of the Mahaweli development programme the top-down flow of power was assumed to be the only strong and significant element of development, whereas the notion of human agency stresses the fact that all actors exercise some kind of power, even those in highly subordinated positions. As Giddens argues, all forms of dependency offer some resources whereby those who are subordinated can influence the activities of their superiors (Giddens, 1984:16).

The present study, then, adopts an actor perspective for analyzing the ways in which external institutions and farming households confront each other in an effort to realize their different individual and collective goals. I focus upon the analysis of: a) the strategies used by various actors in the settlement, namely, bureaucrats, traders and family farm settlers; b) the interplay of external and local-level processes; and c) the ways in which family farmers influence the development of social relations and interactions between them and other groups of actors, such as traders and local officials, at the intermediate level.

The Methodology and Focus of the Research

As the foregoing account shows, the Mahaweli Settlement Scheme has entailed massive state intervention involving planning and design activities, water and settlement

management, inputs and service deliveries, and the organization of production and marketing systems. All these activities are planned, developed into models, and divided into systems of operation and time schedules of tasks. One important aspect of the research was to study the role, behavior, and interests of people who actually practiced, or were affected by, these planned interventions and not simply to focus upon the formal models or systems of the Settlement Scheme. The study included not only local-level officials but also traders and contractors who also obtained benefits from irrigation development. The achievement of the goals of the scheme also depended substantially on the large number of family farmers, who exhibited their own strategies, behavior and responses. A second component of the research then focused on farmer strategies. The concept of 'farmer strategies' was used to cover not only face-to-face confrontations and negotiations with officials and merchants but also other less visible forms of farmers' struggles, such as 'passive' resistance, indirect sabotage, non-participation etc., that were used by various groups in an attempt to realize their own goals. It was assumed that an analysis of the patterns of relationships and interactions between bureaucrats, farmers and merchants, and the interplay of external and internal elements and conflicting social interests in the local arena, were crucially important for understanding the outcomes of planned intervention. Thus interface problems within the Mahaweli settlement became a central issue to be addressed.

Problems of Field Research in the Mahaweli Scheme and the Methods Used

According to a recent Mahaweli bibliography, there are more than 500 studies and publications on various aspects of the Mahaweli Project. Many of them are feasibility reports, technical assessments and other ad-hoc types of studies on specific subjects (see Appendix 1V). Most view the Mahaweli Development Programme from a macroscopic angle (Wanasundera, 1986), and there is hardly any sociological analysis of the actual operation of the management system and settler administration, particularly at the settlement unit level of management. A main criticism of existing Mahaweli research is that settlers have been extensively investigated but not adequately researched (Wimaladharma, 1986:25). This is in part due to the various limitations placed upon independent researchers wishing to carry out research in the Mahaweli settlements. Moreover, the executive officials of the Settlement Authority prefer larger sample surveys that cover many settlement units and they often request 'terms of reference' in order to limit research only to what they specify and agree upon. Officials do not seem to feel the need for research knowledge, while researchers find it difficult to rely confidently upon official information, since it has often proved to be misleading.

Krimmel (1982:12-18) stress that, "Information obtained from official sources has to be interpreted very carefully for various reasons. Such information is subject to political censorship and always tends to hide problems. Statistical data are highly susceptible to data manipulation by the local bureaucracy because the motivation for gathering correct data is generally low.

Project employees obviously regard the project from a rather subjective viewpoint because of their being personally involved in working there". It is also important to consider the changing attitudes of the settlers towards official surveys and investigations. It is now difficult to use questionnaire or direct interviewing methods for collecting information since settlers have grown accustomed to offering "conditioned" responses. They often give answers to suit the investigators in the hope that they might get some assistance in return. Most of the settlers are aware of the fact that the Mahaweli Project is being implemented with the aid of the World Bank and other foreign agencies and governments. They are often visited by World Bank and other foreign personnel, towards whom they adopt a mendicant attitude. The result is that settlers conceal the real situation as part of their own survival strategies. Their responses are generally governed by immediate needs and when, for instance, asked a question regarding the operation of the water supply they normally answer with the hope that they can obtain a better supply themselves. Interviewers, therefore, generally gain insight only into an artificial situation created by the settlers and in this way they are diverted from the real issues.

Since many settlers fail to follow official instructions on cultivation (e.g. defaulting loans, sharecropping, illegal water tapping etc) there is a fear that if they tell the truth, then they will be penalized. For this reason they are evasive when investigations are held. The settlers have become skilled respondents. They already know the most "suitable" answers to the questions asked by investigators.

In order to avoid these types of problems, it was necessary to devote a considerable time to developing good relationships with settlers. This involved living with them, participating in cultivation meetings, marketing and water management situations, their day-to-day economic and social activities, listening to their group and family discussions about issues which they decided to raise, and helping them to get their own tasks done. I tried to identify myself with the interests of farmers and to be committed to people and not to the project. This was necessary in order to enter their lifeworlds so as to monitor and document everyday events, actions, reflections and reactions of farming households. My field research included a community study and case studies in order to provide a deeper understanding of the complex sets of social relationships involved.

It was equally important to study how the management and administration of settlers worked out at grassroots level because settlers' attitudes and behavior were in part a reflection of the actions or coercion of the settlement bureaucracy. Therefore participant observation methods were extended to cover the behavior of the local bureaucracy in the settlement as well. This entailed developing a close relationship with management officials, living with them, participating in evening parties, and in informal discussions. The methodology adopted enabled me to gather much useful quantitative as well as qualitative data.

The field study extended over a period of about two years and was divided into three intervals, namely, Maha (wet)season, 1984, Yala (dry)season, 1984/85; and Maha (wet)season, 1986. The selection of the settlement units

for the study was based on preliminary observations carried out prior to the field research commenced.

Three settlement units (consisting of about 250 settler families in each) from Zone 11 of System C were selected for field research. Zone 11 was considered as most suitable for the study because it is an area consisting of the earliest batch of settlers who had completed the 'transitional' period of settlement. They had cultivated for about ten cultivation seasons during the last five years. The selection of settlement units was based on several criteria: (see Map 111 for the location)

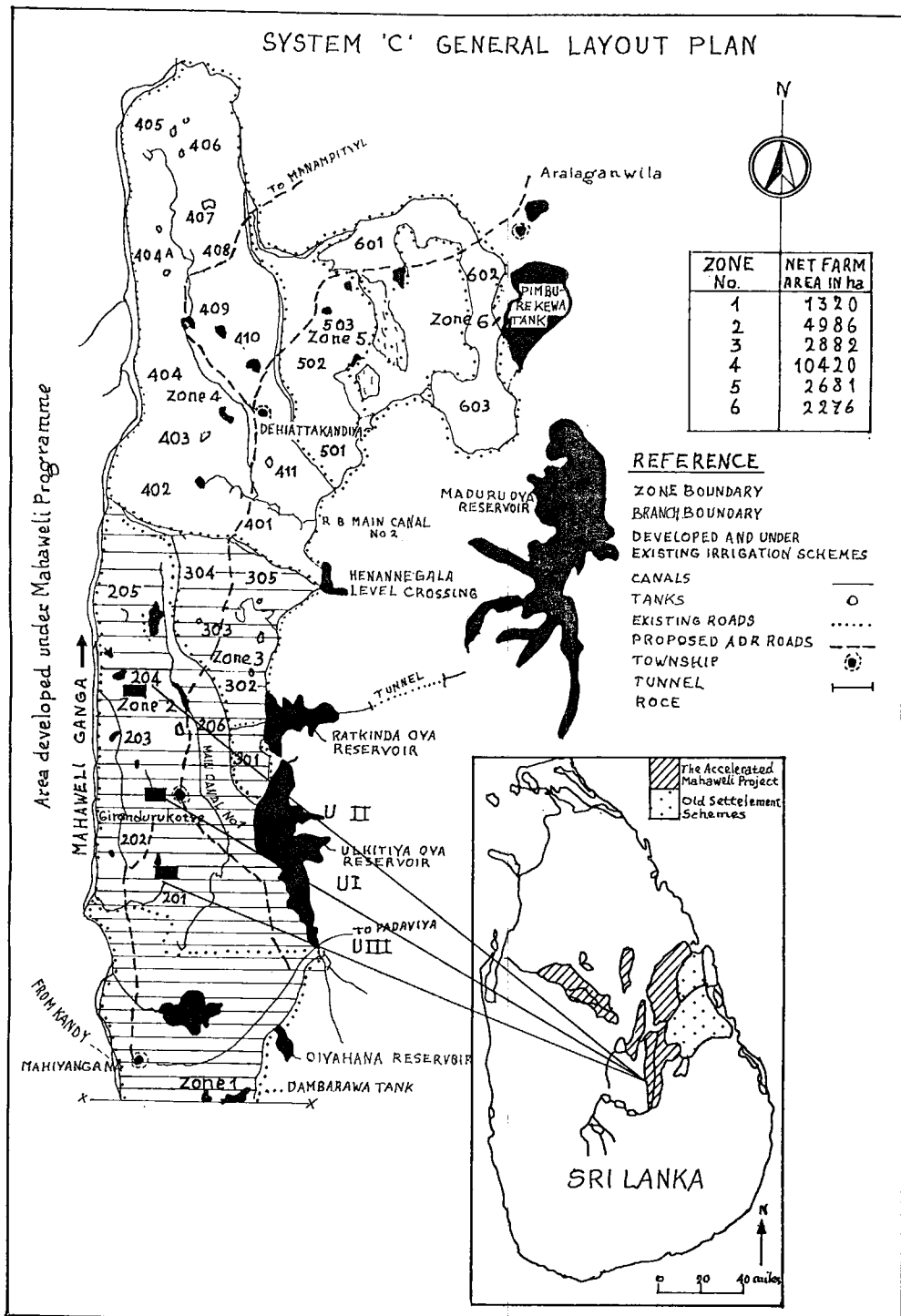
- a) I wished to have both "top enders" and "tail-enders" of the irrigation channel structure represented;
- b) I wanted to study three categories of settlers, namely evacuees, selected settlers, and those resettled from traditional villages; and
- c) I wished to cover both so-called "progressive" and "marginalized" groups of settlers.

During the final stage of the field study, randomly selected settler families were interviewed in order to collect quantitative information. The sample settlers in each unit consisted of about 20 percent of the total number of settlers.

Organization and Contents of the Thesis

This introductory chapter has provided a general overview of the problems of irrigation development and a broad description of the size, scale and main features of

LOCATION OF THE SELECTED SETTLEMENT UNITS IN
ZONE 11 OF THE SYSTEM 'C'



the Mahaweli Irrigation Scheme of Sri Lanka. After explaining the magnitude of state intervention entailed, I then explained the ways in which researchers have attempted to understand the socio-economic problems of Mahaweli settlements. Orthodox intervention models and planned intervention in the Mahaweli Settlement Scheme were also examined in this chapter. In the last section, my reasons for selecting an actor-oriented and interface approach for analyzing intervention practices and processes of change were explained.

Chapter two provides an historical account of state intervention in irrigation settlement in Sri Lanka. Sinhalese civilization was heavily dependent upon irrigation communities. But after colonial reforms the pattern of state intervention began to change. The intentions of various governments concerning irrigation settlement since the 1930s up to the Mahaweli Scheme are analyzed in this chapter.

Chapter three analyses the diversity and complex problems of selected settlement units. The main focus is on the practical difficulties of implementing a uniform family farming system due to emerging differences over location, water distribution, and the socio-economic characteristics of these settlement units. The emergence of key social groups and their relations with intervening parties, under different local situations, are analyzed. Although each settlement unit operates within the framework of the main development project, local differences in settlement units generate "local projects" based upon the negotiations and struggles that take place between intervening parties and farmers. This chapter explains the different situations under which

contrasting responses, interactions and strategies develop.

Chapter four provides a more detailed analysis of the organizational problems faced by local officials as a result of farmers' reactions, resistance and strategies. The main focus is on the role of Unit Managers (local officials) and their management problems and strategies for internalizing planned intervention at settlement unit level. Although they are provided with statutory powers and other organizational means for controlling farmers at local level, they find themselves coming into contradiction with farmers' interests. Consequently their powers and authority are modified and negotiated in accordance with specific local circumstances.

Chapter five is devoted to an analysis of the various struggles, forms of resistance and opposing strategies of farming families and groups in the face of planned intervention. Here I discuss the ways in which individuals and groups of farmers process their knowledge according to their own experience and describe the strategic actions they take. The main concern of this comparative analysis of farmer behaviour and struggle is to show how the intervention practices of local officials are reshaped according to the strategic actions of local actors. The attempt to establish intensive control and supervision by a large number of officials was designed to limit farmers' freedom and decision making. But the chapter shows how farmers carefully analyze the weaknesses and defects in the formal organizational structure and the position of the intervening parties, thus formulating their own programmes and constructing their own projects, and blocking implementation of the main project. The analysis deals with the development of

local processes in each settlement unit within the context of everyday social encounters.

Chapter six is a detailed analysis of the role and behaviour of traders looked at from below. The material derives from detailed observations of trader-farmer relationships. Competition among traders, their strategies for survival under a situation of interdependency and the social relations of trading contribute to the emergence of an intermediate structure. It is argued that merchant capital cannot simply be wielded as a powerful strategic weapon for attacking farmers' lifeworlds and for traders to maximize profit. In fact, traders are forced to reformulate their business strategies in accordance with the responses and market behaviour of farmers. Theoretically the chapter raises issues concerning the role of traders, which has often been inadequately interpreted simply in terms of the strong market dependency of farmers. The chapter challenges therefore the common assumption that traders and moneylenders control the terms of exchange and bind farmers to the market. The thesis concludes with an overview chapter.

Notes

(1) The agricultural benefits of irrigation are clearly apparent and fall into the following categories: high yield per unit of land, high yield per unit of water, longer growing seasons, protection against drought, reliability of water supply, erosion control, improved agricultural management (seeds, timing, fertilizer, pesticide, machinery), obtention of foreign exchange through export crops, stabilization of the agricultural system, and modernization of the rural economy (World Bank, 1982:xi,8).

(2) Among the many disadvantages of irrigation projects are the following: low quality of life, polluted environment, low income, genetic erosion, loss of self-reliance, tightly controlled economic and political life, erosion of indigenous animal power and non-commoditized means of production, high-cost use of chemical fertilizer and machinery, erosion of the quality and sources of food, massive ecological destruction, and increased waterborne diseases (Goldsmith & Hildyard, 1985, 1986; Alexis, 1984; Onate, 1986).

(3) Long (1989:1-2) defines "social interface" as a critical point of intersection or linkage between different social systems, fields or levels of social order where structural discontinuities, based upon differences of normative values and social interest, are most likely to be found." See Arce and Long (1978) where interfaces are conceptualized as the points of intersection between different bodies of knowledge.

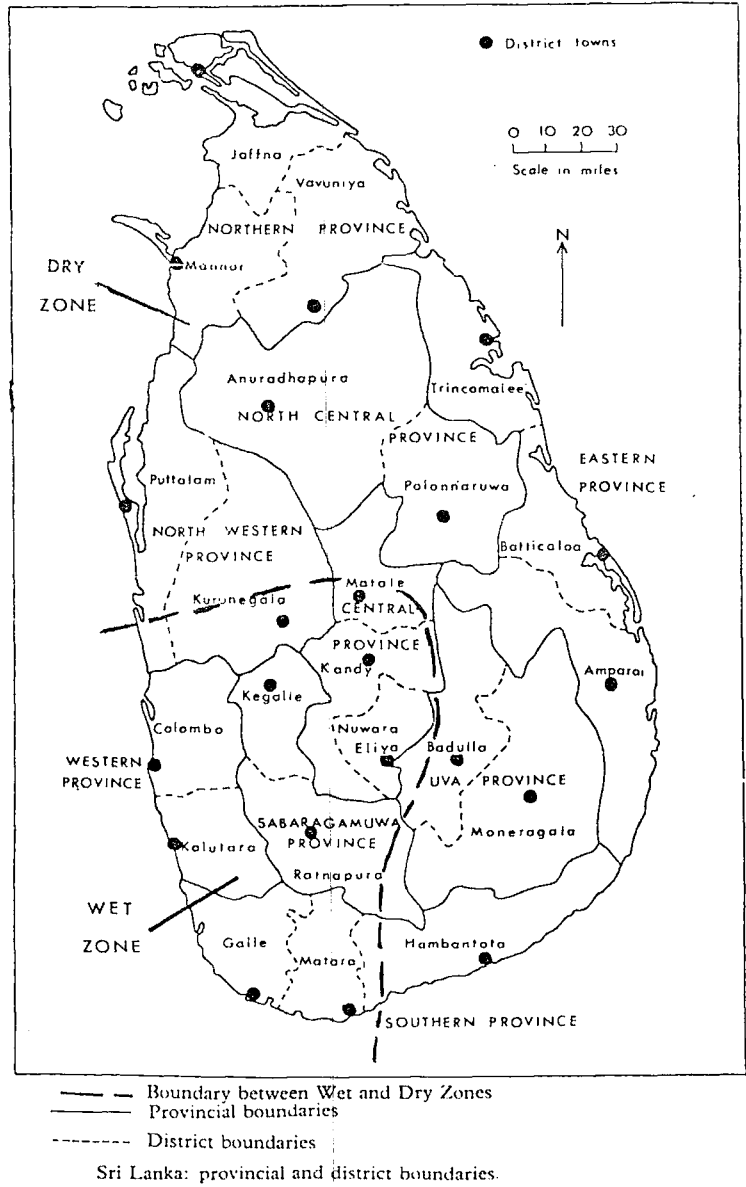
CHAPTER TWO

HISTORICAL BACKGROUND TO GOVERNMENT SPONSORED SETTLEMENT IN SRI LANKA

This chapter surveys the literature on the history of peasant re-settlement in Sri Lanka in order to document the impact of various socio-historical circumstances on the transformation of the peasantry. The intention here is not to provide a complete account of state-peasant relations but to trace out the background to government-sponsored irrigation settlement in the Dry Zone of Sri Lanka (see the Map IV for the demarcation of the Wet and Dry Zone).

Colonial administration in Sri Lanka, which came to an end in 1948, had a considerable effect on post-colonial state intervention in agriculture, particularly in the development of irrigation. Post-colonial development, building upon the colonial heritage, involved the establishment of centralized government institutions for exercising authority through 'rational' policy implementation. Planned intervention is a modern form of such purposive development which also involves institutionalizing power by way of organizing structures, rules and procedures. It is in this context that the understanding of the historical roots of state intervention is important.

MAP IV



Any study of agrarian change in Sri Lanka, or any other part of the Third World, has likewise to be located within its historical context. Also contemporary Third World peasantries cannot be understood as a closed system. One must analyze the character of outside forces and their influence on the changing configuration of social forces within the nation. Particularly in a country like Sri Lanka, the historical understanding of social reality is important, since state intervention in the peasant sector, through the introduction of planned legal and institutional frameworks, dates back to the colonial reforms of the 1840s. Subsequently, from the beginning of this century, vast areas of land were transferred to smallholders in the form of state-sponsored irrigation settlements. However, because of the adoption of somewhat contradictory state policies which led to the development of a dual economy encompassing both export plantation and domestic subsistence agriculture, state intervention in irrigation settlements evolved as a kind of trial-and-error process as much shaped by the differential reactions of rural producers as by the political and social conflicts inherent in development intervention itself.

Intention and Intervention of the Colonial Government

Until the first quarter of the 19th century, Sri Lankan peasants had sufficient land for all forms of cultivation and for the production of use-values¹. This type of traditional village peasantry had a degree of autonomy which was sustained by an amalgam of self-interest motivated social values and some allegiance to the authority of the elders (Hewavitharana, 1973). Then,

in 1815, after the conquest of the last Sinhalese kingdom, British colonial administration extended its influence to include the traditional irrigation villages of the Dry Zone of Sri Lanka. The Sinhalese peasants, who for many generations had managed to survive with their own organization of production and social life under village irrigation tanks, were subjected to, and to a degree maltreated by the imposition of colonial rule. However, during both the colonial and post-colonial periods, the way of life of peasants was shaped as much by interaction and struggles between communities' local state representatives, who attempted to manipulate local circumstances to their own political and private advantage, as it was by the more remote presence of central authority.

Dry Zone Village Communities

In order to understand the ways in which these differentiated reactions and the negotiated local social order emerged in response to colonial policies, especially those concerning land use, it is necessary to explain the pre-colonial social structure of traditional irrigation organization. Dry Zone village communities were based on a combination of irrigation and shifting cultivation (chena), a strategy well adapted to the unpredictable climate of the Zone. Just as families that comprised village society were knitted together by a common language and religion, common cultural traditions and agricultural and other pursuits, so also each family was united by a high sense of family obligations. The family income was used not only for the support of the household, but also to maintain social and cultural relationships between families. State aid, in the sense

in which it is now understood, was not available and, indeed, was unnecessary in a society in which every member of the family was entitled to maintenance from the joint family property (see Moore, 1985:244). This was a consequence of the strong in-group feeling characteristic of these village communities (see Appendix 1).

Such sentiments of solidarity resulted in part from the type of centuries-old irrigation system based on village tanks. Irrigation village tanks required a high degree of cooperation among cultivators, which extended well far beyond the sphere of cultivation. In fact inhabitants of Sinhalese Dry Zone villages were usually close relatives and regarded themselves as belonging to a particular sub-caste (*variga*). They were strongly opposed to the settlement of strangers in their village and were prepared to pay higher prices crown land sold offered, simply to keep outsiders away (Kloos, 1989:2). A typical village in the Dry Zone consists of a small tank (*veva*), paddy fields (*yaya*), a cluster of dwellings (*gamgoda*) and a surrounding area of land for shifting cultivation (*chena*). Some writers, using historical records, have described the functioning of the social organization of these villages as that of "independent village republics" (Hewavitharana, 1973:12). Villagers had their own ways on constructing and restoring village tanks³. They divided the land that could be irrigated from the tank according to the principle of the share of labour and inputs contributed to their construction. This sharing principle (*pangu system*) applied also to other activities, such as water distribution, production, and the clearing of canals as well as the right to catch fish in the dry seasons.

With the advent of British rule and the impact of a plantation economy based on the exploitation of cultivable land for commercial purposes, this old order and peasant economy were disrupted. Most of the forests, chenas and uncultivated land passed into the ownership of the Crown, and the traditional irrigation villages were neglected. Village councils, which under the leadership of the more active members, took all the decisions on behalf of the village community fell into disuse and in their place were appointed state officers, designated as chiefs and minor headmen who functioned under the control of Government Agents.

During the colonial administration the economic structure of Sri Lanka with its irrigation organization was modified to become an export/import based 'dual' economy, concentrating on export-oriented plantation agriculture. During British rule, plantation production was rapidly expanded to produce commodities such as tea, rubber and coconuts; and most of the public works during the British period were connected with up-country plantations. For example, highways were constructed between Colombo and up-country plantation areas for the transportation of these commodities. Thus, until the end of the 19th century, about 75% of government expenditure was directed towards the development of the Wet Zone, which comprises about 1.5 million hectares of land, and only about 25% was spent on the Dry Zone, which consists of about 6 million hectares of land, out of which nearly 5 million hectares were considered suitable for cultivation (Sessional Papers, 1840-1900). There were pressures on the colonial government to open up plantation areas with road and rail. The revenues for this derived to a large extent from export/import duties, sales of land, and from various taxes that were

levied on the peasantry. It appears that even the small amount of public investment on highways and irrigation in the Dry Zone area was undertaken with the specific objective of minimizing peasant unrest that might threaten the plantation economy (Manamperi, 1968:12).

However, colonial administrators themselves soon realized that they had paid little attention to the traditional system of irrigation organization that had been the basis of Sinhalese civilization. Indeed provincial administration was difficult without active state involvement in irrigation development and provincial administrators often made complaints to the governor about the deterioration of state-peasant relations in traditional village irrigation areas. For example, in contrast to the rapid expansion of Wet Zone plantation agriculture, the condition of village irrigation in the Dry Zone sector was reported to the Governor Sir John Ward in the following manner:

"The irrigation system has been made use of in a destructive manner; there was no reconstruction of any form; the majority of people forced into a state of misery in a degenerated economy has been increasing daily. They die of diseases and starvation; the village tanks are becoming shallow, their capacity to hold water is getting reduced. The peasants themselves had neglected the past construction work, they are not either party to the maintenance of tanks in good condition; neither do they co-operate. The frustrated peasants cut down the tank bunds selfishly in order to ensure supply of water. They cut down forests mercilessly and cause wanton destruction. They have also forgotten the past prosperity and are now used to convenient

enjoyment of imported food. The interest of cultivation is largely diminished. The ancient irrigation system has been defunct, and the main water ways are in a state of decline due to non-use. When location of water discharging anicuts (water gate) was difficult the peasants cut holes at different places of the bunds nearest to their paddy fields and secure supply of water" (Bailey, 1952:28).

There were, in fact, structural problems inherent in a narrow and limited pattern of economic growth dominated by an export-oriented plantation sector. Marginalization of peasants, landlessness, unemployment, a far lower rate of growth in the neglected peasant sector and a high degree of dependency on the external market for consumer goods, were continual and mounting problems, not only for colonial but also for post-colonial governments.

However, these events were not merely the result of the development of plantation agriculture in the country, but also a consequence of the specific intervention strategy adopted and intervention strategy shaped by external administrative measures of the colonial government. As some writers argue, at the level of state policy there appeared some articulate advocates of laissez faire capitalism and bourgeois liberalism but in their confrontation with the advocates of mercantilism they did not achieve a final triumph; for a class structure had already entrenched itself deeply on the basis of a mercantilization of pre-capitalist society. The interests of the dominant class or the group within it did not require a radical dissolution of the pre-existing economic order (Michel and Shanmugaratnam, 1984). Thus, despite the general neglect of the Dry Zone, the

intention of the colonial government was not to take measures aimed at completely dismantling the pre-existing economic and social order. There were several reasons for this.

First, despite the structural changes that had been introduced within the plantation sector, the characteristics of irrigation organization in the Dry Zone could not easily be destroyed or replaced by conditions of commodity production because, unlike the Wet Zone, commodity exchange had little influence over the social life of Dry Zone village communities. Since taxes were paid in kind, internal exchange relations did not become monetized. Second, the colonial administrators had failed to supply an adequate amount of wage labour for large-scale commercial plantations from the peasantry, where social and cultural relations reinforced the resistance to external forces. Third, due to the neglect of the Dry Zone (in terms of infrastructure, health, and agriculture), people were severely affected by malaria and other diseases. These various factors, then, pressed farmers to find solutions to their own problems: insecurity generated cooperation and strong social organization within their communities.

Although commodity (exchange) values and money became widespread, in the national economy the effects were uneven, with considerable regional disparities. Nor did the introduction of a legal superstructure legitimizing private property and freehold serve to create the pre-conditions for a radical alteration in the labour processes and existing social structures of the Dry Zone. On the contrary, conditions intensified the degeneration of productive forces, leading to the reinforcement of

small-scale peasant production primarily geared to the satisfaction of household economic necessities.

Intervention Practices of the Colonial Government and Outcomes

With the introduction of the Crown Land (Encroachment) Ordinance of 1840 and subsequent Ordinances, the colonial state acquired legal and administrative authority power over communities and their land tenure system. All unoccupied forest and uncultivated lands were proclaimed Crown land. Privately-held lands were recognized on the basis of uninterrupted cultivation during the previous 30 years, but the peasantry was deprived of the cultivation of chena which had given peasants the right to cultivate in highland areas². Under the new law, rural producers could not prove legal rights to these chena lands because land-use practices were based upon village land allocation which did not involve the demarcation of fixed boundaries in the form of individual rights of ownership. The village principle was simply abused when the British resorted to gratuitous forced labour for the construction of modern public works such as military roads, bridges, tappal (post) office stations, and agents' residences, which were of no direct benefit to local people. The construction of roads and bridges (under the Road Ordinance of 1848) was of direct benefit to the newly established plantations (Sessional Paper 4 of 1867). The nature of these works required that villagers be deployed outside their home village. The introduction of a district administration increased the power of central authority at regional and village level. Each Government Agent was empowered to compel claimants, by issue of

notice, to appear before him and prove title to land. If claimants failed to do so, then the lands belonging to them were deemed to be owned by the Crown. This legislation was enforced with the double purpose of giving opportunity for the plantation owners to acquire access to suitable land for investment and to create a cheap wage labour force. Yet this marginalization of the peasantry did not form the basis for the creation of a labouring class since the so-called landless and sharecroppers were not altogether denied access to land and had some means of surviving as peasants, using traditional methods of sharing production (**pangu system**).

Later, from about the 1870's onwards, Government Agents of the British administration in Sri Lanka became aware of the fact that British rule had neglected the Dry Zone for fifty years or more. Many felt it their task to repair the damage done. And so eventually the colonial government came to recognize the importance of irrigation development in the country and the adverse impact created by the reforms they had introduced. The intention of state policies had been to protect the growth of the plantation economy and to avoid social pressure from the majority of peasants, but later they discovered that successful co-operation and co-ordination between colonial officials and the plantation community was a system that could be replicated in other areas of the country. Therefore they took immediate steps to recreate local authorities that strengthened and supported the quasi-traditional landowning structure. In this way the colonial bureaucracy hoped to develop closer links with the native landowning class in order to achieve good administration and to acquire leverage over the peasantry. The colonial bureaucratic administration was extended to include Sri Lankan agents within the formal

administrative system. The role of these agents was to keep a check on rural unrest through legal means, by rehabilitating ancient irrigation works and by providing for landless families in the Dry Zone. The intention was to reinforce the political subalternity of the smallholder population and its general dependence upon a Sri Lankan elite. They, following the colonial methods of management, viewed the problems in terms of external institutional deficiencies, and conceived of solutions in terms of legal and institutional forms of policy intervention. The common failures of these initiatives to articulate and incorporate the kind of demands and policies appeared to represent the true interests of the small holders themselves⁴.

This tendency finally took the form of the policy of state-aided land re-settlement (Michel and Shanmugaratnam, 1984:84). Thus the peasantry was to be kept under state control by promoting the smallholder's position through establishing peasant re-settlements. In this way allocation of state land to villagers was implemented on a large scale, especially in the 1920s when the Sri Lankan elite became an effective challenge to state power. The programme was conducted in the name of the peasantry, but in fact owed little in origin or in detail to political pressure from the villages. Instead, the Sri Lankan elite seized upon and articulated what appeared to be potential or actual peasant grievances to give moral and ideological support to its own claims to rule. Hence state intervention to promote smallholder development must be placed within an interpretation of Sri Lankan history and society that shows how it served the interests of the Sri Lankan elite's claims to leadership, a process also used strategically by small

farmers for the pursuit of their own social and political struggles.

In the process of changing the social and economic status of the rural aristocracy, which resulted from their changed position vis-a-vis the state bureaucracy, the interests and instruments of this class were diversified rather than made more uniform. For example, those who became state bureaucrats often preferred to use statutory powers over existing local forms of control organization. The majority of them enjoyed the new positions given to them, such as Mudaliyars (Head of a region), Ratamahathmaya (Head of an area) or Headman, and in this manner they became incorporated into the colonial system. In some cases their positions were entirely colonial creations. Some of these officers later rose to higher-level public service positions, becoming the elite of the Ceylon Civil Service. Officers of the latter constituted the core of the system of territorial administration, and were recognized officially as the legitimate spokesmen for peasant interests.

By the beginning of the 20th century, unemployment, poverty, landlessness, and external dependency on food emerged as the most crucial problems and were felt particularly during the First World War. Imports of staples for an increasing population (including migrant labour from India) were difficult given the shortage of supplies from countries such as India. Peasant rice production in Sri Lanka also fell while prices rose sharply. This led to protests by not only the local population but also the plantation community, against the overall economic strategy that allocated national food production to a secondary place. Therefore there was heavy pressure on the government to alter its policies.

Aims of Nationalist Leaders and State Intervention in
Irrigation Settlements

The State-sponsored settlement programme became the main policy in the 1930's. This had resulted from the mounting social and economic crisis during this period, which continuously forced the government to take immediate action to increase food production and to develop irrigation simply in order to cope. The world depression of the 1930's thereby exposed even more forcibly than earlier periods the contradictions built into the uneven pattern of agrarian growth. Most of the estate owners suffered losses after 1930 due to a sharp fall in their export incomes. And so they began to reduce productive investment, labour and wages in the plantation economy in order to offset these losses. As a consequence, a large number of families in the Wet Zone were thrown out of work.

This was happening at a time when the country's political environment was in the process of change due to the emergence of nationalist movements ranged against the colonial administration. One result was that, after more than a century of British rule, the Donoughmore Constitution of 1931 introduced a system of universal suffrage. Beginning with government measures to introduce more democratic forms, successive administrations then used Crown land alienation procedures to distribute land in the Dry Zone through irrigation colonization projects, and, to some degree, to transfer population from the Wet Zone.

This was an important turning point in the political history of Sri Lanka, and conceived with the establishment of the Ministry of Agriculture and Land (in

1931). The new constitution gave the Sri Lankan members of the State council a considerable influence over the formulation of policy, especially in respect of irrigation settlement.

A leading role was played by D.S. Senanayake, leader of the nationalist movement, Chairman of the Agriculture and Lands Executive Committee under the collegial Donoughmore Constitution of 1931, and the later first Prime Minister of independent Sri Lanka. It was in response to the conflict with the colonial bureaucracy over guardianship of peasant interests that he suddenly changed tack towards the welfare of peasants with the intention of gaining popular support. More than anyone else, D.S. Senanayake was responsible for infusing Sinhalese nationalism with the vision that colonization of the Dry Zone was a return to the heartland of the ancient irrigation civilization of the Sinhalese. Consequently preservation of the peasantry through a settlement programme became the major theme of state council debates during the 1930's, which was finally translated into a state-sponsored settlement strategy. Thus the settlement programme in Sri Lanka became a major means of external intervention but was manipulated by local leaders who had their own interests in promoting irrigation development. Sri Lankan members of the legislative council stressed the importance of self sufficiency in rice production. They were, it seems, particularly interested in development-oriented state intervention in order to secure the support of peasants and in order to achieve state power. They legitimized this through their involvement in irrigation settlement. They sought to acquire the popular support of the peasants through restoration of village irrigation systems and through the construction of major irrigation

schemes in the Dry Zone. The provision of irrigated land to local people was, they reasoned, the best means of gaining their support. Secondly, growing economic and social problems, landlessness and increased class conflict had created serious insecurity among landowners and entrepreneurs in the plantation sector. Hence, the Sri Lankan elite argued for the establishment of settlements in the Dry Zone as a means of separating these 'problem creating' landless and poor unemployed groups from their villages, thus shoring up the existing class and property structure.

In the light of the above situation, the government gave more and more attention to the settlement programme, with an emphasis placed on the restoration of major irrigation works that lay abandoned in the Dry Zone of the country. The setting up of District Agricultural Committees and of the Irrigation Department facilitated the Government Agent's work as the principal co-ordinator of the irrigation programme in his area. These institutions (consisting only of government officials) were incorporated into the Irrigation Ordinance No. 32 of 1946 which provided legal backing for them. A significant outcome of this change in perspective on irrigation development was the enhancement of the decision-making power of the bureaucracy, with the further consequence of imposing limits on the participation of the farming community. The protected tenurial system prescribed in the Land Development Ordinance, under which the newly-reclaimed lands in the irrigation schemes were distributed, required continuous supervision by officials. This had a great impact on the relationship between officials and farmers. During this period, then, irrigation development became a major

instrument of legitimizing the role of bureaucratic institutions.

After 1931, land alienation was based on a "mapping out policy". The main objective of this was to improve the living conditions of rural society by promoting the development of agriculture. Providing land to landless peasants was intended not only to stimulate food production but also to regularize the "peasant proprietor system" aimed at transferring landownership to peasants. In this process some land was reserved for village expansion and forests and pasture; and settlement of surplus population in colonization schemes was also initiated. This was the beginnings of a systematic implementation of land settlement schemes and alienation programmes under rules and regulations enacted by the Land Development Ordinance of 1931. Unauthorized transfers or sales of allotments were prohibited, while poor peasants were given small parcels of land.

Later, the government's land settlement strategy underwent important changes; yet it still failed to find a solution to the crucial problems of the peasantry. Policy decisions were taken to make land alienation more efficient so that more and more landless and poor peasants could obtain small parcels of land. However, the process of distributing these benefits fell to the discretion of public officials and politicians, and thus was a stimulus to politicization, while, especially in relation to the choice of settlers for Dry Zone irrigation schemes, a variety of criteria were introduced, making the scope for political manipulation very wide. Supervisory control over the use of alienated land, which is implicit in the paternalist and custodial nature of the work of officials, was not in fact

practiced. And so in Dry Zone irrigation schemes the state almost ceased to attempt to control illegal fragmentation, sales, mortgaging and leasing of allotments, practices that continued to widespread. Attempts to enforce planned cultivation programmes in these schemes have likewise failed.

This land and irrigation settlement policy stressed the technological side of agriculture, and did not take sufficiently into account the ecological and social background of Sinhalese cultivators. In the long run the policies of the state did not bring what they had hoped for. There seem to have been two reasons for this failure. In the first place, there was a lack of understanding of the complexity of Dry Zone cultivation and secondly, irrigation plans were not carried out in accordance with the local interests and practical needs of farmers.

State Intervention Welfarism and Outcomes

In 1939, Mr D.S. Senanayake, the Minister of Agriculture and Lands, reformulated settlement policy in an attempt to speed up the settlement of people in the Dry Zone. The new policy made the government responsible for providing almost all the inputs and services other than cultivation. This included the construction of channels, the provision of engineering services, assistance for clearing jungle areas, building houses, and providing health services, seeds, hospitals, basic agricultural implements, co-operatives etc. This type of state-aided 'ready-made' settlement scheme was highly welfare-oriented and public investment in this programme increased sharply. Since non-industrial Sri Lanka could

not provide other alternatives, almost all the unemployed and landless poor were attracted by this type of 'spoon-fed' welfare scheme.

Later, after Independence in 1948, the Sri Lankan state elite set about improving the relationship between government and peasantry by expanding social welfare. As a result of the Malaria Eradication Programme initiated in 1945 and other welfare measures, there was a sudden fall in mortality and sickness, while the birth rate increased. The death rate of the Dry Zone area fell from 18.7 in 1945 to 12.3 in 1953; while the birth rate increased from 36.7 to 47.2 during the same period (Dept of Census and Statistics). Between 1946 and 1948, about 400,000 people were added annually to the total population and the number of unemployed nearly doubled during the same period. Thus social and economic problems in the late 1940's and early 1950's grew much faster as a result of this population explosion. After independence, political leaders attempted to meet the political challenge by giving priority to the social welfare of peasants and to state-aided settlement schemes. But, despite independence, Sri Lanka continued with the same structural dilemmas of earlier periods. The expansion of the settlement programme in the Dry Zone was seen as the only solution for rapid demographic growth and for tackling social issues such as unemployment, poverty, landlessness and external dependency on food. Parcelling out small plots to poorer sectors in the countryside was seen as part of an overall welfare package.

Until this stage, attempts to increase local food production and to provide relief to the poverty-stricken rural population by giving them more land had been the

main strategy followed. This was achieved through rehabilitation of ancient irrigation works, land development and colonization in the Dry Zone. The selection of the particular projects was guided primarily by the availability of irrigation facilities. Hence dilapidated irrigation works became the nuclei for the formulation of new projects. Detailed feasibility studies were not considered necessary as the decision to implement these projects was simply based on the availability of irrigation facilities. Planning was restricted to project-level physical planning and both planning and implementation were carried out almost wholly by bureaucrats and technicians.

Participation by local people who were supposed to benefit from these projects was negligible. The government's strategy was to motivate and persuade people to migrate to an unfamiliar and inhospitable environment by supplying all possible facilities and inducements. This made the alleviation of rural poverty by means of colonization a very costly operation. Nevertheless, it did lead to the transfer of some benefits, mostly in the form of new assets, to poor villagers who, although not explicitly stated, comprised the target group of this development activity (Gunadasa, 1985).

In the period following Independence in 1948, policy changes were attempted through introducing amendments to the Irrigation Ordinance. These changes were based more on certain abstract notions of the value of a centralized system of administration than from any empirical assessment or monitoring process. However, as revealed in the 1960's, the benefits which followed from increasing investment in land development and settlement proved to have only a marginal effect on poverty, landlessness and

unemployment (Kandyan Peasantry Commission Report, 1956). Thus the main theme of the State Council debates in 1950s was the need for a well-planned, organized agricultural policy. In order to achieve this a six-year plan was prepared. Increasing productivity by adopting more intensive and scientific methods of farming was the primary goal of this plan. It also attempted to identify available land for allocation to a maximum number of families. This was to be achieved through two measures. First, the allocation of larger holdings (about 50 acres per person) to middle peasants was restricted and, to some extent, this eased the problem of the shortage of land for poorer people. Second, the size of allotments given to poor peasants was reduced from 5 acres of paddy land and 3 acres of highland to 3 acres of paddy and 2 acres of highland. This reduction in the size of allotments was intended to provide a plot small enough for a poor family to manage and to create more land for a larger number of landless unemployed. Hence the main focus of the change in policy was a shift in favour of the 'poorer peasants' (see Appendix 1).

However, by the 1960's, the state-aided settlement programme was critically reevaluated because its achievements were considered far below those expected. The peasant rehabilitation programme was apparently not an effective solution to the ever growing problems of low levels of food production, scarcity of irrigated land, and increasing unemployed rural labour. Moreover the total cost of the programme at the end of 1960's was about Rs 345 million, with returns amounting to about only Rs 25 million. A FAO/IBRD team reported in 1966 that the very high costs involved in the provision of irrigation facilities, infrastructure, housing, credit, marketing, and health management were out of all

the growing demand, the size of plots was determined therefore primarily by political interests.

This indicates that, rather than arising out of the application of some 'rational policy' or systematically formulated plan, the determination to undertake irrigation settlement schemes resulted from the quest for stability and maintenance of the political and administrative statuesque, 'Keeping some in power and the offices in being' (Schaffer, 1984).

Hence the state, once again, stepped into the physical rehabilitation of irrigation works, which it saw as critical for slowing growing 'peasant problems', and sought to arrange for their better management. Yet what resulted from these well-intentioned state programmes was, on the one hand, a throw-back to a paternalistic attitude adopted by local officials and a concomitant dependency syndrome among farmers, and on the other hand, an incorporation of the village unit into an island-wide and uniform organizational structure in which officials played an even larger role (Wimaladharma, 1986).

Historical Experience and the Mahaweli Irrigation Settlement Scheme

As the above account indicates, irrigation settlement in Sri Lanka has a long record of excessive state intervention based principally upon rigid and non-accountable bureaucratic structures. The present-day Mahaweli Irrigation and Settlement Programme in Sri Lanka, recently initiated with the assistance of the World Bank, reveals that the state in fact continues to play a similar role in irrigation development and

settlement, which it attempts to resolve national problems through strengthening formal organizational structures and promoting a large bureaucracy. Out of this arises the central question as to whether the state has the capacity to define and deliver policies when there are such deep-rooted organizational problems in these state-sponsored irrigation settlements. Such problems, of course, have been shaped by struggles for power and clashes of interest both within the state institutions themselves as well as within the farming community.

The understanding of state intervention process in irrigation and settlement development, therefore, depend very much on the analysis and diagnosis of the individual and corporate interests and views of state functionaries, as well as of their responsiveness to the needs and demands of the farming community. A major focus for research is to understand the ways in which the state apparatus in the Mahaweli settlements forms part of the local arena made up of different social actors: political agents, bureaucrats, farmers and traders.

Historical experience shows that state intervention in irrigation settlement has involved a gradual expansion of formal organizations together with the emergence of conflicting interests based upon public goals that could not be attained. The abuse of state resources in the process of planned intervention is a major criticism that has been raised against people representing formal institutions. The assumption here is that the struggles occurring between intervening parties and farmers over scarce resources are not merely the result of the lack of such resources but also a consequence of the mismanagement and misuse of them. Although the number of institutions and officials in the irrigation schemes

grew, they remained not only ineffective but also disruptive since they forced farmers to depend upon formal organizational structures which in the end tended to undermine the capacity of local organizations to manage their own social affairs. Another important historical tendency in state-sponsored irrigation schemes in Sri Lanka is that failures often generated further opportunities for corrective measures leading to further interventions which only served to reproduce the same set of problems. These problems will be explored in the following analysis of organizational problems in a Mahaweli irrigation settlement.

Notes

(1) According to the Report of the Kandyan Peasantry Commission, the basic principle of this economy was to achieve self-sufficiency in food and employment. Its nucleus was the paddy field which supplied the main article of diet. Gardens and chenas produced an additional supply of food and the village forest the building materials for the village housing. Sufficient employment was found in agriculture and subsidiary pursuits for it to be said that, for an agricultural people with a peasant economy, there was sufficient food and employment (Kandyan Peasantry Commission Report, Sessional Paper, No 18, 1951:9).

(2) This ordinance and the subsequent regulations enforced by the state during both colonial and post-colonial periods nevertheless failed to control farmers' cultivation practices such as chena farming because, as Roberts argues, if peasant numbers were to expand subsequently the peasant population would be obliged or forced to turn to the state for new land, either formally or by encroachment (Roberts, 1973:17-18). As a result, during the 1960s the number of encroachments was twice as high as actual alienation (Report of the Land Commission, Sessional Paper, 1965).

(3) Rajakariya (King's rule), originally an order of the King for compulsory village labour for building of their irrigation tanks, was used by villagers during the colonial period to build and restore their village tanks. However, for the building of larger tanks they employed Tamil labour from outside areas (see Kloos, 1989:4). During the colonial period some 1720 small village tanks were restored by villagers themselves

under the rajakariya principle (Administrative Report, Anuradhapura District, Blue Books, 111, 1861).

(4) Different authors provide different explanations about the relationship between political ideology and practice (see Moore, 1985:378; Samarasinghe, 1981:34-48; Roberts, 1979:28).

CHAPTER THREE

COMPLEXITIES OF FAMILY FARMING IN THE MAHAWELI SETTLEMENT-SYSTEM "C"

A major problem of intervention practices in Mahaweli settlements emerges out of the contradiction between the official assumption of uniformity in family farming and the diversity that actually exists in the process of implementation. Similarly, uniform procedures of programme implementation (i.e. uniform management of farm plots, water inlets, service and input deliveries, water distribution, timing of tasks, crop production, and marketing), are based upon the policy makers' assumption that the social behaviour of local officials is unitary in nature and shaped by one type of discourse. Therefore they expect all local officials to play a similar role in the process of planned intervention. However, in reality, the official discourse that is used and the authority structure that is to be put into practice, often clash with the more complex development problems and local structures that emerge, as a result of the differential responses and reactions of individual farmers and social groups. Secondly, the formal communication system or policy discourse used has its inherent rigidities and limitations, since it is governed by a set of rules and regulations which the local officials cannot apply when confronted with the more relevant and highly diverse local strategies and types of discourse used by farmers in accordance with their own practical knowledge. Thus,

the multiplicity of interests and behaviour of local officials are shaped by the diversity and complexity of the practical problems they face. They are, that is, faced or compelled to formulate alternative objectives and actions as a means of coping with problematic situations. This chapter then, analyses the ways in which these conflicts and contradictions emerge and examines the nature the structural location occupied by local officials in three contrasting settlement units.

From the perspective of policy implementors, diversity has a different meaning. They explain it principally as a management problem, and if, the latter is considered real, then one needs to determine how far this diversity is externally determined and reproduced by the actions and ideologies of the intervening parties themselves. An explanation of the different situations in the three settlement units, therefore, requires understanding how project officials evaluate problems and set about devising "solutions" for them. This is important because intervention practices are based upon officials' ways of conceptualizing the problems of family farming and of categorizing farmers and their production problems. For example, settlement unit managers often categorize farmers in terms of "progressive" versus "backward", "efficient" versus "inefficient", "adaptable" versus "unadaptable", "educated" versus "uneducated", "trained" versus "untrained" etc., which they use to explain the diversity of family farming which they see as their job to solve. This means that they consider their role as indispensable to making farmers "progressive". According to them, "failures" cannot be avoided but can be corrected with proper management or "corrective actions". For corrective measures, more and more officials, facilities and formal institutions are needed,

and this process is what constitutes the central organizing principle of the Mahaweli settlement development strategy.

Intention of Intervention (Uniform Family Farming Strategy) in Mahaweli Family Farming

A main policy objective of the Mahaweli Settlement Project was to attain the national goal of self-sufficiency in rice (the staple food) through facilitating the production of High Yielding Varieties of paddy. This was not different from attempts at state-sponsored irrigation settlement in the past (see chapter two). The total package of 1.2 hectares of land, improved cropping patterns, inputs, extension services and credit was provided to each family to ensure not only a reasonable standard of living, but also to maintain a high level of production. In providing them with uniform one-hectare irrigated plots and a production base with tabula vasa conditions, an eventual transformation into egalitarian family farms was envisaged (Weitz, 1980:21).

The concept of small farms, with an equitable distribution of 1.2 hectares allotted to each farmer¹, was considered the most appropriate and effective human settlement plan for encouraging a high degree of self-sufficiency within settlements and for enabling the settlers to maximize production. An even more far-reaching measure was the decision to keep the size of all land holdings under this project to a standard small size which was intended to eliminate larger landlords and to introduce equality among farmers. The allocation of equal allotments, together with specific regulations aimed at preventing either the sale or fragmentation of land, was

seen as a definite step towards removing one of the major sources of rural inequality. Renting or leasing of these family farms was made illegal.

The settlement families were supposed to cultivate their small areas of land with family labour and generate a sufficient income for the family(2). However the Mahaweli Settlement Authority's functions of irrigation settlement and management were considered vitally important to the implementation of the policy. The elimination of independent decision making by the farmers concerning production would provide the Settlement Authority with the power it needed to achieve its goals. Thus, in order to maintain expected levels of production on family farms, management officials took over the control of basic resources (such as land, irrigation water, credit, inputs) and the organization of production.

A large number of state institutions and officials were assigned to various tasks. Thus, when the cost of establishing this institutional structure is taken into account, the fixed and variable costs of creating and maintaining a successful family farm in the Mahaweli Settlement was much greater than similar expenditure on non-Mahaweli peasant households. According to a World Bank estimate, the average cost of administration and management for settlers in the Mahaweli Scheme in 1979 was about 15 times higher than the average public expenditure incurred by farmers in the country at large. In addition to this higher variable cost, more than Rs 150,000 had already been invested in the preparation of each irrigation allotment (Resident Project Manager's report, 1985).

The present situation of System "C" is such that there is one officer for every 17 settlers, one vehicle for every 150 settlers and one building for every 35 settlers. The number of full-time government officers employed among a comparable group of farmers outside the Mahaweli Scheme amounts to less than 2 % of the staff attached to Mahaweli settlements. This means that there is heavy pressure on farmers to produce cash crops for the market in order to meet the high overhead costs of the settlement (see Table 1).

 Table 1. Accelerated Mahaweli Programme
 Expenditure for the Development of System "C".

1. Estimated cost Rs. Million	=	5,529
2. Estimated area to be developed		
in hectares	=	28,000
3. Average estimated cost per hectare Rs.	=	197,464
4. Cumulative cost up to the end of 1984		
- Rs.Mln:	=	1,830
5. Total area developed up to the end of 1984		
in hectares	=	5,658
6. Total cost per hectare up to		
the end of 1984	=	393,000

Source: Mahaweli Projects and Programme 1979-1984.

Discrepancies of Interest, Influence, and Control: The Situations of the Settlement Units

The behavioral patterns that emerged in the three settlement units reflect highly heterogeneous settlement families, different group interests and conflicting values which are mediated at the critical point of linkage between farmers and officials, who devise their own strategies for negotiation and interaction at local level. There are many factors that contribute to the

diversity of settlement units, such as the different origins of settler families, differences in farming experience, demographic composition, location of irrigation plots and attitudes towards commercial farming. It is important, therefore, to explain the local characteristics of diversity in the three settlement units.

The following broad features can be identified units:

<u>Settlement Units</u>	<u>Main Features</u>
Unit No.1 (UI)	Represent upcountry farmers who either cultivate commercial crops in small gardens for day-to-day survival or work as agricultural laborers. They were selected by local political authorities and government officials.
Unit No.II (UII)	Represent mixed groups of different origin and settler category (such as selected, resettled and evacuated settlers).
Unit No.111 (UIII)	Represent mainly resettled families from the original irrigation villages of the settlement area. They cultivate mixed crops bothin rainfed and irrigated areas.

Settlement Unit NoI (U1)

Settlement Unit UI was located at the upper part of a main canal in System "C" of the Mahaweli Settlement Scheme. Settlers in this unit had easy access to irrigation water. They also had additional benefits such as better marketing and transport facilities because the settlement unit was situated very close to the main

township. But, according to women of this settlement unit, its geographical location was a disadvantage not only because the main town was full of liquor and gambling - a temptation for their husbands! But also because they were forced to depend too much on the market.

As shown in Table 2, the settlers in this settlement unit represent a selected group of farmers, with 84 per cent of them coming from up-country from the Wet Zone of the Central Province. Their adaptability to planned cash-crop farming was different from other groups due to several reasons:

- a. They had some previous experience of cash-crop farming in their villages of origin, where export production (such as tea, rubber, cocoa, and spices) had developed rapidly.
- b. They were exposed to a semi-urban life style and to market-oriented production which helped them to be integrated into cash-crop farming under the Mahaweli Scheme.
- c. They had some understanding of the various mechanisms that were operating in the commodity economy of the Central Province.

This, then, is a group of farmers who have a distinctive orientation and way of understanding problems and organizing their lifeworld. The average family size of those selected (up country) settlers is smaller (average family size is 3.5) than the family size of U 111 settlers (average family size is 5.8) and the proportion

of younger age groups between 25 to 44 years is comparatively high in U 1.

Table 2.

Settler Type -----	Settlement Units -----					
	U1	%	U11	%	U111	%
Selected farm families from Wet Zone (up-country) areas	214	(84)	80	(34)	22	(9)
Evacuated families from the reservoir area (up-country)	--	--	42	(18)	15	(7)
Resettlers from the settlement area (traditional peasants)	--	--	52	(22)	172	(75)
Selected farm families from Dry Zone (low-country) areas	41	(16)	62	(26)	21	(9)
Average family size	3.5		4.1		5.8	
Total	255	(100)	236	(100)	230	(100)

Source: Own Survey, Maha (Wet) Season, 1985.

About 80 percent of landowners in this unit fall into this age range (see Table 3).

Table 3. Age Structure of the Settler Heads of
Households in the Three Settlement Units 50
families (random sample) from each Unit

Age Groups Years	U1		U11		U111	
	No.	%	No.	%	No.	%
25-34	18	(36)	20	(40)	10	(20)
35-44	22	(44)	18	(36)	21	(22)
45-55	8	(16)	9	(18)	10	(20)
Above 55	2	(4)	3	(6)	9	(18)
Total	50	(100)	50	(100)	50	(100)

Source: Own Survey, Maha(Wet) Season, 1985.

A few small children, coupled with an insufficient number of active agricultural workers, is a factor which influences settler families to depend upon friendship networks for the organization of labour in their bid to become commercial farmers.

A one hectare plot is sufficient for this type of family to manage but additional labour is usually necessary since the average family size is small as compared to U 111. It cannot therefore be assumed that such families can easily engage in commercial family farming since they would have to hire labour. The old pattern of paddy cultivation, relying exclusively on family labour and reciprocal help among villagers, has become difficult among this settler group. Another major factor affecting this are time constraints of the official cultivation timetable. All farmers have to pursue and complete the same kinds of operations at about the same time, and in a very short period. Therefore it becomes difficult to finish cultivation operations jointly in successive fields as was common in traditional villages(3). Work has to be done simultaneously. Moreover given the labour requirements of modern paddy farming with its distinct peaks, family labour is totally insufficient. In a cross-system comparison, it was concluded that "family labour resources are exhausted (even) at relatively small farm sizes and moderately low aggregate family labour inputs per farm". Above a threshold of about 100 man-days of family labour per season the proportion of hired labour often exceeds 50 % of the total aggregate labour input (Farrington and Fieldson, 1981:12). A Mahaweli Development Board survey in the 1980 Yala season calculated the relation between family labour, wage labour and exchange labour for Galnewa region in H1. This was approximately 40: 50: 10 per cent respectively. The

estimate was applicable only to selected families from the up-country Wet Zone.

In the Mahaweli Scheme the labour requirements for 1 hectare of paddy is calculated to be to 175 man-days (Project Office, 1984). Although the labour inputs per hectare differ greatly between different colonization schemes (from 75 to more than 200 man-days per hectare), by and large these schemes represent areas of high labour input of over 60 man-days per acre as compared to the rest of the peasant sector in Sri Lanka. Of course, the labour input varies considerably from farm to farm and is highly dependent on cultivation practices, the availability of family labour and the size of the cultivated area. As shown in the Table 4, as many as 38 families in U 1 (about 76 per cent) hired more than three wage workers during the 1985 cultivation season. However, among this group of farmers there are alternative strategies of production as well. For example, these selected upcountry farmers cannot be considered as completely dislocated from their previous areas in the same way as the evacuated settlers. In fact they continue to enjoy various benefits. They exchange materials and labour with their relatives and friends in their villages of origin, and most school children in the higher grades remain in those villages where educational facilities are better. However, the availability of part-time family labour among farmers in U 1 is likely to be more limited, since the separation of families (some children remaining in the original village and rest residing in the new settlement) creates special difficulties.

Table 4. The Use of Hired Labor Maha (Wet) Season, 1985*
50 families (random sample) from each Unit

No. of Wage Workers	U1 No. of Families	%	U11 No. of Families	%	U111 No. of Families	%
1	4	(8)	6	(12)	6	(12)
2	5	(10)	4	(8)	3	(6)
3	6	(12)	7	(14)	1	(2)
4	10	(20)	6	(12)	1	(2)
5	10	(20)	3	(6)	0	(0)
6	8	(16)	1	(2)	0	(0)
7	4	(8)	0	(0)	0	(0)
Family Labour Only	3	(6)	23	(46)	39	(78)
Total	50	(100)	50	(100)	50	(100)

* Average wage labour employment for land preparation, ploughing, transplanting, manual cutting, threshing and harvesting.

Source: Own Survey, Maha(Wet) Season, 1985.

Nevertheless, the settlers in this settlement unit display a certain degree of capability and willingness to adopt new production techniques since they were settled at the top of end of the irrigation system. This assures them a better supply of irrigation water. But, the model of the family labour farm does not work in this settlement unit, because farmers are forced to develop more diversified household strategies in order to minimize the increasing costs of production. They also employ more hired labour than in other settlement units. Thus there is a greater dependency on high-cost managerial practice, which runs counter to the capital efficiency expected from this type of family farming. Costs of production and consumption increase disproportionately to the net returns to the farm.

U 1, then, is an example of the strategy of maintaining the family farm through combining the intensive use of non-wage household labour with extra-household wage labour. This illustrates the case for the persistence of family farm economies advanced by various authors (see Chayanov 1925, Shanin 1973 and Vergopoulos, 1978). Even though its economic achievements are somewhat lower than expected, U1 is a success story in this respect. Its superiority is largely due to satisfactory water distribution, better management by farmers, and high access to resources. U1 settlers receive inputs, such as credit, water and other services, early because their unit has the best location.

On the other hand, the way officials interpret this situation is rather misleading. For example, calculating "farm gate" incomes gives a high income level, although this does not mean that these settler families are well-off, since this income is off-set by traders' profit, the personal expenses of heads of household, interest payments, etc., all of which are considerably higher under the commoditization of agricultural production. Conversely low income from agriculture in U 111 does not mean that families are starving. They can also earn an income sufficient for a livelihood but, as we shall see, their strategies are quite different from those of U1.

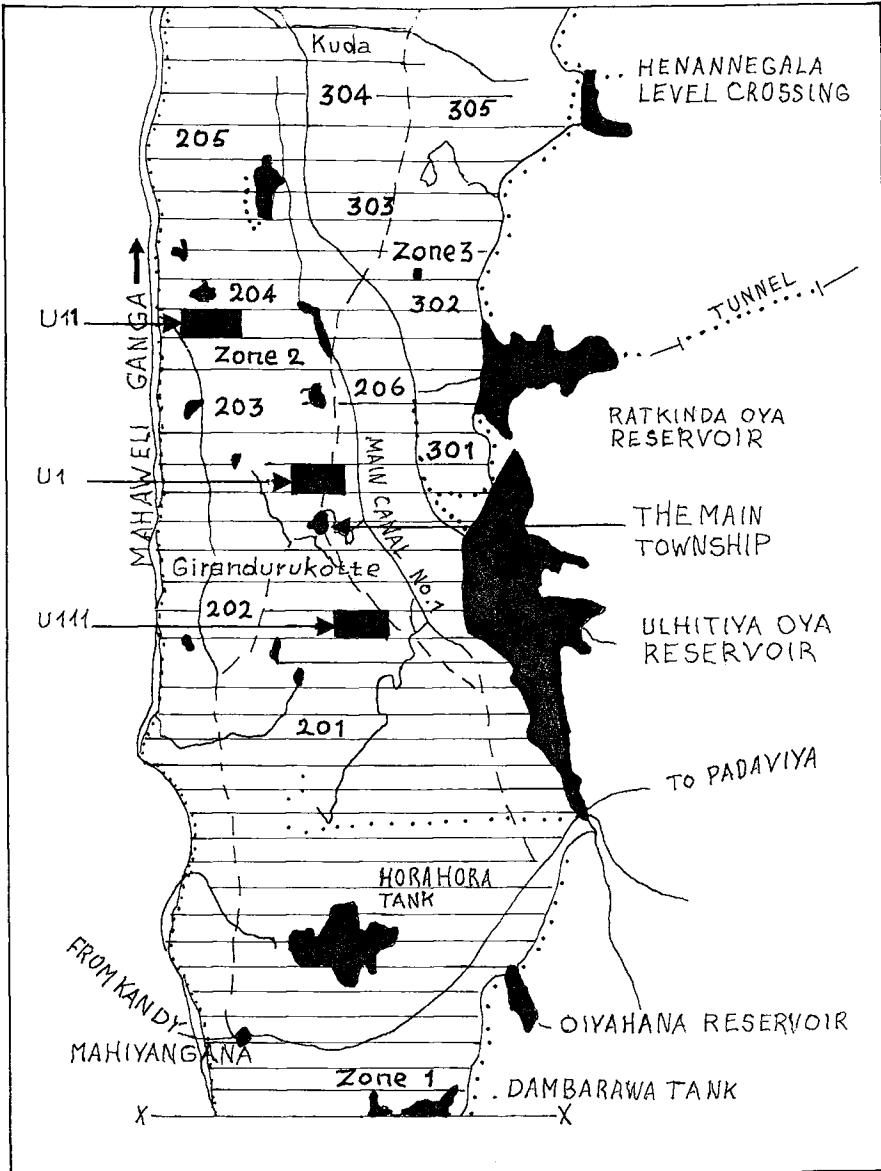
Settlement Unit No.11 (U11)

In contrast to the advantages of good location for settlement unit UI, the settlers in UII have to face many difficulties due to being isolated at the end of the irrigation canal. Also the distance between this unit and the main township is about 15 kilometers (see Map V). As

shown in Table 2, this settlement unit consists of different groups of settlers, namely, selected (up-country) Wet Zone farm families (34 per cent), re-settlers from traditional Dry Zone villages (22 per cent), and selected Dry Zone (low-country) farmers (26 per cent), and evacuated families from the reservoir area (18 per cent). Evacuated farmers from the Mahaweli reservoir areas were the most desperate group of farmers. They were forced to adapt themselves to the Mahaweli settlement due to their dislocation from their original villages as a result of the building of the reservoirs. Some evacuees worked even harder in order to survive and reproduce their social life within the new socio-economic environment, but their number was not large.

Although the settlers of U11 have different backgrounds and farming experience, in the local situation they share a common set of problems revolving around the scarcity of irrigation water. Hence, their encounters and interactions are principally shaped by irrigation water distribution problems. Although the family structure of "selected" young families is more or less similar to U 1, the settlers in U 11 employ less wage workers. This is mainly due to the greater risks of family farming under conditions of poor water supply. These "tail-enders" are settled in a difficult location and are becoming marginalized in the process of settlement since, being at the tail end of the distributory canal, they cannot earn a sufficient income from their farming. They therefore fall into the lower strata of the settler hierarchy. Yet, under these circumstances, they are more active in developing their own social networks and in devising the strategic actions for managing external forces.

MAP - V LOCATION OF THE SELECTED SETTLEMENT UNITS
OF THE SYSTEM 'C' - MAHAWELI SETTLEMENT PROJECT
SRI LANKA.



In such a situation the success of the settlement is largely dependent upon how far they can create some bargaining power vis-a-vis government officials responsible for water management and settlement administration.

U 11 is essentially an example of the failure of the settlement policy and of implementation strategies at local level. In this unit, the irrigation system cannot be operated by local officials in accordance with their programmes, since they themselves cannot effectively control the allocation of resources. As a result, they are compelled to relax their formal tasks and allow farmers to manage their own activities. In this situation U11 settlers, taking advantage of the weaknesses of the official programme, reshape planned intervention in accordance with their own interests (see Chapter five for more detailed discussion).

Settlement Unit No.III (U111)

Settlement Unit U111 consists mostly of re-settled traditional villagers from the Dry Zone (75 per cent), where social organization was based primarily upon kinship ties (see Chapter 2). Production of mixed crops for family subsistence was the main goal of family farming in traditional villages. Now under the Mahaweli Scheme they are located in the middle of the system of distribution canals. Access to irrigation water in this unit is not as difficult as in UII, but, according to officials, water management is neglected by these farmers, which account for them being labelled as "backward".

Their lack of adaptation to new cash-crop farming is considered an important management problem by officials. The latter refer to the farmers' incapacity to follow instructions. But, in making such remark, they simply overlook the specific knowledge and adaptative capabilities shown by them as compared to those "unadaptable" farmers in the U11.

According to officials, their performance in the Mahaweli settlement has been poor due to several reasons:

- a) They were used to extensive subsistence farming in their original villages. Therefore they came to be known as 'traditional' farmers.
- b) The production of use-values, and indigenous methods of cultivation are more important to them than cash-crop farming with sophisticated methods.
- c) The types of 'knowledge' and 'education' necessary for intensified commercial family farming are lacking or unimportant among the majority.
- d) They are unwilling to change from their previous way of life.

As compared to other groups, this group of farmers demonstrates the discrepancy of interests that exist in the settlement units. They have their own goals of family survival and try to achieve them through a subsistence-based production strategies. Therefore, labelling them as "backward" also implies that the officials themselves have failed to change their ways of organizing their lifeworlds. This social fact is thereby interpreted by officials in terms of the so-called inefficiency of the

farmers (Chapter 5 provides more detailed analysis on this problem).

According to management officials, since settlers in this settlement unit are backward, agricultural extension and water management are hardly known to them. Whenever there are meetings with officials these farmers occupy the 'backbenches' because new programmes are unimportant to them.

Theoretically, a positive balance between family size and farm size (e.g. a manageable number of family dependents and sufficient family labour) is necessary to achieve production goals and the self-sufficiency of each farm. Table 5 shows the family structure of the sample households.

Table 5. Age Structure of Settler Families in the Three Settlement Units

50 families (random sample) from each units

Age Groups Years	U1		U11		U111	
	No.	%	No.	%	No.	%
Below 5	32	(13.5)	28	(12.6)	48	(17.0)
6-14	68	(28.8)	55	(24.7)	78	(27.7)
15-24	30	(12.7)	41	(18.4)	46	(16.3)
25-34	62	(26.4)	45	(20.1)	32	(11.3)
35-44	34	(14.4)	38	(17.0)	28	(9.9)
45-54	8	(3.4)	12	(5.4)	38	(13.5)
55 and above	2	(0.8)	4	(1.8)	12	(4.3)
Total	236	(100)	223	(100)	282	(100)

Source: Own Survey - Maha (Wet) Season, 1985.

Among re-settlers in U 111 there is a greater imbalance between family and farm size. On average there are about seven members depending on each one hectare plot but

contribution of family labour is nevertheless low, since about 40 % of the population is below 15 years of age and 11 % over 50 years of age. Thus more than half the population can be considered dependents. Under this situation, the goals of farmers and their households focus primarily upon family survival, rather than returns on cash-crop production. One reason why there are so many older people in this unit is that many settlers were the original landowners before their land was acquired for the development of the Mahaweli Scheme. They were compensated with plots within the new settlement scheme.

Unlike some families in U 1, most of the families in U 111 are reluctant to employ hired labour because apparently they are not so interested in commercial family farming. They often adopt other methods of overcoming household livelihood problems. For example, child employment is a common practice in U 111, where a high rate of school dropouts has been recorded.

Settlers in U 111 are considered to be poorer than those in U 1 and U 11. Yet this does not mean that they are being marginalized faster than the other two groups of settlers. Rather the opposite is true. Indeed, as far as livelihood strategies are concerned, the settlers in U 111 are in fact more organized than other groups. They know how to obtain social welfare assistance from the Mahaweli settlement. They ignore the cultivation of land using modern inputs and sometimes they work as agricultural laborers. Nevertheless their net incomes have not dropped far below those of U 1 and U 11 settler families.

Cultivation Practices.

Given the above pattern of heterogeneous settler groups, it is important to observe the various cultivation practices adopted by them. The possession of actual operational holdings and the income earned by their operators cannot be quantified accurately because many arrangements are informal and there are many seasonal changes. However we can draw some conclusions based upon observations and on information provided by Unit Managers. Although the relationship between the owners and operators of land varies, the cultivation of land by actual operators is shown in Table 6. U 111 recorded the highest amount of land leased and rented out, constituting about 38.4 percent of the total area of the irrigable land.

 Table 6. Cultivation Practices in the Settlement Units
 50 families (random sample) from each Unit

	U1		U11		U111	
	Acreage %		Acreage %		Acreage %	
Amount not cultivated	6	(4.8)	23	(18.3)	12	(9.6)
Amount cultivated	118	(95.2)	103	(81.7)	113	(90.4)
Total Irrigated land	124	(100)	126	(100)	125	(100)
Amount rent or leased out	8	(6.5)	16	(12.7)	48	(38.4)
Amount cultivated by settlers	110	(88.7)	87	(69.0)	65	(52.0)
Amount leased in or rented in	24		2		2	

 Own Survey, Maha(Wet) Season, 1985.

As shown in Table 7, an increasing number of settlers in U III ignore the cultivation of their own land. About 24 percent of the farmers have leased or rented out their entire plots, the main reason being lack of finance for competitive commercial farming. However, it is important to note that these settlers were more interested in working as share-croppers in order to share the costs of production than undertaking cash-crop farming which is risky and unfamiliar to them. They therefore adopt different land use practices from those selected from in U 1 and U 11. Part of their land is offered to friends or relatives who share the costs and labour.

 Table 7. Number of Settlers Leasing or Renting out Land
 50 farmers (random sample) from each unit

Settlement Units	Entire plot No.of Settlers %	Between 75%-50% No. of Settlers %	Below 50% No.of Settlers %
-----	-----	-----	-----
U1	1 (2.0)	5 (10.0)	4 (8.0)
U11	6 (12.0)	10 (20.0)	4 (8.0)
U111	12 (24.0)	16 (32.0)	12 (24.0)
-----	-----	-----	-----

Source: Own Survey, Maha(Wet) Season, 1985.

Resettlers in U 111 are thus becoming marginalized in so far as the cultivation of High Yielding Varieties is concerned, but they are not squeezed any further by demographic pressure since entire households are inserted into both subsistence agriculture and the wage labour market within the area. Agriculture among this type of farmers is becoming a supplementary source of income, although as owners of plots they do not become completely separated from the means of production. In fact they

remain Mahaweli settlers as long as they retain ownership of land.

The above unevenness of change and the co-existence of different economic processes at the level of the settlement units indicate the complexity of development and its local tendencies based upon farmer control of the production process. On the other hand, tendencies in U 1 demonstrate how simple commodity forms of production articulate with other forms of production. The demand for wage labour in "progressive" units, such as U 1, is supplied by non-commodity producing settlement units such as the U 111, since settlers in the latter are unable to survive with paddy income alone. Also income from land is becoming less and less important in relation to earnings from other sources. For example, about 24 percent of farmers who leased out their entire allotments are working as full-time agricultural laborers. Most of them rent or lease out their land for two or three cultivation seasons, at a rate of Rs.4000/- to Rs.5000/-. A family with three workers can earn about Rs.5100/- per season from wage labour (on the basis of Rs.85/- x 60 working days). Therefore, settlers in U 111 can earn a net income not lower than the net income of those who cultivate their own land, although, as I emphasized earlier, this does not mean that they are completely separated from their means of production. Indeed the majority cultivate a part of their allotments, while some family members seek wage employment. Different agricultural practices and livelihood strategies of settlers in each of the units reveals, therefore, not only the heterogeneity and great diversity among settler families but also the complexities of production processes.

The Official Viewpoint on the Diversity of Family Farming

The settlement plans, irrigation designs and management system of the Mahaweli Settlement Scheme are different from those of the old colonization schemes. Theoretically, the cluster concept of settlement was attempted in the Mahaweli, thus breaking with the changing previous ribbon type of settlement. The objective was to encourage better social relations among settlers through cluster-based settler organization. This was to be promoted by the Unit System whereby about 250 settlers were grouped to form one unit under a Unit Manager (UM). But in the process of organizing a top-down structure for administrative and management purposes, the original objective of cluster settlement was overlooked. As a result, not only has the gap between the formal organization of the Unit System and the actual patterns of social organization among farmers increased but it has also created a feeling among the latter that the functions of settlement units and Unit Managers (UMs) are external to the reality of their own problems, and that therefore they must organize internally in order to achieve their goals, through the manipulation of external agency intervention. Hence, once the distributory canals, field canals and inlet systems were put into operation, it became difficult for Unit Managers (UMs) to deal effectively with farmer behaviour and organizational strategies. This was due to several reasons.

- a) State intervention at the unit level has a different meaning when placed within the context of the interactional processes and individual and collective strategies of farmers. For example, UMs play the role of providers of resources and services, and at the

same time attempt to control resource utilization by the farmers. However control is severely affected by the scarcity of resources, the malfunctioning of the delivery system, and the red tape and formalities that are entailed. This makes it difficult for officials to deal effectively with the diverse interests and maneuvers of farmers.

- b) There is no consistent or uniform pattern of interaction between farmers and officials. Officials are part of the state apparatus but they cannot monopolize economic and social power in the settlements, nor do they have exclusive control over intervention initiatives. Although they are supposed to respond to the institutional interests that dominate "government machinery", they are forced to adjust themselves to the actual "local machinery" and arenas wherein practical problems emerge. And whenever the constraints and limitations of their own institutions become a barrier to their performance as outside intervening agents, it becomes necessary for them to take on the role of 'insiders' in accordance with farmers' interests. This way they can gain the backing of farmers to deal with the rules and procedures of their own external agency (see Chapter 4 for detailed discussion of this issue).
- c) Farmers, have their own understandings of new institutions, such as the Unit System, and may express these differently as groups or as individuals. This problem is interpreted by UMs as constituting a management problem.

As I explained in Chapter 2, the clusters of a traditional irrigation village are inhabited by people from one kinship group associated with a group cluster of dwellings with their own inter-household patterns of organization. In contrast, a new settlement unit of the Mahaweli settlement consists of about 250 settlers made up of people from different backgrounds with different social values, interests and knowledge. Each of them has a number for identification purposes. The settler, his home, farm canal, and inlet are numbered and UMs use these numbers for organizing their activities.

The new irrigation network of the System 'C' of the Mahaweli Development project is, for technical and administrative purposes, divided into a number of "blocks". The distributory canals, which are connected to the main canals, supply water for about 20 - 25 turnout areas. Each turnout area consists of about 15 farmers (see Chapter 4 for detailed discussion). Under this new irrigation network, farmers in a turnout area are responsible for maintaining the field canals only within their turnout area. There are then about 20 to 25 rows of settlers dependent on the water supply from common distributory canals. Control and management of water beyond the turnout area is the duty of officials. This makes it difficult to ensure that all farmers receive equal amounts of water or get sufficient water. The reasons are as follows:

- a) The levels of the turnouts along the distributory canals are not equal and thus there is no equitable distribution of water. Some turnouts are placed in lower parts of the distributory canal, while others are at higher levels. For the latter, the water level of the distributory canal is lower and therefore the

supply from this is very uncertain. As a result, those farmers in the lower reaches of the distributory canal have to block the turnout of the upper part of the distributory canal in order to obtain more water for their lower part. UMs are responsible for ensuring an equitable distribution of water and must respond to the complaints of both top-enders and tail-enders. When they fail to deal with such conflicting situations they usually explain this in terms of the lack of cooperation among farmers, although the farmers themselves often express the view that these conflicts are created by the officials themselves.

- b) There are some turnouts supplying water for only 8 settlers, whilst others supply water to more than 16. The supply of water in such cases depends on the water controller's way of operating the irrigation system. When a large number of farmers influence him to provide water in response to the actual water shortage they face, the methods used for uniform water control have to be altered in accordance with the discrepancies in the field. However, even if the maximum level of water is supplied through the turnouts in U 11, settlers could never receive the same amount of water compared with those in U 1 and U 111. This situation has led to the division of settlers into two groups: those who have easy access to water and those who do not. The differential interests and the complex nature of practical problems that arise between these groups cannot be dealt handled simply by the UM using his authority on an uniform basis, since the solution for one group becomes a problem for another. Moreover in a turnout area, settlers' problems relating to water, soil quality and salinity cannot be solved by the settlers

themselves. Not only do they not have the responsibility to attend to them but these problems, in the farmers' eyes, must be solved by UMs who are paid by government to do so. Hence the new turnout system has become an imposed administrative unit in which clashes between officials and producers regularly take place.

- c) Trying to introduce some ideal form of settlement is of no avail if local conditions and problems are not faced equally by all settlers. Thus, what may appear to be no more than relatively small technical and management difficulties become transformed into major organizational problems once they confront the problems of local diversity in ecology and social structure.

Different forms of farmer behaviour due to locational disparities, then, assume major organizational proportions. In a large irrigation scheme such as the Mahaweli Project, irrigation water is diverted from main canals and then distributed to settlers through a network of distributory and sub-distributory canals. This large physical layout is controlled by officials who take a major role in irrigation water management. According to these officials, this is more important to the production process than any decisions that farmers might make over irrigation water use. Settlement planners made the assumption that every settler would benefit equally after being provided with an equal amount of irrigation water. But, as farmers came to realize, once installed, the system functioned unequally. Unit managers likewise failed to make headway with this water management system, since in the circumstances, they were unable to reconcile the conflicting interests and production practices of

different groups of farmers that generally ran contradictory to official water management practice. Nevertheless, Unit Managers believe that it is simply the locational disparity of settlement units that contributes to the present unevenness of farmer organization and farm development.

Problems of Cultivation Time Schedules

Cultivation time schedules and a well-planned timetable of water supply are essential in a large irrigation project like the Mahaweli Scheme. The total irrigable area to be cultivated, the water capacity of the reservoirs, the main canals and distributory canals, climatic changes during the Yala (dry) and Maha (wet) seasons, the crops to be cultivated, the water requirements for various crops are considered when cultivation and water management time schedules are prepared. The officials' objective is to direct or train farmers to cultivate according to a prearranged timetable, so that the management and operation of the cultivation programme will be uniform and easy. It is argued that, cultivation according to a timetable can help settlers not only avoid the adverse effects of climatic fluctuations but also assist them in adopting to a common cultivation routine. However, settlers' own farm and household planning are based on quite different criteria, generally implying that they are likely to concentrate more on the most immediate problems and difficulties they face in the process of cultivation and in their social life generally.

Secondly, although settlers are requested to participate in cultivation committee meetings called to prepare the

next season's cultivation time schedule, their attendance is very poor. It was revealed, according to unit office records, that participation in cultivation committee meetings covered only 5 percent of the settlers of the unit. This situation arose mainly for the following reasons:

- a) During the earlier seasons, cultivation time schedules were not followed precisely, and so farmers did not have much confidence in such them.
- b) There was a big gap between the time schedule and actual time spent by individual settlers. More than 80 percent of the settlers in the sample were found to be behind the time schedule. Moreover the majority of the settlers who participated in the cultivation committee meetings were farmers who had adequate access to inputs, capital and water in order to complete cultivation on time. There were several constraints on settlers preventing them completing cultivation tasks as scheduled. These were mostly financial and so they found it of no avail to attend in the meetings. The result was that decisions were made in favor of a minority of settlers.
- c) Settlers in the sample could not adjust their expenditure to suit the cultivation calendar. After the harvest of one season they sold their paddy and spent this income on various consumer durables that they needed to purchase, without reserving any of this money for the next season.

Facing such practical problems with the official cultivation programme many farmers were led to organize their own programmes. About ninety percent of the

settlers in the sample were found to prefer to plough with buffaloes, and so they made their own arrangements for hiring them for the entire season from villagers outside the Mahaweli and later paying in kind (paddy) after harvesting. In this way they abandoned the use of tractors, broke the timing of the official cultivation programme and economized using their own programmes. The latter involved various types of non-monetary transaction (such as family labour exchange, inter-household credit transactions, and the exchange of agricultural implements) with relatives or friends.

Rotation of Water Supply

Rotational water supply was introduced especially during the Yala season. The aim of management in adopting such a measure may have been to motivate and train settlers to minimize wasteful use of water. Through rotational water supply the amount of water in the reservoirs can be saved to distribute to settlers in the project area during the dry season. It was also expected that it might lead to minimizing traditional habits of using too much water in the paddy field in order to kill weeds. A minimum use of water can in fact prevent damage to field ditches and canals and protect soil fertility. But in practice this system of rotational water supply has created more problems than it has solved. Moreover the benefits of the rotation of water supply are not the same for all settlers. This is for several reasons:

- a) The time allocated to supply water to individual settlers was fixed without considering distances between turnouts and inlets. The majority of settlers at the tail end of the field canals could not receive

During the 1983/84 Maha and 1985 Yala seasons, there were only five settlers who completed cultivation according to the set timetable, while the rest were behind. Agreements were made between officials and farmers on water requirements, but these were never met in practice. Thus though the timetable was said to be indispensable for managing a large-scale irrigation scheme, it was impossible to put this into operation unless the specific problems of the settlers were properly addressed and solved. The time schedules were prepared on the assumption that all settlers had equal qualities of soil, equal access to water and inputs, and equal income, interest and capital.

The Problem of Farmer Efficiency

A complaint voiced by Unit Manager U111, was that he had difficulty in organizing farmers to carry out the programme of cultivation, which he assumed was due to the poor selection of 'backward' farmers, whose interest it was to remain at a subsistence level, using their own cultivation practices. This, he argued, was an obstacle to uniform and well-planned settlement management.

Bad selection, according to him, could be defined by reference to the poor education of the older settlers, families with too many children, and farmers with traditional values - all reasons given by unit managers for their failure to achieve their goals. However, during monthly meetings held between high-ranking Mahaweli officials and unit managers, I sought to obtain further clarification on this problem of management among heterogeneous farming households. This led to the realization that there was in fact no common agreement,

nor widely accepted opinion among them as to the critical factor, thereby showing that conflicting views and interests existed not only among farmers, but also among the officials who were promoting the concept of uniform management.

UMs categorized some groups as of 'poor education' and 'backward'. Yet the farmers they pointed to had been resettled from village irrigation communities and were, in fact, the most experienced farmers in irrigated farming. Therefore the 'education' they expected from farmers took no account of the useful skills they already possessed.

A main difficulty faced by UMs was what they called farmer "inefficiency". According to unit managers, in some settlement units (such as U III) farmer inefficiency caused them to introduce new farmer-training programmes and special community development projects. Failure of the intervention programme therefore was interpreted in terms of farmer inefficiency and did not challenge the notion of "successful implementation". Failure, in this case, was not the fault of implementing officials: it was a problem requiring corrective measures and incentives applied by field staff so that they would eventually achieve their policy objectives. In this way officials provided their own interpretation of the problems through recourse to the notion of inefficiency. Yet there was a growing contradiction between officials' ways of identifying the managerial factors necessary for farmers and farmers' own management practice and criteria of viable family farming. An efficient farmer, according to officials, should be able to manage his farm with modern input technology. He should follow the instructions of officials regarding carefully timed

application of inputs, water management and production of targeted yield. All these services and inputs entailed high expenditure, which many farmers could not afford. But such cost factors of modern family farming were not considered important in the assessment of farmer efficiency by officials.

The heterogeneous nature of household units of production in the Mahaweli settlement is one of the most difficult administrative problems at grass-roots level, since there is no uniformity in the strategies adopted by settlers, nor equal capacity among them to improve the 'efficiency' of family farms along the line expected by the Mahaweli management. The allocation of one hectare to each family is a measure that runs counter to the need for flexible landholding and land use necessary for balancing the demographic variation of farming households. Secondly, despite its assumption of egalitarian family farms, the settlement strategy could not avoid distributing greater benefits to some settlers.

Productivity and Household Income

Yield per hectare is the most common and direct monitor used for assessing efficiency and productivity of small units of production in System 'C'. Official records often show higher yields per hectare than independent studies. Many grassroots officials keep their own yield records in order to defend their work and to justify, as it were, the heavy monthly wage bills of the large number of officials. Even then the average paddy yield per hectare, as given in official records, is below the projected yields in all cultivation years in System 'C'. According to estimated yields and production, a farmer produces

over 5200 kgs. of paddy per one hectare plot, but, as we can see from the Table 8, the highest yield per hectare received in System 'C' was only 4389 Kgs (in 1985/86). This was not only below the projected yield, but also lower than the average yield in neighboring districts such as Polonnaruwa and Anuradhapura (excluding Mahaweli areas).

But according to the opinion of officials, when yields fall below the expected level, the efficiency and productivity of farms can be improved by adopting crop diversification methods.

Table 8. Average Yields per Hectare (kgs.)
Mahaweli System 'C' and Neighboring Districts.

	1983/84	1984	1984/85	1985	1985/86
System 'C'	2696	3051	4201	4076	4389
Polonnaruwa	3846	3908	4932	4452	4932
Anuradhapura	3177	3156	4034	3804	4619
Amparai	3135	4201	3887	4618	3329

Source: MEA, Department of Agriculture

In system 'H', where the Yala (dry) season is devoted to the cash crop production of chillies some possibilities for changing from unprofitable to profitable crops are possible. This is not the case in System 'C', (see Table 9 below) where even during the Yala season paddy farming predominated, despite its unsatisfactory yield per hectare.

 Table 9. Work Plan - Agricultural Production Programme
 1986 - System "C".

Crop	Irrigable Land - Hec.	High Land Hec.
-----	-----	-----
Paddy	9190	---
Chillies	300	---
Red Onion	20	---
Cow Pea	70	---
Green Gram	40	---
Soya Beans	15	---
Black Gram	30	---
Ground Nut	08	---
Vegetables	120	---
Gingelly	---	140
Bomby Onion	09	---

 Source: Agricultural Division - Project Office, System
 'C'.

The lack of confidence among farmers, inadequacy of extension services, and unsuitable soils, are the main factors contributing the persistence of paddy monoculture. Small farm productivity in irrigated areas depends to a great extent upon the suitability of soil types for the crop selected. Table 10 shows the percentage of land classified for paddy as against other cash crops in System 'C' under the Accelerated Mahaweli Programme and compares with the situation in three other systems. System 'C' has the lowest irrigable area suitable for paddy farming. This means that high-level of paddy production cannot be expected from about 75 per cent of the land area in System 'C', even if the entire area were used for paddy farming. On the other hand, about 10 per cent of the land is categorized as highly suitable for upland crops, which underlines the limited possibilities available for changing from paddy in System 'C'. Irrigation development in this part of the Mahaweli originally involved destruction of high-value rain

forest and conversion to an irrigable area, which, as the above data show, was only marginally suitable for successful cash-crop farming. In the same manner, one of Sri Lanka's best natural environments and tree-crop plantation areas, known as the Dumbara Valley, have also been lost due to the construction of the reservoirs.

Table 10. Percentage of Land Classified for Paddy and Upland Crops

System	New Cultivation Areas (Hectares)	1 R	2 R	1 U	2 U
A	14000	67	16	07	05
B	31300	30	40	15	15
C	19550	25	40	10	25
D	15950	50	20	25	15

1 R - Highly suitable soil for paddy

2 R - Moderately suitable

1 U - Highly suitable for Upland Crops

2 U - Moderately suitable for Upland Crops

Source: World Bank Report on Mahaweli 1977

When all these factors are taken into consideration irrigation development itself manifests a gloomy picture of ecological and economic disaster, unless and until family farm productivity is raised to offset these losses. Selection of profitable crops for farming under well organized crop diversification systems would, it seems, be the best method of raising household income, but, as I have argued, it is difficult to achieve given the poor quality of soils in System 'C'.

Dr. Walter Abeygunasekera, Former General Manager of the Mahaweli Development Board lays out the whole gamut of the problems as follows:

"As the majority of settlers were new to irrigated agriculture, more especially to irrigated production practices of other field crops (OFC) on upland soils, the design envisioned the provision of a highly intensive and experienced extension service, initially with the appointment of one extension agent for 250 families with close linkages and strong technical back-stopping by the Department of Agriculture, with special emphasis on research and education activities centered at Maha-Illuppallama. Extension agents have had little exposure to the technology of irrigated production of OFC which requires precision knowledge in land preparation, on farm irrigation, and irrigation layout, specialized knowledge on Water Management of individual crops, irrigation methods, frequencies and quantities, aeration status of the root system in relation to drainage, technically feasible agronomic systems of multi-cropping, inter-cropping and relay cropping to optimize production, storage and processing methods etc. However, research addressed sufficiently to the wide spectrum of needs, problems and expertise required to improve cropping patterns and cropping intensity of farmers in order to produce more efficient and effective techniques for management of land and water resources are necessary. My experience says that the answer is probably in the negative. Farmers are selective in accepting advice rendered by most extension agents" (Abeygunawardena, 1986).

These issues are becoming crucial in System 'C' since alternatives are limited. All settlers in the three units studied have cultivated paddy from the inception of the

settlement. No attempts have been made to grow OFC on irrigable lands. Irrigation water is being provided only for paddy farming and has become the major interest of rural producers.

Before concluding this chapter it is important to stress that the income of small-scale paddy holdings does not only depend on soil quality but also on many other technical factors, such as the proper levelling of land so that all plants grow standing in water, as well as the timely and routine application of manufactured chemicals such as fertilizer, weed killers, pesticides etc. Given these complicated agronomic conditions, the role of state agencies becomes crucially important in recognizing and researching the complexity of different farming situations and in taking full account of farmers' perceptions, expectations and strategies. Many of the problems outlined in this chapter arise from the unwillingness of government personnel and institutions to seriously address themselves to these issues. But, more importantly, they reflect the inherent contradictory tendencies of large-scale settlement development based upon top-down planning methods.

The purpose of this chapter has been to explore the possibilities and limitations of uniform family farm settlement in the Mahaweli Scheme. A central aim was to show how discrepancies in the physical, locational, operational and socio-economic structures have contributed to the local problematic of planned intervention. I also explored the incompatibilities between the Mahaweli model of development and the interests and realities of different farmer groups. It was argued that the reasons put forward by intervening parties in justification of their intervention goals and

strategies are questionable when farmers' own social practices, images and social forms are taken into account. These latter must not be seen simply as making up the complexities of the empirical context in which intervention occurs, but as shaping in a significant way the form that intervention practices and processes take. In this regard, two fundamental dimensions are central: a) the clash between the official government model, which explains the rationale and underlying concepts concerning the delivery and distribution of project resources, and the individual strategies and interpretations of local officials who are responsible for the implementation of the model; and b) the power and influence which individual farmers and groups of farmers exert over the kinds of intervention strategies devised by local officials in their day-to-day struggles and work. These two aspects are explored in detail in the next two chapters.

Notes

(1) The average size of plot in previous settlement schemes was about two hectares. This was further reduced to one hectare under the Mahaweli Settlement scheme, without taking into account the problems of the second generation.

(2) Demographic, social and cultural differences among settlement families became a major constraining factor in the process of implementing this uniform family farming system.

(3) Unlike Mahaweli settlements, cultivation activities in the traditional villages were undertaken by the villagers collectively, under the guidance of village leaders (gamarala), and in accordance with established customs. For example, those in the lower reaches were allowed to take the first delivery of irrigation water, followed by others moving from tail-end to top-end (Hewavitharana, 1973:8).

CHAPTER FOUR

ORGANIZATIONAL DILEMMAS AT THE LOCAL-LEVEL AND STRATEGIES OF FIELD OFFICERS

This chapter examines the strategies, attitudes and behaviour of local officials in the Mahaweli settlement units. In this way I attempt to depict the reality of the social life of UMs (local field officers). In the first part of the chapter, I explain the "theory" of planned intervention, in which the procedures, rules, tasks and responsibilities of local officials are laid down. In the secondly part, I analyze the practical problems of programme implementation. I show how the work and effectiveness of field officers are affected by the external constraints of the institutions to which they belong and by the internal struggles of the farming population with which they interact. Thirdly, I discuss the failure of local officials to take intervention initiatives that fall in line with the exigencies of the top-down authority structure. Finally, the behavioral patterns of local officials are analyzed from an emic point of view in order to understand their role in the social construction of ongoing social processes. Thus I argue in this chapter that, in their confrontations and interactions with farmers, local officials come to form part of the social reality of local processes and not just part of the "project" as defined by the Mahaweli Settlement Authority.

In the previous chapter I dealt with family farm settlements in general and outlined the myriad of socio-economic complexities that contribute to, what Mahaweli officials call, "management problems". Furthermore, I argued that family farms exhibit a heterogeneous pattern of development generating different patterns of response and change. In order to understand the dynamic and emergent characteristics of these different processes, our analysis should now address itself to critical points of linkage or entrée into local arenas. These critical points are likely to be found at the settlement unit level, since it is here that farmers and intervening parties (particularly UMs) meet, negotiate, and interact in an effort to realize their own goals. In so doing, they contribute to the crisis of intervening organizations.

The implementation of planned programmes depends very much upon the reliability and accountability of local agents. However, their effectiveness and work discipline cannot be guaranteed by top-down management strategies based on rules, procedures, and reporting to superiors since control from above is possible only under a reliable and accurate information flow from below.

As I will elaborate in this chapter, this information flow is controlled, manipulated and distorted by local actors in pursuit of their own goals. This obstructs domination from above. The control and administration of a large number of local officials and their activities is largely based on general circulars in the form of written instructions. These instructions are formulated on the assumption that all local officials carry out equal tasks, face similar problems and respond in a common way. However, as I explained in the previous chapter, the

diversity of producer groups, and conflicting interests and discrepancies relating to the distribution of resources, generate different types of local problems for UMs. A top-down management system cannot address itself to such diversity; and it is this weakness of the centralized management system of the Mahaweli that creates space for local officials to work out their own local solutions.

A related point is that local officials, the bottom layer of the institutional structure, are far away from the Mahaweli Authority in Colombo. Their links are maintained through a communication system based upon follow-up reports, monthly returns and the keeping of field records. But they live with the farmers and regular face-to face interaction with them is unavoidable. As one UM explained:

"with regards to our day-to-day problems, farmers who are waiting in front of us are much more important than the orders we receive from our Head Office".

Because of this practical situation, UMs have to separate the internal and external dimensions of their intervention practices. The internal dimension is a more dynamic process which involves day-to-day interactions and negotiations with farmers and other local actors. The external dimension involves dealing with high-ranking officials and providing written information. In this chapter I will discuss the organizational dilemmas of UMs and show how they contribute to the patterning of social relations with clients that entail negotiation, bargaining and resistance. I will also explore how planned intervention is retarded by the more dynamic and

pervasive characteristics of relatively small-scale 'minor' processes.

Understanding the conditions under which farmers manage their own livelihood problems is important for several reasons:

a) A well-designed top-down management system is severely affected by struggles over the utilization of project resources at settlement level between field staff and the large number of farmers.

b) Since farmers' behaviour, strategies and claims vary considerably, the implementation of policies through a unified administrative structure becomes difficult. Thus a gradual separation of local actors' activities into their own "internal world" has led to the bureaucratic and political failure of official attempts to develop Mahaweli family farms.

c) Field-level officials of the Mahaweli management hierarchy are compelled to alter policies and programmes. They deviate from the main goals of the Mahaweli Authority because they are forced to get involved in a diversity of tasks in an attempt to resolve the conflicts between them and farmers. Although administrative control and supervision of the agricultural activities of settlers has been strengthened, the interaction between the parties in the settlement units cannot be effectively manipulated by central authority. As a result, it is difficult for the Mahaweli authority to attain the goals it sets for itself. It is this crisis point that gives room for farmer resistance and for the emergence of other kinds of farmer strategy.

Settlers' work in the Mahaweli is supposed to be guided

or "directed". This "directive" approach is characterized by a framework of centralized control and administration by which management objectives and the means of achieving them are established by government or the sponsoring agency. All major decisions and the overall organizational framework remain firmly in the hands of state officials or representatives of the sponsoring body. Thus the state, through its official agents creates the main organizational framework for the use of technology, the management of agricultural inputs and credit, and for marketing. In addition, Government statutes and regulations define the precise criteria for membership of the project, the rules for allocation of land and water, and the parameters for the distribution of returns obtained on production (see Long, 1980). However, explicitly formulated intervention plans cannot work out in practice because not only farmers but also local officials themselves manipulate intervention activities in line with their own realizable goals.

In this context it is important to study how a centrally-planned settlement programme comes to be implemented by its local-level agents in accordance with their own interests and local circumstances. Furthermore, although technical and management know-how is brought in from outside to handle the socio-economic problems of the settlers and to combat trends, such as the sale or leasing of land, there is no assurance that the packages (material and services) will be introduced in accordance with the needs of farmers. This lack of fit between external inputs and local needs and practice makes it difficult for the official management system to replace some of the fundamental elements that enable individual settlers to choose and act in their own life-worlds rather than simply following recommended practices. Also,

in order to understand how external management becomes involved in crises at local level, it is necessary to study the organizational problems in the settlement units that result from the resistance and differential responses of farmers themselves.

Management Structure; Theory and Practice

Figure 2 (A) and (B) below indicates the delegation of power under the Mahaweli Economic Agency (MEA) at three levels which are vertically interlinked in a semi-autonomous manner. The main body of the Mahaweli Authority has general responsibility for settlement development and management, and the Resident Project Manager (RPM) overall control of the System 'C' of the Mahaweli Settlement Scheme. The Block Manager (BM) is entrusted with about 2000 settler families comprising about 8 to 10 units of settlement. Each Unit Manager (UM), who reports back directly to the BM, has about 250 families in his unit and on him devolves the total responsibility of unit organization relating to the agricultural, administrative, economic, social and cultural activities of his unit. The UM is allowed one Field Assistant who is expected to have basic training in agriculture, and who takes the onus of the entire unit in his sphere of work. This permits the UM to avoid some of the occupational hazards of the lack of co-ordination and divisional conflict. It is the duty of the UM to function as the sole representative of the Mahaweli service and to oversee the allocation of land, irrigation water, credit facilities, health assistance and other related basic amenities, and also to undertake to resolve all settlers' conflicts. The UM is also expected to show such as

Figure 2 (A)

Organisational Structure of the Mahaweli Settlement Management - System 'C'

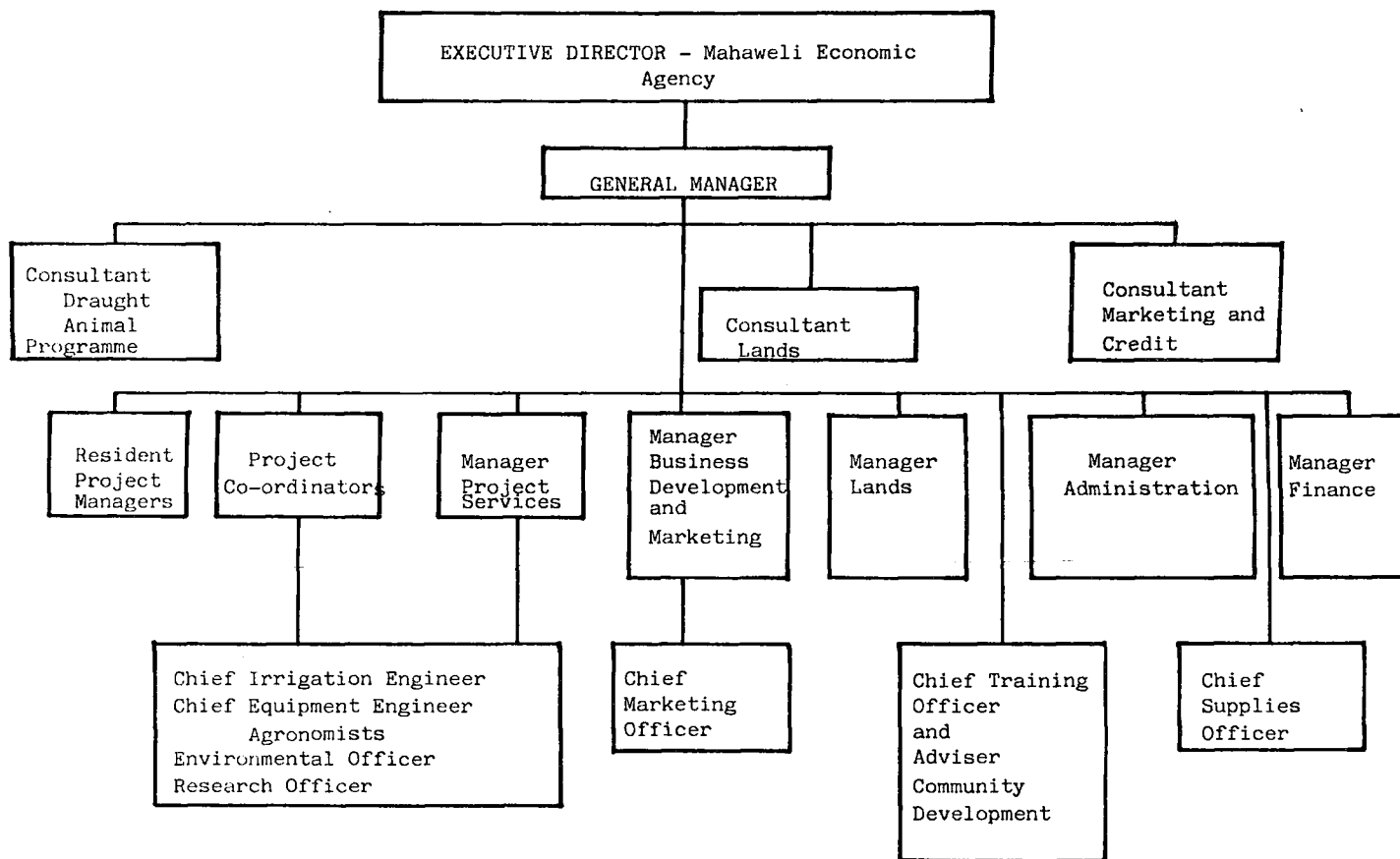
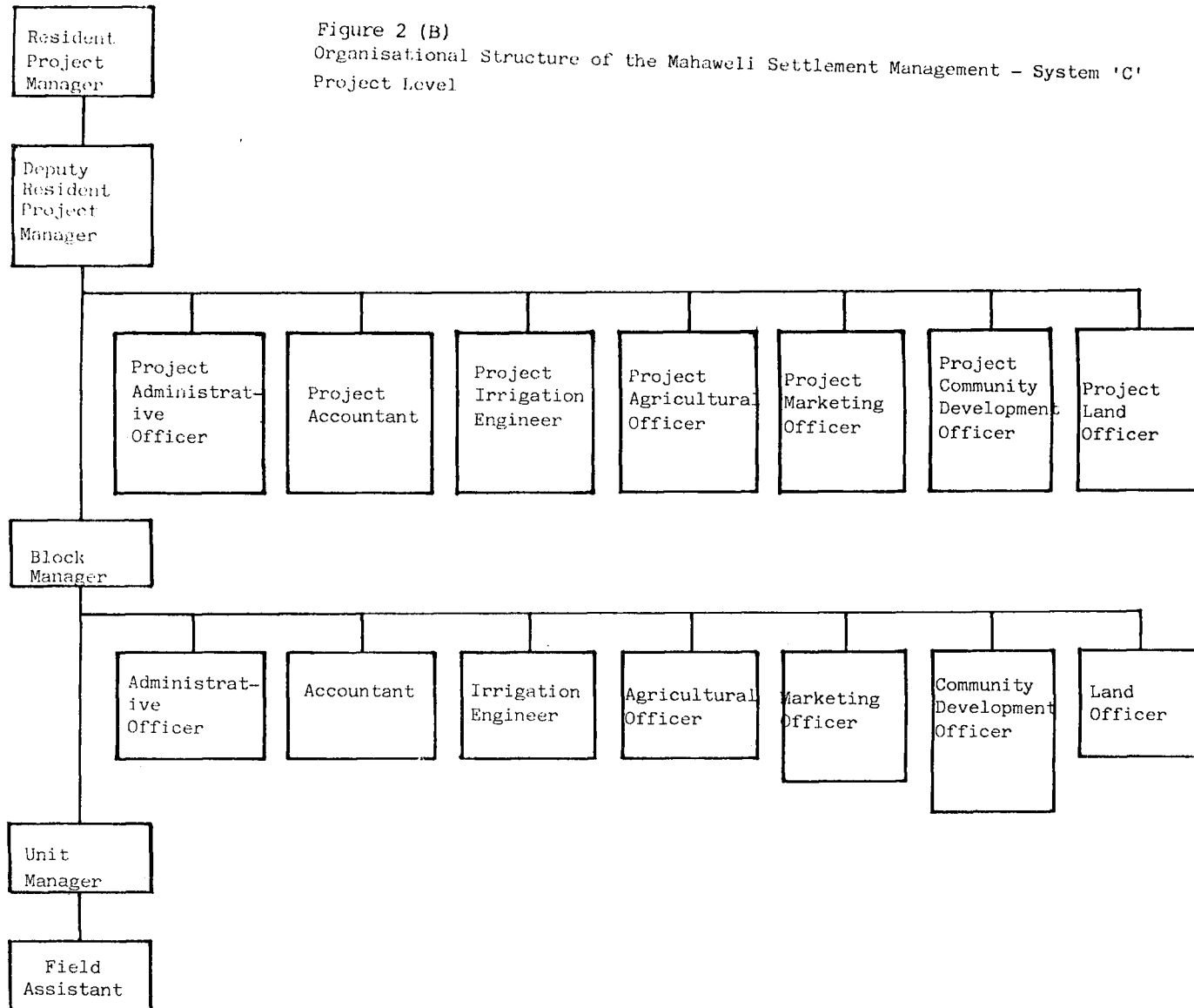


Figure 2 (B)
Organisational Structure of the Mahaweli Settlement Management - System 'C'
Project Level



dedication, commitment, responsibility and paternalism which it is assumed will result in high levels of agricultural production, social involvement and co-operation among settlers.

Tasks and Responsibility of Unit Managers

Within this bureaucratic structure, it is the UM at the settlement unit level, who plays a central role in transforming state policies during the process of implementation. The settler/UM relationship is intended to encourage or compel settlers to accept the latter as their undisputed leader since he is expected "to lead more by example than by precept". If this works then it is supposed that he will enhance the authority of the policy makers and decision takers in the MEA. The most important aspect of unit management is the type of social relations that the UM builds with his farmers, and his ability to establish smooth working relations is judged by the level of farmer participation in production and development activities, as well as by the farmer's willingness to accept external agency instructions. Finally, he is supposed to be their closest friend and supporter. This means that a UM should be able to explain to the settlers what is expected of them in the programme at hand and what the benefits will be and to persuade them to participate accordingly. After being given a work task and a monthly salary, it is simply assumed that UMs will perform their tasks as expected. With their confidence in the Unit Management System higher management officials believe that settler administration at the field level is well geared to the development goals of the Mahaweli Settlement Scheme.

Practical Problems at the Level of Implementation

However this process does not happen in practice because:

a) The UM is committed to conceiving and organizing his field activities according to the demands and problems of settlers and yet, at the same time, also has to perform duties within the existing administrative system and is expected to further the interests of the external institutions. Thus he faces difficulties in dealing with the wide-ranging and flexible problems and demands of settlers within the rigid framework in which he is expected to function. This type of rigidity involves not only the clearance of formalities but also responding to outside instructions.

b) Although the structure was established to include many layers of state bureaucrats, the required flow of government resources to the local level through this structure has been grossly inadequate. As a result, local officials have to re-adjust their activities and strategies to take account of the very poor external supply of resources and the high local demand for them.

c) Local-level officials cannot keep within the policy framework of settlement development since there are many loopholes in the system of policy implementation and its supervision.

d) The relationships between various social groups and local officials do not follow a uniform pattern. Under prevailing resource constraints, local-level officials cannot maintain a sufficient financial and social status to attract the affluent group of farmers; and some are compelled, or choose to develop an alliance with the poor

rather than with the better-off farmers.

External Factors Influencing the Role and Attitude of Local Officials

The UM's efficiency and performance is influenced by three basic factors: (a) the attitudes and expectations of his superiors; (b) his own domestic pressures; and (c) settlers' demands. The attitudes of the UMs' superiors also reflect on the use of power within the bureaucratic structure. The state structure cannot be viewed as a unitary mechanism operating in accordance with some dominant class interests; rather its local-level operation is influenced by various specific factors, such as the social characteristics of the field officials, the nature of the socio-economic environment and the circumstances of different localities, and the negotiating and resisting capabilities of farming households. One should not assume, therefore, that within the hierarchy of management, officials play a passive role, only carrying out the instructions of their supervisors. Unit managers are important intermediary actors between farmers and the Mahaweli Authority and organize their activities to suit different situations and changing circumstances.

Theoretically the Mahaweli Settlement Authority at the Colombo Head Office level has both the necessary political and statutory powers to reward performance in support of the stated objectives of the Authority and to take punitive action against those who obstruct their achievement. But, in practice, these rules remain ineffective due to difficulties in making correct assessments of what is actually happening at local level.

Indeed, sometimes, the recording system is viewed by local officials as a corrupt system of political and personal favoritism which leads to the weakening of vertical links and relationships. However, there are several groups that can influence policy objectives and practice in Government-sponsored settlement schemes. These are institutionalized political and private sector interests which exert some degree of control over the inclusion or exclusion of specific items on the agenda for public action (Hulme, 1987). And it is the conflicting interests of these power groups that often influence various actors at the settlement unit level to react differently.

Within this set-up, a Block Manager who supervises a number of UMs can demonstrate to his subordinates a considerable degree of, what they might consider, as the irrational and arbitrary application of power expressed in forms of social control. This has a demoralizing effect on UMs, making them either fearful of taking initiatives or frustrated. However the Settlement Authority is often unable to achieve its goals, or to detect the officials responsible for such failures, because it is faced with the more difficult task of establishing control over the entire bureaucracy, particularly the UMs and other officials at the field level. Thus resistance comes not only from the farmers but also from the bottom layer of the state structure itself.

As the Unit Manager of U111 stated:

"It is a matter of preparing the field environment (up-to-date field notebooks, required statistical and progress reports, and some hand-picked farmers

to provide information etc,) in order to relate positively towards the randomly selected supervisory actions of the Block Manager. It may perhaps have nothing to do with our actual work in the field. It can be a highly exaggerated interpretation of the reality; or, it can even be a wrong opinion. Yet, whatever it may be, I must be very careful in my response to the BM's inquiries during progress meetings with the Mahaweli Authority"

The UM, who is expected to conceive and organize the activities of his particular settlement unit, is constantly under the constraints of his external supply agents or is subject to pressures and obligations due to the political patronage he has received. Some examples are as follows:

According to the UM - U1, he was given instructions by the BM to take legal action against the encroachers of a land reserve in his settlement unit. He followed this order and removed five encroachers from the settlement. Since then environmentally important reservations of land could be protected. But after a few months there was a political decision to move 22 additional settler families into the settlement unit. The UM was reluctantly compelled to settle them in the land reserve. As a consequence, many settlers began to encroach areas reserved for forest plantation and canal improvement. They simply ignored the UM's instructions as well as the several regulations.

According to the records of the UM-U11, all the UMs were requested to punish people who extracted timber from the settlement. Thus about 32 illegal timber extractors (until the end of 1986) had been arrested by the police.

However, under the permission of the local MP, some businessmen were allowed to cut timber in selected locations in the settlement unit. The ultimate result was that illegal timber extraction in the settlement had increased beyond control. The officials themselves were involved in this business.

Under this push-pull set-up the UM has to be very agile in the performance of his duties. Theoretically, the unstinted co-operation of a BM and close working alliance with other UMs will not only help in solving inherent problems in the unit but also motivate and facilitate the efficient operation of the Unit Management System. But, in practice, quite the opposite can happen depending on the types of response and farmer resistance in the settlement units. In resolving his problems and disputes, the UM cannot impose authority or work according to formal instructions because the necessary resources for the implementation of his programme are hardly ever at his disposal. Therefore, a UM who is initially dedicated and loyal will reluctantly be compelled to take evasive action to avoid undue blame from his immediate superior, the BM. Due to various external factors and constraints, the number of problems actually solved by the UM is extremely low. The main reason for this is the very poor supply of resources by external institutions. Moreover internal quibbling and the different attitudes of BMs leads to the internalization of settlement unit level activities independently from those of the Block level and above. It would seem, therefore, that the functioning of the bottom layer of the state structure is more susceptible to influences from below rather than from above.

Internal Circumstances Constraining the External Relations of Local Officials

As I argued above, the state's attempt at incorporating local actors into the planned settlement programme often works against itself since its local agents are not sufficiently equipped with the material and financial resources to challenge the ways in which settlers coordinate their activities in their day-to-day situation. It is misleading, therefore, to speak of the logic of transformation not only because all conditions are able to be transformed, but also because of the alterations that are made by intermediary agents who develop strategies for keeping superiors away from the realities of farmer behaviour.

The fact is that the system has never worked as it was conceived. There are breakdowns along the line and local officials have to face the consequences. However, they have found a way to survive. Paradoxically, all forms of dependence on external institutions introduced into the Mahaweli Settlement provide some access to local transactional processes with farmers. This enables local officials to influence to some degree the activities of farmers, and in some cases to assist the poor farmers to reduce or eliminate such dependencies. It is in this respect that a careful study is required of the strategies developed by the actors of the bottom layer of the state structure and how successful they are.

An important internal factor that contributes to the effectiveness of a UM is his own domestic commitments through pecuniary involvements. The socio-economic condition of the UM, particularly his low pay, leads to financial pressures from the domestic front due to his

responsibility towards his kinfolk who are usually dependent on his earnings. Most of the UMs come from lower income groups with large families and the financial strain is evident in the performance of their duties. Therefore, their economic and social status itself is an obstacle to the development of relationships within the bureaucracy and with certain categories of farmer.

Every UM is provided with a motorcycle, whose cost is deducted from his salary in monthly instalments. This, together with other loan deductions, such as those taken for his university education, make up about 25% of his monthly wage. The UM, therefore, receives approximately Rs.750/- to Rs.900/- net salary per month. If he is married and has children and/or other family dependants, then he cannot possibly exist on this wage. This leads him to seek other avenues of income to make up the family budget deficit. Such activities are invariably nefarious and indirectly related to his job, and may lead to bad management or the misuse of power for his personal gain. This situation contributes to a practical consciousness among farmers that motivates them to avoid being linked into the local settlement bureaucracy and to by-pass it whenever possible. At the same time, rich farmers come to realize that the UMs are not a privileged and resource-rich group of state bureaucrats who could help them.

Another administrative deficiency is the fixed monthly transport allowance of Rs.750/- for all UMs, without consideration of the actual travelling distances involved. For example, a UM who lives in close proximity to the Block Office and Main Development Centre may be content with this allowance of Rs.750/-, but not those who live farther away and who have to maintain constant liaison with their superiors. The latter will find this

allowance quite inadequate for carrying out their workloads which are also likely to be far greater than that of a UM living at the main center. The end result is that the UMs work suffers, the reports filed are grossly incorrect, and this becomes a deterrent to the implementation of specific tasks, and also affects officially expected outcomes. The average number of occasions that each UM travelled to the Block Office and Main Office in 1985 were as follows:

<u>Monthly Official Tasks of a Unit Manager</u>		
1985		
Purpose	No. of Occasions per Month	Place
-----	-----	-----
Progress Meeting Office	1	Block
Block Meeting Office	4	Block
Follow-up Meeting Center	1	Main
Agricultural Meeting Office	2	Block
Emergency Meeting Center	2	Main
Emergency Meeting Office	2	Block

(Source: Block Office Records- Batalayaya).

In addition to the above meetings and discussions, a UM should play the role of data collector for various purposes at the Project and Head Office level. In fact, he has to submit about 8 to 10 reports per month regarding the activities of his unit. Some of these reports have to be prepared on a regular basis such as the (a) Implementation Programme, (b) Extension Service Programme, (c) World Food Aid Distribution Records (d) Evaluation Reports, (e) Crop Insurance Reports, (f) Credit Disbursement, (g) Sanitary Facilities, (h) Land Problems, (i) Health, (j) Population and (k) Yield and

Production.

The MEA administration in Colombo and its officers responsible for the various aspects of settlement development insist that the UM meets his deadlines in submitting the reports which should enable them to formulate their own departmental tasks within the Ministry and the Mahaweli Authority. These reports are an absolute necessity to the Mahaweli Authority upper echelons since they allow them to put forward their own claims to various foreign agencies for funding of the Mahaweli Scheme.

Though the submission of reports is considered a necessary evil, it is done at the cost of the UM's activities in the field, which, if neglected, create a derogatory and reluctant attitude among settlers. It is such a situation that various internal problems are likely to crop up involving resistance, conflict, and struggles between different local groups which the UM is obliged or committed to resolve. The UM in U11 gave his opinion on this problem which, though uttered in a light vein, has great relevance to the situation:

"Our senior officers who hibernate in plush airconditioned offices in Colombo occasionally feel that the natural country air would be a welcome change. So they visit the settlement on a given date on the promise of "briefings". These "briefing" are time consuming and not applicable in any way to the settler as he is not literate enough to assimilate any part of the briefings forced on him via the UM. In this situation I feel that those "bushman's holidays" by the Head Office Superiors are highly detrimental to the settlement as the time used on

these briefings could have been used more gainfully on the settlement itself".

Provision of irrigation water and land is the main objective of the Mahaweli Irrigation Project. But at the level of implementation these are scarce and divisible resources to which settlers are supposed to gain access through a bureaucratically-regulated process. The mechanism created is such that while access to water and irrigable land may be granted to some, such as the settlers in U1, it is at the same time denied to others in the periphery because of the impossibility of meeting their demands. This leads to a major defect in the supply of resources, and to the malfunctioning of the inner layer of the state structure where resistance by local level officials takes the form of a lack of responsibility, initiative and dedication to the given tasks. This is also due to the fact that, despite discrepancies in the nature of work and in the types of problems that arise in each settlement unit, all UMs are equally paid and the criteria for promotion or handing out rewards are mostly based upon political and personal interests of higher-ups.

According to UMs, field work and office work are two different tasks and sometimes contradictory. But they may use the existence of these two tasks to create room for manoeuvre. For example, when they are charged with unsatisfactory field work, their explanation is that they have too much office work; and when their reports are delayed, then their field notebooks will indicate that they have too much field work.

This type of organizational dilemmas in the institutions set up by the government not only minimizes the

effectiveness of local level brokers but also leads to a breakdown in the alliance between them and their superiors. Moreover the relations that develop between local officials and settler households are influenced by these conflicting relations between superiors and local officials. Understanding these organizational processes is important also for the way in which these circumstances influence farmers to organize themselves.

Another discrepancy is the allocation and size of settlement units in respect to different UMs. While some units comprise less than 200 settlers, others cover as many as 300. This serves to emphasize that the greater the number of settler households the greater the problems relating to field canals, water inlets and volume of water available to a unit. Thus one defensive strategy used by UMs is to concentrate on the minor problems, while the major ones are left unattended.

Within this complicated settlement situation there are different attitudes, values, and interests governing a UM's individual strategies in the settlement. The career of a UM, therefore, is not dependent on the salary he earns but on the ways he manages these different local processes.

According to the experience of many UMs, they are uncertain about their future prospects. UM/U1 expressed his doubts concerning the future prospects of his occupation in the Mahaweli Scheme:

"Funds of the Mahaweli Scheme are deteriorating-foreign aid will be further reduced in time to come. Since the cost of operation and maintenance is very high, there can be further setbacks in the

facilities provided at the UM level. Therefore it is important to get the maximum out of the present opportunities and we should try as much as possible to gain whatever economic benefits are available".

With this type of attitude some UMs take initiatives to manipulate intervention activities directly in accordance with their own personal interests. And such emotional and negative responses of UMs towards intervention models and ideologies have a considerable impact at the level of policy implementation. This shows itself as a strong local tendency which runs counter to the broader tendencies of development expected by planners. Paramount amongst the attractions of state-sponsored settlement from a bureaucratic stance is the support that settlement initiatives provide for keeping the office going. They provide a means for the maintenance and often the expansion of the public services. However, there is the constant threat that new bureaucratic sub-empires, built with large amounts of foreign assistance, will not survive and that the activities of the Mahaweli Project in the future will be more limited. Hence, in order to eliminate job insecurity, a new concept of settlement development was proposed by one UM who argued that:

"It may be useful for the UMs to keep up a certain level of social conflict at the unit level in order to create a situation more favorable for the UMs' own survival. If the farmers are kept away from programme implementation their incapacibilities can be proved. Then the service of the UMs will be needed further for the reorganization of activities of the settlement unit".

Thus the UM creates the self-fulfilling prophecy that he

is indeed essential to the successful operation of the settlement programme. On the other hand, his job becomes redundant if his settlers do not accept his work. It is interesting in this context to note how UMs distinguish between so-called "fortunate" and "unfortunate" postings or appointments. According to them, attitudes towards these two categories and the circumstances they entail can be depicted as follows:"

Fortunate" Category

1. Service as an UM will be started in a new settlement unit which involves preliminary work. At this stage new settlers have to depend heavily on the UM for basic assistance in settling and making a living, and the UM's function is that of a good social worker who distributes free inputs, materials, financial assistance, health and housing services. He helps and guides the new settlers and thus becomes very popular among them.
2. He can engage himself in other income-earning ventures that are readily available such as canal and road construction, transport service, and the timber business.
3. The pressure from above is minimum if the UM works under an active and friendly Block Manager.
4. It is advantageous to shift to another unit before the first delivery of water. The unit he takes over should be located at the top end of the canal structure, so that he can escape from water disputes and irrigation problems.

5. During the dry season, cultivation can be continued without irrigation water problems. Thus farming is possible throughout the whole year.
6. Farmers in the unit are efficient and obedient and management is easy.
7. It is better to be located closer to main roads and the Block Office.
8. One should produce impressive production data and progress reports about family farming in the unit.

"Unfortunate" Category

1. Service will be started from a unit where first delivery of irrigation water for cultivation is taking place. Numerous problems relating to water distribution, land levelling, and canal defects will be brought to him by settlers who expect the UM to solve them immediately. He is unable to solve irrigation problems and the resultant criticisms from the settlers makes him unpopular.
2. Settlers are always after the UM to get their water and land problems solved. Therefore no time is available for private work and additional income sources are limited within the unit area.
3. If one works under an inefficient and despotic Block Manager, who often blames, the UM's one's capacity to solve problems at the unit level is limited, and so there are pressures from both ends.

4. If there are no possibilities of changing the unit or taking over a unit at the tail-end, the same problems and conflicts concerning water management continue.
5. During the dry season water distribution becomes a serious problem. Social conflict and water disputes increase with detrimental consequences for farmers.
6. Farmers are not efficient and do not follow the UM's orders, but complain against him to the higher authorities.
7. The location is far away from main roads and the Block Office, and so transportation is difficult.
8. Finally, with bad records of farming and production and increased conflict within the unit one becomes an "unfortunate" UM.

The above categorization, based on the opinions of UMs, illustrates two extreme situations in which a UM becomes trapped in the process of field-level interactions. Disappointment can curtail the activities of a UM in a divisive unit and can also affect his attitudes towards his job prospects. Initially, at the commencement of his career, the young UM is like the proverbial 'new broom' that sweeps clean. All the work assigned to him at this experimental or probationary period is undertaken and executed with gusto by the unmarried UM. Problems at grassroots are sorted out and solutions attempted, since at this stage he looks to himself and is not yet fully aware of the limitations of the administrative machinery.

In fact a new UM is often misled about the smooth operation of top-down intervention promoted by policy makers and top-level bureaucrats of the Mahaweli Authority who give simplified 'briefings' on policy objectives and implementation strategy. For example, they paint a picture that settler families, settlement units, and blocks are generally homogeneous with equal resource endowments for settlers. Thus the management capabilities required and the nature of the problems to be managed are uniform. However, when the UM mellows with his job, he begins to appreciate the daily bottlenecks and has to circumvent their socio-economic ramifications. Observing their seniors, or through their own trial-and-error methods, they begin to slacken their momentum and choose the most suitable tactic of manipulating the administrative machinery to suit their personal ends, thereby off-setting management difficulties and economic losses. Disappointments of unit management at a later stage of job experience influences the UM to incorporate new thinking into his organizational strategy. Some features of this thinking are as follows:

- a) Tasks oriented to hard work without recognition and without resources do not bring job satisfaction.
- b) It is easier to be the working partner of superiors according to their interests and to leave the settlers with their own problems and way of living.
- c) Concentrating on solving the shortcomings of the infrastructure is time consuming, which time could be spent on more gainful personal enterprise.
- d) Maintaining silence is a better solution for settling problems than raising a hornets' nest about them.

Table 11 illustrates the types of additional income-earning activities of the three UMs showing their priorities:

Table 11. Extra Sources of Income for the UMs: order of priority

<u>Activity</u>	UM 1	UM 11	UM 111
Building and canal construction business	1	1	2
Leasing farmers' land	0	3	1
Marketing of farm products	3	4	0
Hiring out of tractors and other implements	2	0	0
Money lending	4	2	3
Trading (including timber)	0	0	4
Others	0	5	5

Key: a) 0 = not applicable

b) The numbers are according to the priority given by each U.M.

c) Activities are carried out under pseudonyms

d) Corruption, illegal business, and commission are not included.

e) In a settlement unit, most of the household requirements of a U.M. are provided by the settlers. This includes the supply of free labour, vegetables, fruits, grains and other gifts (for more detail, see the next part of this chapter).

(Own Survey, Maha(Wet) Season, 1985).

At this phase the UM looks for a suitable marriage partner; and, if he is already married, for extra income for tending infants, building a new house and purchasing

consumer durables. And so he comes to feel that his time is better spent in this way than in trying to eradicate officially identified grassroots problems for agricultural development.

There were many reasons given by the UMs for their involvement in additional income-earning activities. These reasons are shown in the following table:

Table 12. Reasons for Additional Earnings of the UMs

	UM 1	UM 11	UM 111
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1. Economic crisis in the family and lack of income	no	yes	yes
2. To gain future economic security	yes	no	no
3. Job insecurity and frustration	yes	yes	no
4. To maintain a high social status	yes	yes	yes
5. For children's education in reputable schools	yes	no	yes
6. If many others are involved why shouldn't we?	no	yes	yes

Source: Own survey, 1985 Maha(wet) season.

Intentions and Strategies of UMs as Intermediary Actors

Although Unit Managers play a leading role as intermediary actors in the settlement units their experience has not been given sufficient attention in existing settlement studies. However, their role in the

process of distributing project resources, goods and services as well as in regulating and withdrawing such resources or penalizing certain farmers, is crucial for understanding the differential responses to state intervention. Diversity in the operation of an apparently uniform state structure takes place at this very important interface between implementors and their peasant 'clients'. Moreover since state policy on Mahaweli family farm settlement hardly supports or allows members of the locally-dominant class to establish capitalist forms of production in accordance with their own interests, it is only through a coalition with local-level bureaucrats that they can maintain their economic and social status. One might assume, therefore, that UMs would become a powerful social group capable of manipulating public resources in favour of the dominant class. However, in reality the UMs represent an intermediary structure which operates within the constraints of the farmer-state structure. Hence it is important to recognize the various limitations placed on them in adopting bourgeois behaviour and alliances. What, then, is exactly the status of UMs in local social groups and the class structure? Can they actively maintain a dominant class coalition in the process of family farm settlement development? What strategies do they adopt internally for their own survival in the settlement units?

In order to answer these questions it is necessary to open a window on the reality of social life of UMs (local officials) and observe how they process social experience. Once UMs are settled among farmers as external agents of local field stations, intervening agencies expect a robot-type of behaviour from them in order to develop more unitary discursive means for

decision making. But, in reality, UMs cannot play such role when their local field stations are surrounded by farmers and everyday encounters and types of discourse based upon the problems of survival. Their activities and objectives are influenced and affected by human and social contacts and events. Therefore UMs' behaviour, evaluations and interpretations of social life are dependent upon their social location and social practice.

The Significance of Social Factors Influencing UMs' Lifeworlds

During discussions with the UMs an attempt was made to record their answers to questions of this kind. On the basis of in-depth, informal discussions, I came to appreciate UMs' perceptions and explanations on what they call "their internal world" ("ape abyanthara lokaya"). Indeed they had their own opinions on almost every issue of settlement development. Among these, explanations of the settler-UM relationship were the most revealing. As an implementor of policies, the UM often explains this relationship in terms of an unavoidable set of measures taken in the settlement under changing internal and external circumstances. UMs argue from their own practical experience. The local situation they face is not conducive either for favouring better-off farmers in the allocation of project resources, or for manipulating resources in such a way that poor farmers gradually lose their means of production.

The three UMs who were closely associated with me during the field research had their own understandings of general political and social problems. They had each been involved in various struggles during their university

life, and two of them came from to poor peasant families. According to UM-U11, Mr. Jayasena, the seven members of his natal family had only one acre of agricultural land between them to provide for a living:

"During my university education my parents had a very difficult time. My father had to pawn all the jewellery of my mother and sister to pay for my education. It is true that the free education policy of the government made it possible for me to enter the university, but my basic living expenses were the problem. During this period I gained much experience from the difficulties of my own family. They doubled their labour input on sources of income and worked hard to keep my education going. At that time they had the capability of managing any difficulty that arose and sacrificed any aspect of their household living. When I went home during the university vacations they always behaved quite normally, although they suffered a lot."

According to him, this experience was important because when he came to the Mahaweli Settlement after university he felt that he was living again in his own family environment and this had a great influence on his work with the farmers. In 1972, the Government took over the excess lands of several landlords in his village (Kandeketiya, a village in the Central Province) under the new Land Reform Act and allocated to this landless people. His family also received a small plot of land (one acre) under the Village Expansion Programme. (Before this his family lived as landless tenant farmers). Since then the landlord, who had owned the land before the Land Reform, has not been on good terms with Jayasena's family. Another problem was that the landlord's children

had failed to educate themselves well, whereas Jayasena from a poor family had entered the university. As a result, the landlord often blamed the Government for implementing the policy of free education, which thus benefitted the poor stratum of the country. And he followed this by spending a large amount of his money on politics, especially in order to work against the government in power.

In 1977, a new political party supported by this landlord came to power and one of his friends became the local Member of the Parliament. Although the landlord expected various types of political support to help him improve his economic condition through acquiring more and more land, the new government had to give priority to more serious political issues, such as unemployment and landlessness, in order to ensure a degree of political stability. The Accelerated Mahaweli Programme was in fact at that time a major undertaking of this new government.

In 1979, Jayasena received his final degree and sought a job simply to uplift his poor family. He applied for the UM's post advertised by the Mahaweli Authority, which he obtained in 1980.

From discussions with Mr. Jayasena about his background, an important dimension emerged.

The introduction of electoral and party politics, in a country where marginal and landless peasants constitute an important segment of the electorate, has often led incoming governments to emphasize rural development programmes. As the UM pointed out, Sri Lanka's party politics was such that every party had to compete with one another to attract voters in their lower income groups. This was done by making various welfare-oriented

and political promises. There was strong pressure on new governments to formulate policies oriented to the welfare of the poor rather than the benefit of the dominant class. It was also necessary for them to maintain a greater degree of autonomy in order to work effectively with problems such as rural unrest, political instability etc, because in the end governments are accountable to a broad base and not to the particularistic interests of any particular group or set of individuals, however powerful.

Once development programmes have been formulated to deal with problems like landlessness, unemployment etc, then the dominant class may find it difficult to transfer sufficient resources in favour of their own mercantilist interests. Furthermore, instead of avoiding radical structural reform, the state will be obliged to organize a range of public sector activities which would be intended to stabilize the economic security of marginal farmers. This includes providing subsidies, land development and resettlement, agricultural extension, infrastructural inputs, education, and health which cater for a broad electorate rather than satisfying the interests of a so-called dominant class.

When Mr. Jayasena accepted his job as a UM in System 'C', one senior UM in the area advised him to organize his working environment as follows:

"The higher officials of the Mahaweli Authority will ask for various reports but if you really want to work for the farmers:

* Do not waste your time in the field collecting genuine information for the preparation of reports.

* Delay the reports until the final reminder and then prepare them with estimated figures in order to suit the interests of the Head Office.

* The Block Manager will give various orders but you should not follow all of them and always argue with the facts and figures from the field that are unknown to your superiors.

* If you please farmers that means you will have more power to safeguard yourself for a long period, since any punishment by superiors will not be possible if the farmers support you when inquiries are made. According to the democratic constitution and labour regulations, the state can dismiss you only by using the law and not simply through coercion.

* If you please your boss that means you only have a temporary advantage since your superior can use frustrated farmers' complaints as a weapon against you whenever he wants to control your operations.

Therefore, you should maintain sufficient freedom to work as you want to work"

Although Mr. Jayasena was scared to follow this senior UM's instructions, he was able to guess what these conflicting interests were between local-level officials and external institutions. However, he was particularly interested in working for the settlers and becoming a popular UM among the farmers. This was mainly for two reasons.

Firstly, he had his own family experience from which he

learned the difficulties of poor farming households. Secondly, during his university life many student friends were radicals and he himself participated in many struggles of the poor. These experiences were also a factor influencing him to work for the benefit of the poorer settlers.

During the UM's training programme, the various UMs came to know each other. Except for a few, most of them came from the lower stratum of society with similar experiences. At the end of their training, several points had been emphasized both by the political authorities and by the Executives of the Mahaweli Authority. Jayasena understood some of these as follows:

- * You should work as a member of the settlement families and always live with them as their village representative.
- * You will be given full freedom to work in your settlement unit.
- * You should treat all the settlement families equally and ensure equal distribution of project resources. The regulations regarding resource allocation to families are laid down in the Mahaweli Settlement Strategy.
- * You are responsible for the implementation of the Mahaweli Programme as expected by the government.
- * You should tackle village-level conflicts effectively and make sure that all settler families reach the expected egalitarian status.

Soon after he took over the settlement unit, the settlers assailed him with many problems and complaints. He thought that it was his responsibility to help them. Therefore, he immediately prepared a report on irrigation, land and agricultural problems in the settlement unit. According to the instructions given him, the report was submitted to the Block Office for the allocation of funds, machinery, materials and manpower for the necessary repairs. The time spent, procedures followed and what the UM finally achieved, can be summarized as follows:

<u>Action and Response</u>	<u>Duration - No.of Days</u>
1. Submitted the report to the BM before the Maha season, 1985. No response	3
2. Went to the BM to insist that he grants approval. The BM referred it to the Irrigation Engineer(IE). Poor cooperation.	2
3. The report was submitted to IE and a meeting was held. No response.	6
4. A discussion with the IE. A date fixed for inspection.	2
5. Two visits to IE's office to remind him about the papaer. Promissed to forward the report to the Project Office for the approval of funds.	5
6. Went to the Project Office for discussion. Suggested that he wait until the next monthly meeting.	14
7. Went for the Project meeting. Tight agenda. No time for discussion. Meeting postponed.	30
8. Went for the next monthly meeting. A special meeting with Head Office personnel. Internal problems, postponed.	28

9. Went for the next meeting. A special request was made to the R.P.M to take up the paper. The matter was taken up. Due to urgent allocation of funds for the new are development, action on the unit's problems was postponed. The paper was turned down.

3

10. Came back to the settlement unit. UM had failed to take intervention initiative. He can no longer impose authority. To avoid this difficult situation in his unit he decided to work according to the interests of the farmers.

Total number of days - 93

He had realized the difficulty of working with external counterparts who are ineffective and unreliable. According to the UM, it was not possible for him to implement policies in a way consonant with the broader goals of the Mahaweli Settlement Scheme and at the same time to ensure that he represented the demands of the local people because there existed a basic contradiction between the farmers and external agencies. Although the UM was supposed to act as the state's agent, he decided to work according to the interests of the farmers, either violating or altering certain regulations. This was necessary since he had to live with the farmers on a day-to-day basis.

Lack of funds, inputs, and irrigation water had damaged his reputation and his career as a UM, though, of course the resource constraints were not of his own making. Most farmers, particularly the better-off ones, thought that he was a powerless person who did not have sufficient clout to allocate resources independently. Therefore, the wealthier group found it useless to make an alliance with him.

In order to establish an alliance with the better-off settlers, the UM must be able to maintain the state-directed external patronage system by acting as a 'gatekeeper' to public resources so that they flow into the settlement. But, with the above type of organizational incompetence, the centralized delivery system of public resources and services could not be operated as efficiently as expected. However, this failure did not lead to a collapse of the system. Instead, this weakness itself became a resource available to the UMs for maintaining relative autonomy at the local level and for transforming policies in the process of implementation. UMs are aware that, for their own survival as government officials, they should avoid the temptation of breaking their links with the farmers.

Furthermore, UMs receive pressure from the settler community itself to work according to laid-down procedures of the Mahweli Authority; and to ensure equal distribution of inputs and services, especially as resources are limited. A well-off farmer, on the other hand, realizes the uncertainties and risks involved in his informal relation with officials for obtaining resources by illegal means, given the struggle by the large number of farmers for scarce resources. Hence the proprietorship of small plots by farming families and their right to struggle for equal distribution of project resources becomes an obstacle to capitalist transformation in Mahaweli Settlement.

Operational control of settlers' lands in the form of leasing and renting has its physical and legal limits since large-scale operations undertaken by rich entrepreneurs reflect badly on the whole concept of the Mahaweli Settlement Strategy. Under these circumstances,

better-off farmers could not go beyond a certain limit, since the political ideology behind Mahaweli settlement is not favorable to their interests. Therefore, rather than making an alliance directly with the UM, it was necessary for them to develop good relationships (based on patron-client relations) with the poorer farmers if they wanted to control larger operational holdings under various tenancy arrangements.

As the UM stated:

" It was very difficult for me to live in the settlement unit when farmers regularly came with so many problems. I often failed to obtain the necessary inputs and services at the correct time to manage these problems effectively. Finally the circumstances were such that I was compelled to formulate my own programme in order to satisfy settlers and avoid conflicts. For example, when technical defects in the canals obstructed water distribution and I was unable to repair them immediately, the farmers simply cut the distributory canals and took water, which I had to allow if they were to survive. Also when farmers wanted to cultivate their own crops with limited irrigation water I had to allow them since I am unable to provide sufficient water for the cultivation of HYV of paddy according to the official farming system. Our living environment is surrounded by farm families, their human and social struggles for survival, as well as by unavoidable moral bonds. This is our "internal world" in which our involvement may even become counter-productive depending on the particular local situations we are confronted with."

According to him, he had to depend heavily on external agencies for the approval and clearance of formalities that are required for the supply of funds, inputs and services from the center to the local level. Therefore, he was constrained from channelling resources in favour of particular interest groups, since supplies were seldom timely and could not be planned well in advance, nor could external agencies be relied upon for delivery. Of course, he had some power to change the flow of resources at local-level. But the UM was forced to negotiate with settler groups in order to avoid conflict. Such conflicts are often used to evaluate the career of a UM. Therefore, in the type of internal world in which this UM worked there were very limited possibilities available for an alliance with the rich. This does not, of course, mean that rich farmer-UM relationships do not exist. As the UM stated:

" We have to maintain a good relationship with the progressive farmers. Sometimes we help them within our limitations. We do so mainly for our own personal requirements. For example, we have to use these progressive farmers as "show pieces" when the supervisors or World Bank officials come to visit our settlement units. We also use better-off farmers to generalize the progress we are making during the evaluation meetings. Sometimes these farmers help us personally by providing our families with farm products free or at a low price. But it is a friendly relationship and not a coalition to do anything else" .

According to the UM, when resources such as funds, inputs, irrigation water etc, are especially scarce,

their distribution has to be done strictly according to the procedures dictated by the Project Office. This implies a greater limitation on personal control over available resources. In the words of the UM :

"When we deliver World Food Aid or any other material assistance there may be possibilities to reserve a small part of it for our own family use. But on many occasions it was patron-client relationships between poor farmers and traders which were more important for transferring resources from the poor to the rich. Secondly, farmers are cleverer than we thought. They know exactly what is happening, how much they are entitled to and keep watch over the movements of the officials. Therefore, we could not use our discretion to make changes in the flow of such resources. If we go beyond our limit, settlers spread rumours that we are corrupt and they also send petitions to the higher authorities".

In general, then, UMs resort to evasive methods in order to avoid settler problems that are beyond their scope and which leave the settlers disgruntled and dissatisfied. Hence the UM avoids taking internal problems to his superiors who will not really comprehend the problems and their gravity, but will instead lay the blame on the U.M. himself and make him feel that he is responsible for the situation.

Even when the UM's presence in the Block Office is essential, his self-effacing behaviour follows a set pattern.

a) He remains silent at Block level meetings and tries to

avoid communication so that he can keep his internal world more or less independent from links with external agents and institutions.

b) In his response to his superior's questions, he tries to create confusion about the actual situation at grassroots level, so that direct action against him will be difficult.

c) He misdirects his superiors by distorting the situation.

d) He adopts a strategy of self-defence.

This situation illustrates how the planned strategies of settlement development are continuously modified or altered at the level of implementation. From the bottom-up this structure is heterogeneous in its class nature. The Unit Management System therefore reflects a complex overlapping and interpenetration of economic, political, administrative and cultural agencies, relations and interests, and a characteristic combination of formal and informal, official and unofficial, public and private, and legal and illegal activities.

Several implications may be noted from the above account of the strategies adopted by the local-level officials.

- * The bottom layer of the state structure, which consists of UMs and settlers, does not function the same way as its top layers do.

- * Theoretically, the settlement structure had been designed to maintain a "top-downward" control and supervision of the policy implementation process and

a 'bottom-upward' dependency on external institutions. But, in reality, the top management of the Mahaweli Authority depends heavily on the field staff for the organization of the activities of their respective departments.

* The state structure cannot be treated as a unitary one since it consists of multiple interests and organizations. Since many different social interests are represented in the state structure, which directly or indirectly shape the actions of state policies, the latter cannot simply be derivative of either class relationships and struggle, or the logic of capital accumulation (Long, 1988:6).

* Although policies and models of settlement development are formulated and processed at the Colombo Head Office of the Mahaweli Authority, they are severely affected by organizational constraints at the level of implementation. General procedures and models of settlement development may be a product of foreign and local experts' knowledge. But when these models and policies are handed over to the UMs, the latter usually make their own modifications and alterations, depending on the practical situation at grassroots level and on the nature of the specific problems they face.

Therefore it is not "experts knowledge" of development models that actually works at the field level but the UMs' own knowledge and experience which emerge out of micro-level economic, social and political factors. The day-to-day struggle of UMs with their own problems is dominated by the pragmatic motive, that is their everyday life is essentially oriented towards solving practical

problems. One sort of practical knowledge which is limited to pragmatic competence is routine performance. This occupies a prominent place in the stock of knowledge these individuals process (Arce and Long, 1986:10).

Although local officials are identified as monthly wage-earning development bureaucrats, they cannot simply be separated from local processes and on-going social constructions. With their rural backgrounds (most of them are from rural farm families) and life experience they are close to the reality of social life in the Mahaweli settlement. Thus their work styles and career patterns become a part of local processes where local actors attempt to give social meaning to ordinary events and situations. Hence they represent the ongoing social processes rather than the Mahaweli "project". Since they are compelled to get involved in local human interactions they cannot simply escape from the social justifications of the communicative order. Therefore when behaviour of local officials is analyzed from the inside and from an emic standpoint one can understand how they become important actors at the intermediary level.

It is also equally important to study how the farmers attempt to manage this complex organizational set-up where market-oriented cash-crop farming is imposed on them. The next chapter analyses farmer behaviour, resistance and the struggles taking place in response to the official programme of agricultural development.

CHAPTER FIVE

SETTLER REACTION, RESISTANCE AND STRATEGIES

Family farmers in Mahaweli settlements are heavily controlled and supervised by a large number of officials with strategic intentions aimed at changing farming practices towards a modern-input technology based upon cash-crop production. Farmers have limited possibilities for making their own decisions concerning agricultural production and the distribution of resources. Yet, although there is very limited room for manoeuvre, these farmers do resist, negotiate and struggle in a variety of ways. They study the behaviour of intervening parties, identify their weaknesses and generate their own battlegrounds for confrontation with them. In doing so, they reshape the so-called controlled programme of planned intervention. This reshaping process generates common ground upon which to press their demands. Some farmers "internalize" external intervention through influencing officials to re-adjust intervention practices in accordance with farmers' programmes of action. Thus they respond in several ways and their actions contribute to the ongoing political and social struggle, although it is difficult to predict the particular pattern that these strategies will take or the ways in which they will be applied by farmers, individually or collectively.

The following sections explain the different farmer strategies according to the specific problems they face.

Farmers in settlement unit UI try to create the necessary space for their actions through direct face-to-face confrontation with local officials and in this way they block intervention practices and force officials to negotiate with them. Farmers in UII are involved in a struggle for irrigation water. The incompetence and inability of officials to carry out their responsibilities for irrigation water distribution, create space for farmer strategies. Farmers are thereby able to question the meaning of the rules and procedures and in this way influence actual practice. The so-called "backward" settlers in UIII also develop their own strategies, but these are based on feigned incompetence, aimed at diffusing attempts to impose change from above.

As detailed in the previous chapter, local-level officials and farmers struggle to demarcate their domains and to identify the value and meaning of their encounters under diversified patterns of family farming. The pressure on them varies depending on the nature of the operational problems emerging at different levels of the organizational structure. This chapter focuses on the strategic actions adopted by settlers in response to the agricultural tasks imposed upon them by officials. Although the Unit Manager (UM) plays a subordinate role among his superior officers, he must maintain some authority among settlers as a liaison officer. The activities of state agents, however, cannot be confined strictly to their formal responsibilities. They have to act multifariously according to their own interests, which often run contradictory to the project ideals of equity and participation.

One UM expressed his rationale and thinking towards Mahaweli settlement development as follows:

"Mahaweli settlers are not equal. There cannot be common problems and common goals to achieve. No collective struggles take place. Their different behaviour creates serious difficulties for administrators, since there is no method on for dealing with different types of farmers. Organized action from settlers will not be allowed by a wise administration. Secondly, if all the Mahaweli Settlers can improve their living standards to the level of self support, and if all of them are equally capable of self management, the importance of the UMs in the settlement units decreases and there will be job insecurity among grassroots administrators. A wise Unit Manager will not allow such a situation to arise".

This type of attitude by implementors indicates the uncertainty and unreliability of planning practice during the implementation stage of the Mahaweli Settlement Scheme.

Rational models of policy and planning procedures have much to recommend them. Their internal logic is consistent; they provide a means for defining the roles, activities and contributions of various individuals and agencies, and they facilitate the programming of events, funds and materials. However, when the actual experience of land settlement schemes is analyzed, we discover that these formal models have generally not in fact been followed (Hulme, 1987; Dunham, 1983). This means that settlement approaches based upon equity, as documented in feasibility reports, create a particular image of participation ideals, but in reality state agents cannot translate these ideals into practice, not only because of

the demographic, cultural, economic and educational disparities that exist among settlement families but also because of the contradictions that we find between stated goals and the personal interests of management officials. However, this does not mean that the ideals of equity and participation are ignored by settlement staff. In fact, they are used not merely as concepts but as weapons in the process of bargaining with the settlers over distribution of resources at field level. For example, when some settlers explain their cultivation problems, an equity-based judgement is usually mentioned. A water controller (Field Assistant) explained this as follows:

"Every farmer is given an equal size of land, an equal amount of irrigation water services and other facilities. All the settlers are equally treated by the management officials, and if some farmers can use these resources efficiently without problems, why cannot others do the same? The failures of some farmers can be attributed to their own negligence and backwardness. It is the inefficient farmers who raise problems while efficient farmers cultivate. Administrators should take severe action against those inefficient farmers".

However, settlers have somewhat different opinions about the same problems, emphasizing that family farm settlement gives them the right of equal access to project resources. According to one settler:

"When we were re-settling the Minister of Mahaweli Development told us that it was government policy that we receive an equal amount of project resources, (such as water, credit, inputs, subsidies, health etc.). Therefore if any farmer

gets anything more than I get, I have the right to ask for the same amount. The officials should do it".

Hence, they often blame the bureaucrats for the unequal distribution of resources. According to them, officials are corrupt and support only their favorite groups.

Officials who regularly interact with the farmers have the status of 'Unit Managers', with some formal power to achieve assigned tasks. According to farmers, UMs usually do not like to be saddled with problems, although they like settlers to display some incompetence so that they can then assume an active role advising them. UMs believe that the distribution of resources cannot be handed over to settlers because of their low education, lack of co-operation and organizational incapacity. This view is, of course, grossly incorrect. UMs' argue that, though some settlers are powerful, the majority are weak and the UM must therefore take responsibility for resource allocation among settlers in order to look after the weaker groups and to infuse confidence in them.

In this type of situation, the UM's intention is not to motivate settlers to participate in the activities decided by the settlers, but to use statutory powers to induce them to participate in the agricultural tasks organized by the officials. In order to maintain administrative status and power, the UM does not encourage farmer organizations to take over his responsibilities completely. The task of the UM is to organize farmers for better water management, input application and modern farming practice. Farmers' reactions to these interventions are based upon their own individual experiences which are not necessarily

conducive to collective or organized forms of response. These then, are some of the reasons for the non-existence of so-called "efficient" settler organizations in the settlement, even though in official ideology settler participation is considered an essential factor for efficient water management and uniform family farm development in the Mahaweli.

Although an attempt was made more recently to organize farmers into Turnout Groups for water management, this exercise appears to have been frustrated, mainly because UMs perceived such a solution as artificially imposed. According to the observations of management officials (as documented in the minutes of the follow-up programme meetings of the Turnout Groups), the Turnout Groups did not function satisfactorily from their inception, even though the programme was implemented with heavily-funded foreign expertise and regular supervision by management staff. Some of the problems identified were as follows:

- a) Farmers (there are about 15 farmers in one turnout area) belonging to a Turnout should select a Turnout Leader. However, these leaders were selected under the influence of officials and did not necessarily represent the farmers of the entire turnout. They were then supposed to undertake responsibilities according to the UMs' instructions with the result that they were forced to manage irrigation water according to the interests of the water management officials. Thus they were agents of the officials and not the representatives of the farmers. The majority of them were from the head reaches of the field canal, where irrigation water problems were insignificant. The information taken by the Turnout Leaders to the farmers in the Turnout Group was not

accepted by the farmers, primarily because they regarded them as no longer working in the interests of farmers.

- b) The relationship of Turnout Leaders to settlers was conflictive, because they became caught in the crossfire between field officials and farmers.
- c) The Turnout Leader-official relationship became personalized and settler representation was thereby minimized.
- d) Turnout Leaders were 'hand picked' supporters of the UM and did not therefore win the co-operation of farmers; instead such leaders often acted to sabotage the very objectives of the Turnout Group Programme.

Despite all these weaknesses, the UMs were willing to use the Turnout system to approach settlers through Turnout Leaders, without making any effort to build village or hamlet level settler organizations. All attempts at "social promotion" and at gradually "creating" a class of enlightened and responsible farmers failed. The official government image of farmer participation was that Turnout Groups would become a class of farmers who would understand the benefits and implementation of agricultural development, manage their own affairs and contribute to the development effort.

One reason for the failure of Turnout Groups was that the officials did not have much interest in understanding the transactional characteristics of farmers' relationships, nor social foundations for local participation. They only wanted to create Turnout Groups in an artificial way

since they were given 'deadlines' for the formation of a specific number of Turnout Groups. A study (Siriwardena, 1981) revealed that when settler representation in the leadership was low, the dependency of the Turnout Leaders on UMs was higher because 'hand-picked' leaders had to strengthen their relationships with managers in order to compensate for their weakening links with the settlers.

This Turnout Leader-UM relationship cannot be viewed as a successful integration of intervention practices. For example, many UMs wanted to use Turnout Leaders as their data collectors for preparing monthly reports for the Head Office without having to make field visits. Secondly, UMs could convey messages to farmers through Turnout Leaders and thus save time for their own businesses. Thirdly, the UM-farmer relationship became weaker since they tended to meet Turnout Leaders, rather than interacting with farmers in the field.

It is under the operation of this type of structure that settlers, as individuals and social groups, develop different livelihood strategies. Settlers do not usually protest directly against the official model of the farming system: instead they put forward various demands (individually or collectively) and expect the UM to solve them, after which they watch his actions carefully to see how he conducts himself. Table 13 shows some of the main demands and their preference ranking (1) by settlers of each settlement unit. This underlines the absence of uniformity in livelihood interests and points to the existence of diversity within household production units, which makes it difficult for UMs to response effectively to multiple and conflicting interests.

Settler Strategies in U1

U1 recorded a comparatively higher yield per hectare, better agricultural performance and lower incidence of irrigation water problems. One might assume, therefore, that the survival of the UM in this unit would be much more likely than in U11 and U111, but in reality it is just the opposite. The main demands (see Table 13) put forward by the majority of settlers cannot easily be accommodated or are rather difficult to solve by the UM. About 85 percent of the settlers demand additional sources of income even though they obtain a comparatively higher paddy yield than other units. Few in fact are employed, (e.g. as wage labourers on government demonstration farms, forest plantation projects, or in the construction sector). And although the UM was able to help a small number of people, this actually created dissatisfaction among the majority, with consequent negative reactions.

As Spittler (1983) argues, there is nothing more difficult than to administer millions of rural self-provisioning households. According to him, peasants use specific strategies geared to meet their own semi-autarkic household needs, and are not as much interested in influencing the administration as in keeping it at a distance. He takes his example from a self-provisioning village peasantry in Africa. The situation of the Mahaweli is quite similar. There are many situations in which farmers organize themselves, but, since cultivation risks and dependency on external agencies are low, the settlers in U1 have considerable freedom and bargaining power vis-a-vis their managers.

Table 13. Main Demands of Settlers in the Three Settlement

Units 1985 Maha(wet) season.

U1	%	U11 Preference Ranking	%	U111	%
1. Employment for second generation	85.2	Distribute required amount of irrigation water	92.3	More subsidies	82.1
2. Inputs and service at correct time	73.5	Repair canal defects	86.3	World Food Aid	81.2
3. Better market for farm products	72.7	Compensation for crop failures	81.3	Land for mixed cropping	72.3
4. More power to settler groups	71.2	Eliminate illegal water use	72.2	Stop officials' interference	70.8
5. Reduce unit officials	62.3	Replace corrupt officials	70.4	Provide health facilities	62.2
6. Good education for the children	58.8	Provide better irrigation plots	68.5	More land for food crops	57.5

Source: Own survey (25% sample from each settlement unit)
 Total number of settlers: U1 = 225, U11= 236, U111= 230

Secondly, most settlers who practice paddy farming according to the instructions given by the officials, have discovered the impossibility of increasing their net income in the face of the rising costs of production. This type of disappointing experience with paddy farming is an important factor in the increasing dissatisfaction among settlers. One typical response of settlers in U1 was:

"The officials cannot practice what they preach. They request us to use different types of agricultural inputs and seeds. But they are unable to ensure a regular supply of these in sufficient quantities and at the correct time. When we raise questions they invariably clam up, but when there is a simple mistake they find fault".

According to the settlers, they can improve their income from agriculture if their managers are efficient in delivering the necessary inputs and services, including marketing. As one farmer explained, the officials do nothing but put farmers "into a bull fighting game". They tie farmers to a strict cultivation schedule and bring them to the fields on a specific day. They then insist that they transplant new seed varieties. After the farmers become involved in this modern, external-input and dependent farming, the officials withdraw, leaving the farmers to fight it out, compete and struggle in the black market to buy the necessary inputs, sell their farm products, and finally to defeat their own purposes.

73.5 percent of settlers in U1 are uncertain about the services provided by officials. As one experienced farmer explained:

"The Mahaweli Scheme is not simply a settlement programme for settling farming households. It is also an employment bureau for providing employment for technically qualified but unemployed people who have no practical experience. Once they are employed in the settlement they must do something to convince the World Bank and the Ministry that their work is indispensable".

The settlers who do not trust managers want to avoid dependency on external sources and wish to use their own inputs and seed materials, even though it is difficult for them to do so since extension officials evaluate their agronomic principles as rudimentary and primitive. However the potential of certain forms of practical knowledge used by settlers for solving their own problems cannot really be undermined by professionally qualified extension officers. The latter argue in terms of projected yields, that are tested only in their experimental farms and laboratories, whereas farmers' knowledge arises out of long-term practical experience. Hence the types of 'scientific' training provided by government officials is often not understood or put into practice by farmers.

One typical response was:

"Although our own farming has nothing to do with these programmes, some of us participate just to satisfy the officials so that they can send in their reports, subsistence and travel claims without troubling us again. In this way, if we lend a helping hand towards their survival then they also let us work according to our own interests".

Extension officials are not in a strong position to argue with these types of farmers. They can only request farmers to attend extension training programmes for recording purposes.

Settlers often claim that they once lived in a state of well-being that has been undermined by compulsory cultivation routines associated with High Yielding Varieties of rice, which are in fact uneconomical (see

Table 8, Chapter 3). They also complain about the financial crisis of their families as a result of buying, selling and competition.

According to the experience of farmers, officials can explain various modern methods and calculate high yields at meetings, but they cannot prove their real benefits in relation to costs. Thus what is theoretically feasible is practically impossible if the financial incapacity of ordinary settler households are taken into account. Extension officials have made distinct steps towards linking themselves with settlers and defending their own professions. However, untried new brands of agro-chemicals are being recommended that require important changes in methods and time of application. As a result, 66 percent of the sample settlers in U1 reported that the new weed killer they used in the 1986 Yala season, was not so effective as the previous brand. Also new products were not readily available. Another complaint was that services were provided without identifying the real needs of the farmers. Some settlers in U1 insisted on setting up small poultry farms but had very little experience with poultry, whilst at the same time a few farmers who were not prepared to undertake poultry farming were given training. Similarly farmers who had never transplanted paddy, were virtually compelled to attend training on the use of new methods of transplanting and a new paddy nursery system, without really being able to assimilate this knowledge.

Officials are interested in their jobs, particularly in sending monthly reports to the Head Office regarding the number of training sessions held and the level of farmer participation. While farmers help them to fulfil their duties, they try at the same time to develop their own

projects, based on practical experience, which differs from the type of extension training and farming methods promoted by officials.

When settlers are not satisfied with the work of the UM, they cannot protest because they believe they will be penalized. The practical experience of the farmers, however, provides them with a basis for developing farmer-farmer relationships and social networks. As some farmers explained, there already exist clandestine farmer groups, particularly among groups of friends who organize activities aimed at developing forms of collective bargaining vis-a-vis the UM. On the basis of this experience, many farmers in U1 are seeking more statutory power with which to stand against the injustice and misuse of power by officials. Farmers develop their own identities, values and interpretations in their own life situations, and on the basis of this they seek to conceptualize alternative programmes, whereas UMs aim to impose their normative interpretations on the process of change.

For example, during my field work, the Unit Manager of Settlement Unit No.1 explained some of the reasons for the progress made by many of the farmers in his settlement unit. According to him, those farmers considered progressive had strictly followed his instructions and training on water management, agricultural extension and the application of new technology: "I take full responsibility for distributing project resources and services on time and for training farmers to get maximum benefit out of our systematically planned action programme". He also showed me various progress reports and graphs representing his achievements.

However, it was my concern to monitor farmer behaviour in the field in order to understand how farmers actually managed their farming and livelihood problems. The experience I acquired living with farmers ran quite contrary to the UM's opinion. His intention was to justify his role as a local agent of external intervention, whereas farmers maintain that they manage their basic livelihoods not by following the instructions of the UM but by abandoning many of them and relying on their own methods and knowledge of farming, particularly when faced with crisis situations. Thus they internalize various components of external intervention, draw upon proven practice and evolve their own social constructions based upon their own networks. Various circumstances prompt them then either to resist proposed changes which do not fit their requirements or to alter the UM's programme of action. The case study that follows, shows how three farmer friends evolve their own way of solving their farming and livelihood problems and of demarcating their own social domain that protects them from outside intervention.

The Case of Three Friends

I met Ranasinghe (settler U1/T12/No.2) when he was repairing a plough with two other settlers. Since I had already been in their village for more than two months he started talking to me whilst continuing to work. He began the discussion with a long story about his friends and friendship. According to Ranasinghe, his friends (settler U1/T12/No.3 and settler U1/T12/No.4), who live in the same village, cultivate adjoining farms and always work together. During the last five years their friendship has

been consolidated as they became dependent on each other for solving their agricultural problems, sharing resources and making decisions. Ranasinghe said: "we are just like brothers belonging to one mother."

All the strategies they followed had strong connections with the changing livelihood problems they had faced from the inception of their settlement life. They call these problems 'the Mahaweli Lessons'. Many training programmes dealing with farming, extension, and water management questions had been organized by officials; however 'the Mahaweli lessons', as Ranasinghe explained, do not refer to the lessons learned from the successes of such programmes, but to the lessons learned from the failures.

External Intervention: A Lesson of Failures

When Ranasinghe arrived at the settlement from his original village (Padaviya, North Central Province) the land was not well levelled, field canals were only partly constructed and there was no sign of irrigated farming whatsoever, even though the cultivation time schedule had been given to him. The UM had promised to solve all these problems and guaranteed the supply of irrigation water for both the Yala(dry) and Maha(wet) seasons. Farmers were requested to go ahead with land preparation.

While Ranasinghe was struggling to level his land within the given time, the Mahaweli officials advised him to cultivate B.G 34-8, the best High Yielding Varieties of paddy, especially recommended for Mahaweli farmers. He started to discuss this new cultivation programme with his neighbouring farmer friends. They agreed that each of them would undertake the official farming system on an

experimental basis since they had a feeling that the new cultivation programme would be better than their own.

Ranasinghe, together with his friends, decided to follow all the instructions of the UM. He borrowed credit, purchased fertilizer, hired labour for transplanting, and used tractors to complete the agricultural tasks within the given time schedule. But the UM could not keep his promises: the field officials simply failed to provide adequate irrigation water. So during the first cultivation season, more than 50 percent of the paddy land was severely affected by a lack of water; and at the end of the season Ranasinghe's income was far below the investments he had made. The loans borrowed from the bank could not be repaid. Then, in the second cultivation season, Ranasinghe faced a serious family crisis since there was hardly anything left for day-to-day sustenance. This failure provided the stimulus for him to ask his friends for their help and suggestions. They came to several conclusions:

- a) Official methods of farming are not only non-sustainable but also not feasible economically. Even the most basic elements of modern technology, like chemical fertilizers or hybrid varieties such as the B.G 34-8, had failed to provide the solution to the most basic of farm and household problems.
- b) The picture painted of the future prosperity of the Mahaweli through T.V. programmes, statistics, and lectures during the farmer training classes was far removed from reality. Officials are outsiders with a mandate to conduct research and extension training for improving the technology of farming and developing modern methods. But they commence without

any practical understanding of farmers' problems; and farmers are treated as objects in government programmes designed to attain national production goals.

- c) It is dangerous to work always according to the UM's instructions and to depend on him to solve practical problems. Agricultural programmes designed for the development of commercial farming do not coincide with the plans of farmers. Quite often the recommended packages promoted by officials are not in line with the farmers' own needs and circumstances. Therefore Ranasinghe saw no alternative but to by-pass those planned programmes, or alter them in accordance with the practical needs of his household.
- d) The new varieties of paddy are more sensitive to drought and yields drop much faster than traditional varieties when the water supply decreases, even marginally. Moreover, the new varieties of paddy are more vulnerable to nitrogen fertilizer, plant disease, insect pests and weeds than Ranasinghe had expected.

Ranasinghe and his friends decided, therefore, to reduce the area to be cultivated in the fourth season to coincide with the irrigation water available.

This time the yield for the cultivated area was high but the net income they received was far below that of their basic living requirements, mainly because the costs of production and consumption had increased rapidly. Under these circumstances they were compelled to concentrate further on how resolve the widening deficits in their

family budgets. Meanwhile, officials hardly discussed these problems but continued to organize their training sessions and lectures(2) on subjects such as the advantages of external-input technology, intensive farming methods, target yield, and achievable income.

Social Arrangements Among Friends in the Face of Market Dependency and Official Programmes

Ranasinghe met his friends regularly and gradually they developed their own solutions to these external problems. These included the internal re-organization of available resources within the three families, according to their capacities and knowledge. The three farm families had discussed at length their difficulties in making a living in the Mahaweli due to increasing market prices for consumer goods and purchased inputs, and decreasing prices for farm products. This led them to drop selected aspects of the Mahaweli cultivation programme and exercise their own judgment in managing their crops. In this way they changed from official market-dependent cash-crop farming to a more reliable balanced farming system combining subsistence and commercial crops. This was a difficult task since they had to organize their farming schedule against that of the official programme. Hence it was essential for them to maintain close friendship ties and to keep the UM away so that they could conceal their strategies.

Ranasinghe and his friends first began to by-pass officials and to discuss among themselves the problem of the irrigation water supply. They concluded that water scarcity was a problem created by the UM responsible for water distribution. By restricting water flow and

creating water shortage and thus manipulating farmers' demands for more water, the UM protects his own job and social standing. This attitude towards water distribution motivated Ranasinghe and his friends to organize their own project according to their plans, which, in turn, became a threat to the UM's relationship with some farmers in the settlement unit. The use of HYVs and modern technology implies complicated agronomic practices, high cost, high risk and practical problems in obtaining access to inputs. So Ranasinghe and his friends chose instead to employ their own knowledge and experience and to evolve their own social arrangements for the solution of livelihood problems.

Interaction and Negotiation with External Agents

Given these intentions, Ranasinghe and his friends initiated a new type of interaction with the UM. This time they adopted a strategy of face-to-face disagreement with him in bargaining for irrigation water. They did not want to please the UM simply for the sake of maintaining a friendly relationship as they had done before. Instead they put forward difficult demands which they expected the UM to solve. And if he failed, then they would be able to put the full blame on him and thus end their friendly relationship. Their negotiations centered around the following issues:

a) Because there is a wide gap between the official date for water delivery and the actual date of receiving water by the tail- enders of the field canals, they insisted that the cultivation time schedule should be fixed according to the actual receiving date of water by the lower reachers.

b) The sufficiency of water should not be judged by the level at the Turnout gate, but should be judged from the actual situation of each field.

c) If the UM was unable to complete the levelling of irrigable land, as he promised, he should supply water to cover the highest parts of the fields despite the amount of water delivered through the inlets.

d) If the UM could not solve the above problems, then he should not expect farmers to follow his instructions for the rest of the agricultural tasks.

When the UM explained (as the farmers expected) that he could not give water above that officially allowed, the farmers urged him to report the problem to higher authorities or at least to inspect their fields and record the actual situation of water flow and scarcity. The UM agreed only to the latter. In their interaction with him they also expressed their anger and disappointment regarding his way of dealing with things, putting forward the view that the UM should not visit them again without a satisfactory solution.

Even though they did not believe the UM to be competent or that he could ever find a solution to their irrigation problems, they did believe that this type of negotiation and bargaining would create an embarrassing situation that would effectively keep him away from their farms. They would then be free to organize agricultural activities by themselves without his surveillance. However, they were careful not to destroy the UM's own survival strategy, since they were aware that officials can react sharply

when they are placed in a situation where they cannot at least ceremonially defend state policy. policy.

According to Ranasinghe, the changes he wanted to make during the seventh cultivation season were not totally against the official programme. For example, he decided to allocate 50 per cent of his one hectare farm to the cultivation of HYV paddy recommended by the Mahaweli Authority which he could manage with the available irrigation water (availability was judged from the minimum water supply during the previous seasons).

The Results of the Farmers' Own Project.

By making these changes he was able to reduce the costs of production to about 35 percent of the costs involved in cultivating HYVs for one hectare of land. According to Ranasinghe, the marginal return per unit of inputs and labour was higher with this more reliable water supply.

Table 14 shows the average costs of production and income computed on the basis of data obtained from Ranasinghe's farm records. He does not usually keep up-to-date records of his farm budget but maintains some important accounts on the main items of expenditure for the purpose of making his own comparison and experimentation. The items included in Table 14 therefore are limited to the information available from the farmer.

Table 14.

Costs of Production and Income Under the Official Programme of Cultivation (1/2 ha. HYVs) 1984/85 Maha Season		Costs of Production and Income Under Farmer Managed Cultivation (1/2 Ha.) 1985 Yala Season	
To complete the ploughing within the official time limit.		To complete ploughing before closing canals.	
1. Hired Tractor	Rs. 700.00	Buffaloes	Rs. 320.00
Family labour	00.00	Family labour	00.00
2. Land preparation		Land preparation	
Hired labour	Rs. 110.00	Family labour	00.00
3. Purchase of HYV seeds	Rs. 350.00	Purchase of HYV seeds	Rs. 350.00
4. Transplanting		Transplanting	
Hired labour	Rs. 375.00	Hired labour	Rs. 150.00
		(only HYVs of paddy)	
5. Fertilizers	Rs. 825.00	Fertilizers	Rs. 700.00
6. Weedkillers		Weedkillers	
Pesticides	Rs. 325.00	Pesticides	Rs. 300.00
7. Harvesting		Harvesting	
Hired labour	Rs. 325.00	Hired labour	Rs. 100.00
Hired tractor	Rs. 200.00	Hired tractor	Rs. 150.00
8. Total Production Costs	Rs. 3210.00	Total Production Costs	Rs. 2070.00
	=====		=====

Source: Compilation of Ranasinghe's farm records.

Secondly, he demarcated another 25-35 percent of the farm (this area was selected after a careful study of land levelling problems and technical defects of the canal structure) as a semi-irrigable area or partly wet land for the cultivation of another variety of paddy called 'H4' which was his own selection.

He had been using this semi-improved variety of paddy for the last two decades, from the time he lived in his original village.

According to Ranasinghe, the 'H4' variety of paddy was first introduced to their village in the 1960's and was especially suitable for semi-irrigable farming. The selection of this variety for cultivation in his new Mahaweli farm was explained by him as follows:

a) The H4 variety grows taller than new varieties so that it can compete with weeds, standing above them, whereas the recommended HYV is a much shorter plant and the weeds outgrow it. This means that very expensive weed killers must be applied. Although the new variety is unlikely to be blown over in strong winds, the damage from weeds is greater than that from wind.

b) If the costs of transplanting, weeding and weedkillers are taken into account, more benefits can be obtained by the broadcast sowing of the H4 variety of paddy. An experienced farmer can broadcast paddy so that a good distance between plants can be maintained. According to Ranasinghe, some of the advantages of broadcasting the H4 variety of paddy are:

1. The cost of transplanting is a very high component of the costs of production which can be avoided by broadcasting.
11. Unlike transplanting, the space allowed between plants, where weeds can grow, is limited with broadcasting. Therefore, the cost of weedkillers can be greatly reduced.

111. Since paddy plants are closer to each other and grow taller in bunches, the plants rub together all the time so that insect pests cannot take hold.

iv. After the harvest more dried paddy remains in the fields than in transplanted fields. This becomes a natural fertilizer and in the next season field preparation will also be easier.

c) The H4 variety of paddy consumes comparatively low amounts of chemical fertilizers and pesticides. The application of a small amount of urea with more compost or natural fertilizer is the best combination with which to obtain maximum yield with the H4 variety of paddy.

d) At the maturing stage of this paddy variety the plant usually bends down towards the earth. During the final stage of its growth the paddy is left without any water in the field. However, scarcity of water is not a problem but rather a requirement for the cultivation of the H4 variety of paddy.

On the basis of this wide practical experience with the H4 variety of paddy, the three farmer friends decided to broadcast the seeds in the area identified in their fields as semi-irrigable. Since the three plots were adjoining and belonged to one field canal, the three friends could cultivate the lands on a collective basis, sharing already allocated irrigation water. The explanation which Ranasinghe gave for this decision was convincing, even if such "practical laboratory" experiments were unacceptable to extension officers or agronomists who carried out their experiments in

"scientific laboratories" or in "controlled demonstration plots".

Table 15 shows the actual income received by Ranasinghe after replacing the HYV with his own H4 variety in the semi-irrigable part of the plots.

Table 15.

OFFICIAL PROGRAMME		FARMERS' SELECTION	
Estimated costs if new HYV is cultivated (Only for 1/3 of the plot)		Cultivation of farmers' own variety of paddy (1/3 of the plot)	
-----		-----	
1.Ploughing			
Hired tractor	Rs. 470.00	Buffaloes	Rs. 200.00
2.Land preparation		Land preparation	
Hired labour	Rs. 70.00	Family labour	00.00
3.Seeds HYV	Rs. 230.00	Seeds H4	Rs.125.00
4.Transplanting	Rs. 250.00	Broadcasting	
		Family labour	00.00
5.Fertilizers	Rs. 550.00	Fertilizers	Rs.150.00
6.Weedkillers		Weedkillers	
Pesticides	Rs. 220.00	Pesticides	00.00
7.Harvesting		Harvesting	
Hired labour	Rs. 220.00	Hired labour	Rs.150.00
Hired tractor	Rs. 130.00	Hired Tractor	Rs.130.00
	-----		-----
8.Production		Production	
Costs	Rs.2140.00	Costs	Rs.755.00
9.Gross Income		Gross Income	
(55 bushels x 75		(60 bushels x 75	
less production		less production	
cost	Rs.1985.00	cost	Rs.2995.00
	=====		=====

Source: Own survey.

There remained a further 15 to 25 percent of unirrigated land left in his allotment. This he decided to mainly utilize for vegetable and other food-crop cultivation for family subsistence. He resolved that this would reduce market dependency for basic food requirements. In this

plot he cultivated green gram, onions, cowpeas, chillies, bananas, and several other vegetables. According to his own calculation, about 40% of the costs of food reflected in the family budget could be reduced by growing and consuming his own crops.

Lessons Learned

After experimenting with the above type of mixed farming system, Ranasinghe obtained quite promising results at the end of the seventh cultivation season. He assesses the advantages as follows:

a) Many farmers in the Mahaweli Settlement experienced serious difficulties with the HYV of paddy (BG 34-8) recommended by the Mahaweli Authority, due to disease. HYV thus requires constant consultation with Mahaweli extension staff and the use of various pesticides available in the market. After spending heavily on disease control, some of the more affluent farmers were able to save the crop but most of the farmers had very low yields despite official guarantees. Ranasinghe too was affected badly, but fortunately the damage was limited to the area he had cultivated with the new variety, which amounted to about 35 per cent of that planted by other farmers. Because of this reduced acreage he was able to pay more attention to the crop, resulting in a comparatively higher yield.

b) His own variety of paddy (H4) was not affected so much because it is more resistant to such disease and because its stages of growth are different. As a result he obtained the maximum yield from his own crop selection.

c) After his decision to cultivate food crops and vegetables in a small unirrigated area (including selected ridges) he was able to save a considerable part of his consumption costs. Because of adopting a mixed farming system in his irrigated plot, his visits to the paddy fields also became more frequent as some produce contributed to the regular food needs of the family.

d) The periods of labour input required for these three types of farming in the same field were different. Therefore, apart from some exceptional peak periods, he was able to manage mostly with family labour. In contrast, the strict timing required for the official variety of paddy forced many farmers to hire labour during several stages of production.

e) Since he has re-organized his farming to deal with the irregular supply of irrigation water, dependence on Mahaweli officials (such as the UM) is reduced. He now has the freedom to resist, negotiate, or even to by-pass them if they provide no benefit. Irrigation water problems are solved using his own farm management strategies, something he was unable to achieve following official management training instructions.

Compared to the highly technocratic and externally-planned official programme of the Mahaweli family farming system, the above type of farming model designed by the farmers themselves demonstrates their knowledge and skill in organizing and managing agricultural resources under difficult circumstances. It also reveals that farmers have a high research capability through the application of their own experience. Hence they have sufficient capacity to analyze agricultural problems and

to act upon this analysis and make appropriate changes in their farming system. As Ranasinghe clearly demonstrates, they are knowledgeable actors who understand their day-to-day living situation.

The type of relationship and interactions that exist between these farmers and the Unit Manager indicate several aspects:

a) Although the UM is expected to carry out various tasks assigned by the Mahaweli Authority, he is nevertheless compelled to modify the planned programme and to adopt his own strategic approach in order to handle the potentially contradictory demands made upon him by both farmers and his superiors. For example, the UM tries to interpret farmers' achievements as an outcome of his own intervention practices which concur with the agricultural development plan formulated by the Mahaweli Authority. When farmers' own solutions to production problems are shown to have positive advantages, then the UM often uses the farmers' model to defend himself, claiming them as the success of his own programme of implementation.

In the opinion of these three farmers, UMs are there only to give instructions, using the difficult terms they have learned from their theory books. Since their practical knowledge is poor they cannot offer appropriate solutions. When a farmer discovers a good solution and suggests it to the UM, if this is not contradictory to his programme, then the UM says "yes it is very good and this is what I expect you to do". Hence he is good only for commenting and criticizing. Therefore, farmers seek help or advice from a friend or a neighbour rather than from the UM.

These three farmers have become confident concerning the advantages of farmer cooperation which their friendship has made successful. Some of the activities they organized were:

- * the exchanged of food, farm products and agricultural implements.

- * the utilization of family labour on an 'Attam' (exchange labour) basis in order to avoid hiring labour during the peak periods of farming (sometimes the labour input of one family was exchanged with the agricultural implements of another family).

- * the minimization of borrowing from outside sources at high interest rates by adopting their own informal lending/borrowing system called 'Athamaru' (i.e. borrowing of small amounts of money without interest, when an urgent need arises and returning it immediately after the crisis).

- * During the glut period (just after the harvest), they did not sell all the harvest as they had done earlier. Now, one of the farmers sells part of the harvest and shares that money among the others to cover living expenses, until the glut is over. Once prices increase they sell the balance and earn a higher profit. A part of the additional income is shared with the farmer who agrees to sell at a lower price during the glut season.

The close relations that have developed between Ranasinghe and his friends emphasizes the significance of social networks and shared stocks of knowledge for reshaping life worlds and for internalizing many components of external intervention. The organizational

capability of these farmers was able to neutralize effectively the power of intervening parties, providing the farmers with a degree of countervailing power.

General Tendencies of the U1

Besides these three friends, other settlers in U1 now have the confidence to apply their own farming methods and they thus seek the freedom to do so. About 71 percent of the settlers in U1 demand the right to organize their own agricultural activities and manage labour by themselves. But many UMs do not believe that this should be allowed and continue to impose cropping schedules and other regulations. Under this situation some settlers use the technique of pleasing the management staff by appearing to go along with their instructions, while others more overtly try to escape from administrative control.

Extending hospitality is one of the strategies adopted by some settlers to influence field officials. Offering special meals, drinks and inducements, inviting officials to their homes and open appreciation of the UM's work, are common ruses for drawing the attention of officials to individual problems. This is a method used to ensure the personal commitment of some officials to some favored farmers. This, of course, may develop animosity, since such a relationship may be often viewed as "favoritism".

Such favoritism in the settlement units, even in the more progressive ones, can be misleadingly interpreted as evidence of a rich farmer-UM coalition, whereas in reality it is a part of a farmer strategy used by both rich and poor for extracting certain benefits. Secondly,

most UMs also use this relationship to protect their positions when they feel that they are likely to be accused of neglecting their duties in the settlement unit.

Through this type of relationship farmers attempt to reduce officials' formal power so as to bring them to "the negotiating table". In this way they aim to influence officials not to support the "main project" but instead to support "Farmers projects".

An impediment to this type of relationship (if it exists between a few farmers and the UM) is the possible reaction of the rest of the settlers. For example, many petitions are sent to higher-level officials asking them to hold inquiries about certain practices. But when there is an inquiry into the work of a UM he will seek the support of farmers to provide evidence in his favor, so that disciplinary action from above can be guessed. Being protected in this way by farmers, means that the UM is naturally inclined to support them too. Hence farmers come to play a dual role. While they may help him to weaken the top-down flow of control and supervision that limit his own room for maneuver. They make it possible for him to take advantage of these 'ginger groups' among farmers to develop effective defence mechanism of his own. Throughout this type of relationship some settlers are more able to make UMs to attend to their particular problems and demands, whilst others must negotiate, bargain and fight hard with them for this.

Planned Settlement Unit meetings are given a prominent place in the official agenda of the settlement programme. The UMs are requested to organize farmers into groups, develop close interaction with them and allocate

development activities among them. But farmer behavior is such that any attempt at formalizing settlement activities through settler meetings cannot succeed. For example, when Settlement Unit level meetings are held many farmers keep silent or avoid participation in the discussions if the subject has nothing to do with their own specific problems.

Another strategy for influencing the UM is to ignore totally what he is saying and to start one's own private discussions in the meeting hall. The UM then has to stop his own talk and request that the farmers explain the problems that they are discussing with each other. This provides the opportunity for farmers to raise various questions. Hence, although time is allocated to the discourse of formally-assigned topics, it is rather difficult for the UM to avoid the farmers' topics. On many occasions the UM has to try to force the settlers to participate in his own subject for discussion, but if farmers realize that the UM is attempting to dominate them, then they cease their bargaining. Instead, they argue with each other pretending that there is a major conflict among the farmers. Finally, the meeting ends up without any useful conclusions being reached.

Why are farmer conflicts at unit level meetings so widespread? This question was answered by a farmer in the following way:

"When we try to discuss our problems with the UM he gives an evasive answer and avoids discussion. We go to unit meetings because it is the only reliable place where we can catch him to negotiate. He is a 'cunning' person who organizes these types of meeting in order to go ahead with his planned

programme of action. Since we cannot protest against him directly, we sabotage the meetings by creating feigned conflicts between us. Don't worry, these conflicts are only during the meetings and not in the village".

While some groups of settlers confront the UM directly, the majority in U1 use less confrontationist strategies. Instead they study the UM's lifeworld, and work out ways of diverting actions directly against themselves. Character assassination by exaggerating the corruption and mal-practices of officials is also a popular pastime of farmers. When superior officers or outsiders come to gather information settlers, complain to them about their UMs. According to them, UMs take bribes. They pilfer material assistance given to poor settlers. They engage in private business (such as construction and trading) during working hours. They cultivate settlers land and divert more water to their own crops.

UM's lifeworlds are such that, although they are given formal duties, their priorities for action are usually made according to their own agendas of private life. For example, regular field visits and unit meetings are formal responsibilities but can always be postponed or ignored. Farmers are fully aware of this situation and monitor UM's behavior in order to keep their own "records" on "official" and "unofficial" or "legal" and "illegal" activities of members of the local bureaucracy. Thus, while officials use their own criteria for labelling farmers for the purpose of imposing their own authority, farmers also may retaliate by providing their own evidence on the "corruptness" "inefficiency" or general "bad performance" of UMs. This type of labelling by farmers reduces the real power of UM's since, in order to

avoid damage to their reputation and career prospects, UMs must relax some rules and controls over farmers.

Settler Resistance and Struggle for Resources in U 11
Under Water Scarcity

Water Scarcity: A New Space for Farmers' Struggles in U11

Compared to the direct negotiating power of farmers in U1, discussed above, farmers in U11 face a different set of circumstances and accord a different meaning and identity to their encounters with officials. As shown in Table 13, the main demands raised by settlers in U 11 are centered around irrigation water problems because this unit is located at the tail-end of an irrigation canal. Unlike U1, the settlers in U 11 face a common irrigation problem -water scarcity- and therefore the goals of individual struggles become similar. This encourages strong horizontal linkages and inter-household cooperation. Water scarcity is often attributed by the settlers to the failure of external institutions and management officials. In the opinion of farmers, it is these officials who are responsible for the water disputes that take place in U 11. Field officials, of course, maintain a different view. They argue that water disputes and social conflict emerge because of the poor participation of settlers in irrigation water management. Construction defects in the canal structure are frequently used by farmers as an example of the inefficiency and negligence of technical staff and administrators. Management Staff use the same examples to demonstrate farmer negligence and water mismanagement,

since they accept the soundness of the irrigation construction.

The Challenge of Farmers

Farmers pointed to a number of defects in the main system during my field survey. They did this to support their complaints and to challenge officials to come and inspect the system. Since officials cannot accept these types of challenge they generally avoid field visits. But farmers keep a regular watch on the movements of officials and keep silent until they get an opportunity to hit back. An example is as follows:

During the Yala (dry) season, 1985, I was invited to attend a unit meeting by the UM of Settlement Unit 11. In this meeting there was a face-to-face confrontation and argument between farmers and officials. Some higher ranking officials also participated in the meeting. Therefore it was a rather embarrassing situation for the local officials. The Irrigation Officials started to explain their responsibilities and justify the irrigation construction. According to them, the structure was accurately built and they simply rejected farmers complaints concerning defects in the canal structure. But the farmers had detailed records of each and every place where there existed major irrigation problems and one farmer mentioned the following defects. Many of the irrigation structures in Zone II of System 'C' had collapsed after the second year of construction. The Hungama tank which was functioning as a part of the main canal was washed away. The main bund of the distributory canal No. 202/1 was broken. About 40 feet of the main canal at Agala Oya had collapsed. About 800 feet of

concrete lining of the distributory canal No.S/D/2 was washed away. Several canal structures at Pahala Ratkinda and Viranagama had been rebuilt due to bad structural design. And so how could the officials say the irrigation system was perfect?

Another farmer followed, took his notebook and referred to the following irrigation problems in his unit:

"The water gate of S.D. 9 canal connected to distributory canal No.13 is broken and the full volume of water flows out through this gate during the entire period of cultivation"

"Water distribution from distributory canal no.13 is difficult. In the middle of this canal, water is leaking into a drainage canal"

"A main culvert fixed to the canal is not large enough to deliver water. As a result bunds are flooded. Some Turnouts are not operating and the settlers have to obtain water by making their own illegal inlets."

"To take water to some Turnouts (T.O.68) other Turnouts have to be closed (T.O. 67 and 68A)."

The irrigation officials present had no answers, and eventually a conflict between the management and irrigation staff began. They started to blame each other. The management personnel put the blame on the construction staff for these types of canal defects. Yet, according to construction officials, the irrigation canals had been handed over to the management staff after testing the water distribution in these new canals. Hence

it was the water management officials who were responsible for the problems after they had taken over the irrigation system. There were, then, endless possibilities of passing the buck from one group to another: hardly any official wished to accept direct responsibility.

Under the existing management structure, Irrigation Engineers (IE) at Block level and Engineering Assistants (EA) at the Unit level are supposed to take care of all irrigation problems. The Unit Manager and his Field Assistant should identify irrigation problems and request technical staff to solve them. However, since the number of irrigation problems is high and the procedure adopted is lengthy, settlers in UII were unable to overcome day-to-day water distribution problems through recourse to the existing management system. The Block Manager dislikes complaints from UMs about irrigation problems and argues that such problems should not be brought to him, but should be reported to the IE. The IE, on the other hand, blames settlers for damaging the canal structure and misusing water. According to him it is the responsibility of the UM to introduce better water management through farmer participation. Finally the UM faces a difficult role at the unit level because water disputes are widespread. He may use various alternatives to overcome these problems, but he cannot give an assurance to settlers that their water demands will be met. He is forced therefore to make false promises in order to avoid organized protest. As a result, settlers do not trust him. This leads to a change in the expected relationship between UM and settlers. The enforcement of management regulations by the UM at grass-roots level is felt by the settlers as an undue imposition. In turn, reasonable demands raised by them are frequently

disregarded by the UM on the grounds that settlers are ignorant, disobedient and unknowledgeable of what is best for them. The confrontations that arise from this situation are such that when effective solutions to the problems are raised by the settlers they are simply ignored.

The Nature of Resistance

As a result, the strategy adopted by settlers in U II usually takes the form of non-collective resistance against the unit level programme. Many settlers are involved in illegal tapping of irrigation water. Unlike UI, settlers in U II mostly avoid open criticism. They please officials but criticize them heavily in their absence. Slandering is a common occurrence among this group of settlers. They also cheat officials, which often goes unnoticed or undiscovered. Creating continuous difficulties for officials in day-to-day management by gathering near the Unit Office is another tactic used by many settlers in the UII.

Resistance Through Blocking the Implementation of Planned Programmes

Some settlers believe it is necessary to become a nuisance to the UM, by refusing to leave his office, for example, so that he will be forced to attend to their problems. This group of settlers may also interrupt him when he proceeds with his own programme and objectives during unit level meetings and at the fortnightly farmer training sessions. The latter sessions are devoted to providing training on the methods of minimizing wastage of water, canal maintenance, water measurements and

timely application of inputs. Such meetings are compulsory for UM's, and a progress report must be sent to the Head Office. Settlers often take advantage of such meetings to voice their immediate grievances, sometimes portraying themselves as the most unfortunate victims of the settlement programme, and pretending that they are starving, without food and without any other income. They raise many questions and force officials to answer them and to discuss their irrigation problems. Higher level officials who attend these meetings from Block and Project Office Level try to restrict the time schedule of the meetings. But once the importance of irrigation water management is emphasized, settlers interrupt the officer and request him to discuss their irrigation problems first. Embarrassing higher level officials in this way compels them to record the complaints of settlers. Then in the next training session settlers raise questions about the recorded complaints of the previous session and expect some solution or assurance that something is being done. The ultimate result is a lack of attendance by higher officials after the third or fourth meeting. One settler in UII gave the following advice to others on how to behave during these training programmes:

"All farmers should come to the meeting because there are some supervisory officials talking to us on water management. When they talk about water management all of us should stand and ask them to give us water. If the extension officers talk about better seeds, transplanting and fertilizer use, then stop them and insist that we should have water first. Do not allow them to proceed with their own programme without answering our questions".

In this way settlers in U II have been able to organize them-selves and sabotage meetings by raising demands concerning their own cultivation problems. However, in this confrontation officials also use defensive strategies. For example, when irrigation water scarcity was serious during the 1985 Yala season, the majority of settlers in U II organized a protest. The UM came to know about their plans. At the beginning of one meeting a settler exclaimed:

"We are not prepared to listen to your lectures. To-day we should devote time to discussing our irrigation problems".

The UM then took out his field notebook and said:

"According to our programme, today's meeting is on farmer training. First we will proceed according to our programme and then we can devote time to discussing your problems".

Later, however, after the discussion on farmer training, the UM closed the session saying:

"We have no time left to discuss irrigation problems. So another meeting will be arranged to take up your irrigation problems".

The settlers who had planned the protest looked at each other in dismay and disappointment.

This type of tactic is regularly used by the UM/UIII. His primary intention is to avoid the direct communication of the settlers with superior officers above the UM level. Another ploy used is to talk in difficult technical terms

when answering settlers' questions. Highly technical or professional types of explanation cannot easily be understood by settlers, so further questions are limited. For example, when farmers complain about the scarcity of irrigation water, the Engineering Assistant (EA) quickly switches into 'cu sec' language:

"We have given one 'cu sec' of irrigation water to each settler. According to our measurements all the settlers are getting sufficient water. This is simple to prove from the distributory canal gate indicators. Multiply the number of cu secs by the number of plots and then check the water discharge at the gate. This will always balance".

Since settlers do not conceptualize water distribution in "cu sec" terms, this leads to the following types of confrontations between officials and farmers:

Officer: "We provide one "cu sec" to each water inlet of the settlers. Therefore lack of water may be due to water mismanagement by the settlers themselves."

Farmer: "Give us the required amount of irrigation water. We need water and not "cu secs". Those cu secs never reach our fields. We cannot understand how this so-called "cu sec" solves our irrigation water problems".

Officer: "To solve water problems, organize a water management system at the field level according to our instructions."

Farmer: "We do not have water for water management."

First, give us water and then we can think about water management".

Officer: " Our cu sec method is technically accurate and it is accepted by the Mahaweli Authority. You should measure your water supply."

Farmer: "We cannot show our water problems in cu sec terms. What we can show is our paddy fields where plants are not growing due to lack of water. Your method can be applied only at the water gate level and not in our fields. Can you use cu secs to measure water leakages through channel defects, and illegal tapping?"

Officer: "Settlers are incapable of water distribution due to lack of education."

Farmer: "You consider only the technical possibilities and maintain your field notebooks according to your own assumptions. You avoid taking responsibility for water distribution. Weaker farmers at the tail-end are poor not because of a lack of education, but due to lack of water for cultivation. Your "cu sec" does not reach the poor."

Officer: "We provide more than one cu sec to tail-enders in order to ensure a sufficient amount of water for cultivation."

Farmer: "Those cu secs simply pass to the drainage channels and not to the fields since channel defects are not properly repaired".

Officer: "Farmers are not using water saving methods of farming. For example, they use irrigation water to kill weeds instead of using the weedkillers and pesticides recommended by us."

Farmer: " Cost-saving methods are more important to us than water saving methods. Every aspect of our farming is costly. Have you offered us anything cheaper?"

The above kind of interactions indicate some face-to-face disagreement based upon different rationales. Since the UM is unable to solve farmers' irrigation water problems, farmers have some advantage in the process of bargaining and negotiation. The authority of the UM cannot be applied due to resource constraints. Thus he himself becomes a participant in the ongoing transactional process and withdraws rules and procedures in order to survive among the settlers. As UM/U11 stated:

"Settlers are reasonable. They have a genuine struggle to solve their irrigation problems. I have to face this situation. They come to me and I have to live with them. I have to play an active role on behalf of the settlers in order to convince them that it is not my fault."

Defensive Strategies of Settlers in U111

As stated in Chapter 1, the majority of settlers in U111 are labelled "backward" farmers. They differ from the farmers in U1 and U11 because:

a) They are re-settlers from traditional villages in the Dry Zone;

- b) So-called 'traditional' cultural values are more prominent among them;
- c) They do not participate in the official programme of cash-crop farming;
- d) Their livelihood is largely based on subsistence farming.

It might be assumed that the administration of such "powerless" poor farmers is less problematic than the administration of settlers in U1 or U11. But the reality is different. As UM/U111 pointed out, it is rather difficult to handle the defensive strategies adopted by these "backward", "traditional" farmers (3).

Certain important strategic actions followed by settlers in U111 are based upon their particular life-world experiences and forms of practical consciousness. Their day-to-day encounters with officials have convinced them that the more they avoid or block planned intervention the greater they can achieve their own goals. False complaint is one such strategic action they often use. They appear to accept the orders and instructions given by the management staff at unit level meetings. And so after a very detailed discussion on the importance of using new inputs, such as chemical fertilizer, agronomic practices and new seeds, an extension officer expects all settlers to follow his instructions. They always say 'yes' to all the new farming methods but, in fact, hardly follow them in the fields. Hence they take whatever facilities and material assistance are offered, including agricultural credit, but simply continue with their own subsistence farming-oriented methods. This kind of settler behaviour cannot be easily identified by administrators because strict supervision of individual household activities is impossible. Furthermore the

UM/U111 cannot obtain the necessary information from other settlers because they avoid communication. They try to keep officials at a distance so that their actions remain unnoticed by the administrators.

According to the UM/U111, his management difficulties are as follows:

"The Block Manager insists that I pay special attention to settlers in this unit since their bad agricultural performance is reflected in the progress reports. The Mahaweli Settlement Programme is often criticized by outsiders by taking these poor settlers as examples. Some farmers indeed lease their land and work as agricultural laborers. Therefore, I have to devote more time to bringing the settlers to the Unit Office to motivate them. But they never follow my instructions; nor do they attend meetings. I have to visit each of them and force them to come to my office. Sometimes they come but they never tell me their cultivation problems. They often keep silent. I have difficulties implementing my programmes with this type of settler. Finally, I felt that these settlers were poor because they were not eligible to borrow from the banks since they had defaulted on previous loans. So I made a special arrangement to reschedule bad loans and give them new credit again. When I asked whether they needed credit, everybody said 'Yes'. Cultivation loans are given with detailed instructions on how to utilize borrowed monies for productive purposes. They went away with the credit. At the end of the season most of the settlers had defaulted on their loans as they had done before. During my investigation almost all the

defaulters said that they had had irrigation water problems and crop diseases. Later I discovered that many of them had leased out their lands. No action could be taken against them, even though they had been deceptive in their claims, because there was a lack of evidence to prove it. Even when credit defaulters are detected they give various excuses for non-repayment of loans: a poor harvest, family sicknesses, maintenance of large families, which are usually impossible to check at the time of inspection. They also cooperate with each other to safeguard themselves by defending their members."

Settlers are, of course, quite capable of exaggerating their poor living conditions in order to get the sympathy of officials. This includes behaving with a special mendicant attitude in order to obtain aid and assistance. The main demands listed in Table 13 also illustrate their attitudes towards financial and material aid allocated by various agencies, such as CARE, UNICEF, and the Department of Health. About 82 percent of them, for example, wanted more subsidies and mentioned this as the first priority. About 81 percent of the settlers demanded World Food Aid during bad seasons.

Once the UM has failed to deal with settlers using coercive measures, he eventually settles for managing friendly relations and having sympathetic dealings with them. It is important to recognize, though, that these so-called "sympathetic dealings" represent the UM acknowledging his failure to impose authority, while defensive strategies of "powerless" farmers demonstrate their power to block the implementation of planned programmes. It remains a difficult task to detect mistakes and a real problem to make changes.

Even though the agricultural policies and settlement strategies adopted were formally the same in all settlement units, the relationship between the Unit Manager and farmers in Settlement Unit U111 was different from that in U1. The types of interaction and relationship that occur between the UM and the farmers in this settlement unit expose both the lack of coordinating power among field-level officers and their inability to impose on farmers the officially-determined rules of the game. The UM failed to influence farmer behaviour with respect to timing of cultivation, extension, credit, and technology. Many farmers continued to abandon the official programme which, as I have argued earlier, is not easily identified by field officers, since it involves various strategies by the settlers designed to mislead, cheat or pass unnoticed. Such measures require a special type of interaction between farmers and officials.

From the Mahaweli Authority's point of view, the UM's active involvement, particularly in weaker settlement units such as U 111, is necessary for changing farmers' attitudes and forcing them to follow the instructions of development agencies and seek assistance from the institutions that provide inputs and services, so that they eventually become "progressive farmers". Yet a fundamental constraint in achieving official goals is the contradiction between officials' assumptions regarding the ideal farmer, and the farmers' own beliefs concerning their future situation. Since these two parties are trying to achieve goals which are strikingly different, there develops a struggle between the officials who attempt to incorporate farmers into the mainstream of development and the farmers who resist incorporation.

While officials use their statutory powers to try to control farmers' independent decisions, farmers attempt to block the implementation of the planned programme and thus constantly create difficulties for officials. The following case study explains how this struggle takes place at settlement unit level.

The Case of Siyathu Banda (reference- T12/D2/33): The Forms of Power Used by a "Backward" Farmer to Control the Authority of Officials

The UM's View on Siyathu Banda's Livelihood Strategies

When I selected Siyathu Banda's family for an in-depth case study on farmer behavior, the UM opposed this on the grounds that this family was quite "inefficient" and "backward" in carrying out the Mahaweli agricultural programme. He was extremely disappointed with the performance of many farmers in his settlement unit (U111), including Siyathu Banda, mainly because his superior officers were likely to interpret the 'backwardness' of these farmers as resulting from his own administrative incompetence. According to the UM, most of these farmers do not follow his instructions and they often evade the agricultural tasks allocated to them. Siyathu Banda not only leases out his land but also misuses bank loans and other facilities provided for him. Therefore he is no longer 'an ideal farmer' fit to be included in a study. The UM explained the difficulty as follows:

"Siyathu never follows my instructions. But I cannot take any actions against him because he is a poor farmer. Since he is poor, I cannot recover the loan

he borrowed from the bank. This farmer always has many explanations. When I meet him he always has serious problems, such as his cultivation was very bad due to crop diseases and water logging, his wife is expecting a baby, a child was seriously ill just before the last Maha (wet) season, or he got malaria fever".

It is quite embarrassing for the UM to face this situation and it is difficult for him to take coercive action. According to him, Siyathu Banda's life is miserable and because of this no legal action could realistically be taken. Siyathu Banda is provided health and other subsidies that are available for the rehabilitation of "weaker farmers".

Although Siyathu creates this 'miserable' image among officials, his real life is different. He is one of the more active farmers. He is also the treasurer of the village Buddhist Temple Society. When I asked why he was adopting a dual and inconsistent role he told me that he is compelled to paint an incorrect picture about his real life when local officials come to make inquiries. According to him, life is not that miserable but deception is a strategy that can be used to avoid coercive action and intimidation by the UM. He simply ignores regulations and instructions: he is not in a position to bargain with the UM.

The Official Image of the "Weaker Farmer": A New Space for Using Siyathu Banda's Power

According to Siyathu Banda, if he has problems with officials, then feigned incompetence can be used as a

strategy for managing them. Such feigned incompetence and deception creates considerable confusion and misunderstanding among field officials and this is precisely what Siyathu Banda wants to achieve. As a result, officials cannot go ahead with their own programmes and policies and it becomes necessary to recast policies in line with more realistic expectations that are more favorable to the farmers. For example, the UM identifies such farmers as the 'backward' or 'weaker' ones who should be brought under a special rehabilitation programme. This rehabilitation involves providing subsidies and community development assistance. As Siyathu Banda sees it: " It is better to be a so-called 'backward' or 'weaker' farmer so that one is left out of the official compulsory farming system, and in order to receive more assistance".

This attitude should not be viewed as an emotional reaction to an immediate situation. According to Siyathu Banda, it is the result of a long-term struggle to organize his family farming on the basis of his own experience and experimentation. Some important events in Siyathu Banda's changing livelihood situation can be summarized as follows:

Siyathu Banda's Experience with Official Programmes

Before 1981, Banda lived in his original village, sited in the same area as the settlement scheme. All his relatives who lived there had land attached to a small irrigation tank for the cultivation of varieties of paddy during the Maha (wet) season. He was able to manage his family's subsistence needs mainly because there was no restriction on chena cultivation (extensive highland

slash and burn cultivation). The latter depended essentially upon the capacity and willingness of the farmer to produce under a system of collective work and labour sharing. He regularly cultivated five acres of kurakkan, chillies, ginger, green gram and vegetables. Together with other members of the village, he carried out many experiments, studying agricultural problems under various resource conditions, and making appropriate changes to his farming system. Mixed cropping of a number of food crops was adapted to cope with irregular rains and other risks. At that time, kurakkan, together with cowpeas were the major food crops, and not paddy. These products were not commercialized but stored for domestic consumption. The only crop he sold was chillies, which were cultivated especially for the market. The costs of production were very low in monetary terms and labour was pooled under a system of exchange labour. Nearly everybody in the area had cattle, including draught animals. Some families had as many as 20 to 30 head of cattle. Banda commented that he generally had no difficulty in getting draught animals for cultivation.

He continued to live in this village for some 20 years, when, in 1981, the entire village was taken over by the Mahaweli Authority and resettled. His family was allotted 2.5 acres (about one hectare) of land. Their cattle had to be sold, since there was no pasture land left to maintain them. He also lost his mixed food crop production for family subsistence. In the first season he received instructions from officials on how to use chemical fertilizer and recommended seed varieties. Following this he cultivated one acre with chillies and half an acre with paddy. He could not clear the remaining half acre in time because the rains set in early. For that period he says he obtained a loan because officials

advised him to take one. He harvested 21 bushels of paddy from the half acre which he cultivated. He spent about Rs.2500.00 for chillie cultivation but harvested nothing, as all the plants were spoiled by too much water.

He borrowed from banks, bought fertilizer, used new seeds and followed outsiders' instructions for the first time. But when he faced difficulties at the end of the season, those same officials could offer him no practical solution. Moreover he had to depend heavily on the market for the sale of his crops, for the purchase of agricultural inputs and for consumer goods. Because of the lack of food crops for household consumption he became tied strongly to the market. Money was needed for daily subsistence and when none was available, the family livelihood was threatened. He could not pay back the loan and became a defaulter; and in this way he obtained a bad name for the first time in his life. His plot was located at the end of the field canal close to a drainage channel. Due to the low-lying nature of the field, water did not drain out and, to make matters worse, water from the drainage canal came in. The result was that salinity quickly set in. Officials advised him to invest money to improve the quality of this land, but all suggested solutions were costly. New technology and new methods mean money and are useless without operational capital.

When cultivation problems became serious among this group of Mahaweli settlers, complaints were made to the political authorities (i.e. to the Minister of Finance through Members of Parliament). And so, finally, a decision was made to 'reschedule' all the defaulters of government loans a political gesture. In this way Banda was able to borrow Rs. 6000.00 again from the bank. But, this time, he was determined not to invest in

cultivation until the UM had found a solution to his drainage problem. He made many complaints but the problem was ignored. Nevertheless, the officials insisted on him cultivating his land since he could claim crop insurance if the crop failed. Thus, despite all his uncertainties and his lack of confidence in officials, a part of the land was cultivated. This time he produced only 25 bushels of paddy. Once again he complained to the UM, expecting to receive payment through crop insurance. Yet, after travelling ten times between his home and the project office, over a period of about two months, he received only Rs.60.00 for the loss of his crop, because, according to officials, insurance could not be paid for damages due to salinity. As a result, his debts to the bank and traders increased: by this time he had used all his money for consumption purchases and so, finally, he ended up with only one possibility: namely to adopt his own farming methods and organize his own programme of cultivation.

In the circumstances, he decided to cultivate vegetables, food crops and paddy in accordance with his previous village experience. Soon after planting, an officer told him that what he was doing was illegal. According to Mahaweli cropping plans, he was supposed to cultivate only High Yielding Varieties of paddy recommended by the Mahaweli Authority. Siyathu Banda explained that his cultivation was planned only to meet his family requirements. He argued with the UM and asked whether it was illegal for him to produce food for the family. But before the next season, Mahaweli officials insisted that he attend a farmers' training class. During this training programme officials explained to him many farming methods, but he claims he did not understand any of them. Since, as he put it, the type of farming that

the Mahaweli officials wanted him to practice was "far too complicated", he decided to continue with his own farming. This time officials forced him to stop "illegal" cultivation, and took him before the Block Manager(BM). In answer to the BM, he explained that he had not stolen any thing: neither had he harmed anybody. He was just farming to feed his seven children. If this was illegal then he requested the BM to put him in jail. The BM decided not to take any action, but simply advised him in the future to follow the UM's instructions.

The Success of Siyathu Banda's Own Strategies

According to Siyathu Banda, this was a substantial achievement. His farming system required much less irrigation water, but the UM was ignorant of this and thought he could control him by denying him to access irrigation water. However, this strategy failed because Siyathu Banda retained only a little irrigated area for his own use and the rest of his farm he leased out. Siyathu Banda presented the practice of leasing out in a positive light, as one of the strategies of his own choosing.

The relatives and friends of field officials were particularly interested in leasing lands from farmers. Farmers, on the other hand, took full advantage of this situation and began to lease to them their poorer lands (i.e. land with levelling problems, canal defects, water logging problems etc.). Such tenant cultivators were expected to take care of the necessary repair and maintenance tasks. Siyathu Banda also decided to lease out the fully-irrigated portion of his land for a very low rent to a person known to the UM. During this

particular season the UM and the tenant got together and utilized the Mahaweli funds to construct a drainage culvert. Once the problem was solved Siyathu Banda took back the land and leased it out to a new person for a higher rent.

The officials drew the conclusion that Banda was too lazy to work on his land. This, in turn, influenced his own mistrust of them. He had realized from his own experience that officials' assumptions about "ideal farmers" were wrong. After all he himself had failed, following their advice, to ensure his family's subsistence through dependence on markets and external agencies.

The Development of Siyathu Banda's Own Farming System Based Upon His Previous Experience

Siyathu Banda was confident that his way of organizing farming provided protection against various risks. During his life in the "traditional" village, the main threat had come from wild animals (particularly elephants) and from water shortage. Fencing, watching and protecting crops from wild animals had been effectively managed on a collective basis. Organizing agricultural activities against drought and water scarcity entailed the following types of strategies: a) mixed cropping with drought resistant varieties of paddy and other food crops, b) sharing cultivation of irrigable land according to the 'bethma system' (i.e. reducing the area cultivated and dividing it among the farmers regardless of ownership), and, c) working according to the 'pangu system' (i.e. reciprocal sharing of labour, inputs,

production and maintenance work in accordance with the shares owned by each farmer).

But, under the Mahaweli Settlement System, the threat to the family came in the form of unidentified risks and uncertainties involved in the compulsory cultivation of commercial crops. These new forces could not be eliminated as they were manipulated and controlled by actors associated with external agencies; and reinforced by various incentives aimed at encouraging farmers' voluntary commitment to the new commodity economy. Siyathu Banda needed new strategic actions and types of behaviour to deal with these new external forces.

Siyathu Banda's response is to combine a number of old and new activities, diversify livelihood strategies, and to incorporate his own ideas and experience into the management of the household unit of production. For example, he leases out one acre (half of his land) for which he earns Rs. 1000.00 per season. Here, he plays the role of landlord setting the rent for his tenant. Although the commoditization process in the Mahaweli settlement makes it difficult for him to accommodate to this new style of commercial farming, this does not lead him to separate himself altogether from the means of production. Instead he obtains a higher return from his land through renting out.

Ande (4) cultivation in the rest of his plot gives 50 to 60 bushels of paddy as his share of production. This amounts to about Rs. 5000.00 per season. He also has Rs. 4000.00 unused money borrowed from the bank which he has not paid back. Since he is utilizing only part of his family labour to cultivate only a small area of his land, he is also free to work for a daily wage. Thus he

and his wife work as agricultural laborers, using their free time. From this they earn about Rs. 2100.00. This daily wage is mostly used to cover daily consumption needs. Furthermore, since his family members are very keen on growing food crops and vegetables, Siyathu Banda has leased at a very low rent a nearby plot of irrigated and abandoned land. During the Maha (wet) season his family cultivates food crops on this land in order to supplement food requirements. In addition to these various incomes, he is also entitled to receive subsidies and material assistance provided to "weaker farmers" by the Mahaweli Authorities.

When all these benefits are added up, Siyathu Banda's family lives more or less close to the level of an ideal Mahaweli farmer. Although he sells his labour (about 25% of the total income of the family), this is not sufficient to categorize him as a semi-proletarian. Secondly, his involvement in wage work fluctuates considerably according to many factors, such as his spare time available, amount of cash available for purchasing basic family goods, and the market for wage work within the area.

Siyathu Banda's responses to various circumstances and his changing behavior during different stages of the Mahaweli family farming scheme must be interpreted in terms of his own perceptions and experience. His case reveals that, despite the various attempts to promote commoditization which binds farmers more and more to external markets and institutional structures, farmers can also use their own strategies for organizing family production in the face of changing socio-economic conditions. Thus, farmer behavior cannot be fitted into,

or subsumed within, an externally-assumed logic of development.

Siyathu Banda has adopted multiple strategies which combine subsistence farming with some aspects of the commoditized market economy and wage work. Such forms of production cannot in practice be explained as a replacement of one mode of production by a more dominant one, since farmers use distinctly different and diverse farming methods in accordance with their own logic of survival. Such production relations and their combination are shaped by differential patterns of household response.

The differences that exist between the theory and practical reality of the life of settlers in the Mahaweli settlement is further elucidated by the way Siyathu Banda interacted with a foreign consultant when the latter visited the settlement area. The consultant came to study farmers' health problems and to implement an educational programme. One day he visited Siyathu Banda's family. According to Siyathu, the foreign expert observed his living environment, took some pictures of the family, and then started to talk. His talk was translated into Sinhala by a local translator.

First, he wanted to explain the troubles and suffering that a farm family would endure if Siyathu produced too many children. Siyathu Banda wondered why this foreigner was worried about his children, but he continued preparing his betel nut for chewing without showing any response. Secondly, the foreign expert wanted to communicate (with various explanations concerning dangerous diseases, malnutrition and preventive health care etc.) that, if he had too many children and ignored

the basic health requirements, this would lead to more diseases, more suffering for his children and would end in their deaths. It took about 15 minutes to explain these ideas to Siyathu Banda. According to Banda, all this was completely external to his life-world. So he carried on chewing betel, again making no response. Finally, the foreign visitor asked directly whether he understood the danger of neglecting the preventive health care of children.

Throughout Siyatu Banda was aware that this foreigner would disappear after his presentation. He reasoned therefore that he should extract some benefits from him. Since his life apparently had such serious problems he should at least receive some financial or material assistance! According to Banda, many foreign and local officials come and give instructions to do this and that. Then they go away and Siyathu Banda has to go back to his own way of living. That is mostly the end of the matter.

According to him, many health officials have been employed to educate children in health care and hygiene, such as washing their hands before meals and dressing in clean clothes. But the children who learned how to clean their hands before meals do not have clean food. They are also asked to use clean clothes, and yet small children run naked because their parents can not afford to buy clothing. According to him, naked children are cleaner. Why should we dress and make them dirty?

Many officials are themselves interested in agricultural production because they cannot afford to buy expensive food from the market. They often collect vegetables, fruits and other grains when visiting farmers in order to avoid high market prices. The officials themselves,

therefore, cannot work according to the market theory they want farmers to practice. Siyathu Banda believes that involvement in the market (or as he puts it, "in a buying-and-selling type of agriculture") is very insecure. Hence he feels he ought to make the family unit more sustainable by organizing farming activities around the subsistence needs of the family.

Siyathu Banda's case indicates that new forms of resistance to imposed styles of living tied to the market economy do indeed arise, thus creating obstacles to the achievement of agricultural modernization.

The Producers' World

This chapter has concentrated on farmer strategies in the three settlement units. The first part of the chapter examined how intervening parties failed to integrate farmers vertically into the formal institutional structure through the establishment of Turnout Groups. I highlighted the essential shortcomings of attempts to organize farmers so that external objectives could be realized. Farmers were able to use the weaknesses of these imposed participatory structures to pursue their own goals. The second part of the chapter focused on the differential responses, strategies and outcomes in the three settlement units, and analyzed the contrasting local problematics of planned intervention in each settlement unit. Although farmers in U1 are in a favorable position regarding access to irrigation water, they have gained additional power through the development of horizontal relationships and communications which they mobilize in their direct negotiations with local officials. In this way the authority structure at local

level has gradually been transformed into a negotiated order.

Farmers in U11 are faced with severe irrigation water problems and this creates common ground for struggle. This takes place through day-to-day encounters and face-to-face bargaining with officials over the official methods of irrigation water distribution. Here I showed how farmers monitor and evaluate the defects of the irrigation system and the role of officials, using concrete empirical examples in order to counteract the imposition of already-fixed agendas of planned development. Since officials have neither an answer nor a solution to farmers' complaints, they are forced to participate in farmers' projects, even if such involvements are, according to rules and formal procedures, considered illegal.

Although officials labelled farmers in U111 as "backward" and regarded them as "powerless", the latter were able to acquire forms of power in the realization of their own goals. This group of farmers, then, became a major constraint on planned intervention. The officials were unable to influence them because they did not possess sufficient legal or political means to control farmers' livelihood strategies. At this point I also explored the differential responses, strategic actions and interactions among the more "powerful" farmer groups. Some farmer groups could identify goals and common interests based upon water scarcity in their struggles with the bureaucracy.

Local officials and their field stations are surrounded and affected by these complex local social processes. Indeed they have been converted into locally-rooted units

of intervention by the people who occupy and operate them. Thus the image of development agencies in Mahaweli settlements is significantly shaped by local transactional processes and struggles, although these externally originating institutions continually attempt to justify themselves and their actions by reference to notions of planned intervention and so-called rational 'management strategies'. Farmer strategies, on the other hand, are gradually transformed into a differentiated pattern of social and political struggle, which, in turn, has ramifications for broader patterns. These processes generate new forms of practical consciousness and social invention among farmers, that spread beyond the boundaries of the local arena and beyond the framework of planned settlement development. The next chapter analyses the significance of farmer-trader relationships under the emergence of intermediary structures.

Notes

1. During my research among settler families in the three settlement units, I recorded farmer perceptions on external factors involved in their livelihood problems. These problems were closely related to external forces, such as government administration, water distribution, commoditization, market exploitation and corruption. Almost all the settler families could identify their own specific demands, hidden intentions and undiscovered goals, depending on the type of practical difficulties and constraints they faced in their everyday life. The following methods were adopted in the categorization of the main demands shown in the table:
 - a) All demands mentioned by the settlers for negotiation with UMs were recorded.
 - b) The records were compiled according to the priorities given by settler households.
 - c) Taking these priorities into account, all the records were grouped into the main demands listed in the table.
 - d) Records not on the agenda of settlers have been ignored since they are not considered important.
2. The fact is, that although a considerable amount of research and training has been carried out in project offices and development centers, many of the results have been shown to be viable only within the walls of these institutions. Farmers often came to regard them as attempts to implement the most unreliable and expensive agricultural methods which

were not of much use for the sustainability of farming systems adopted by the farmers themselves.

3. James Scott in his book Weapons of the Weak: Everyday Forms of Peasant Resistance, provides a more elaborated discussion on the vast and relatively unexplored middleground of peasant politics, ranging from passivity to open collective defiance. He focusses attention upon the ordinary weapons of subordinate groups, ranging from clandestine arson and sabotage, to foot dragging, dissimulation, false compliance, pilfering, slander, flight and so forth. These ordinary weapons of relatively powerless groups are stronger than the organized actions of administrators, since the peasantry is better suited to extended guerrilla-style campaigns of attrition which require little or no coordination. The settlers in UIII also use similar strategies, thus demonstrating the persistence of peasants' own organizational forms, frequently ignored by theoreticians who assume that such mechanisms are inoperative in modern societies (See also James Scott and Benedict J. Tria Kerkvliet in South East Asia Journal of Peasant Studies, Vol.13, No.2, 1986).

4. Ande farming is a popular cultivation practice among farmers. 'Ande' means inviting another farmer or farming family to share inputs and the labour involved in the cultivation of a specific plot. This is also a means of re-establishing household cooperation among farmers who cannot adapt to new commercial agriculture.

CHAPTER SIX

MARKET INTERVENTION AND STRATEGIES OF TRADERS

In previous chapters I analyzed how local officials and farmers behave and interact with each other to realize their own goals within a situation of planned government intervention. The differential strategies of these individuals and social groups generate a diverse pattern of social and economic relationships that shape the structural outcomes of intervention. This process indicates not only the gap between macro-level planning and micro-level needs but also how actors (both local officials and farmers) modify and re-order settlement procedures and regulations in order to develop their own working principles and modus vivendi in the process of settlement development.

A full understanding of the complex interplay of these external and internal relationships and their implications is difficult to attain only by elaborating the ways in which the settlement management system operates in the face of settlers' strategies and modes of resistance. It is equally important to ask why these interacting parties do things quite differently from that expected by planners? Also what are the reasons for variations in attitudes and behaviour? These questions cannot be answered without analyzing the role and strategies of traders in the development of settlement agriculture.

My concern, then, in this chapter is to observe how traders as a group of actors develop their relationships with other actors through the exchange of commodities. Rather than assuming that the market dominates, it is important to understand the precise ways in which traders interact with others and organize their activities and transactions in relation to the behaviour and strategies of other people in the market. In this chapter I examine the significance of market intervention and the changing relationships between traders and family farmers. Increasing commoditization in settlement agriculture provided, the basis for traders, moneylenders and other businessmen to establish themselves in the settlement. They now play an important role as intermediaries, their strategies and interests centering around the accumulation and circulation of merchant capital through the operation of exchange relations.

This kind of relationship between farming households and traders/moneylenders, under highly commoditized agricultural production, is viewed by structuralists as consisting of a strong vertically-controlled set of relations, which leads to a production and reproduction squeeze on rural producers. Yet, contrary to this type of essentialist view on farmer-market relationships, counter-tendencies emerge at local level. For example, market dependency itself is a means of motivating or influencing farmers to re-adjust their life strategies against such dependency. Secondly, a large number of traders in the Mahaweli settlement compete with each other to attract settlers in order to minimize their business risks. As a result, the inter-dependency between trader and farmer becomes more crucial than farmers' dependency on the market. Such inter-dependency brings traders closer to farmers than is often assumed.

Orthodox conceptualizations of farmer-market relationships place emphasis on the structural characteristics of commodity producers and narrowly define the social relations and interactions of the actual participants in the process. Hence production and the social relations of individual units of production are wholly predicated upon the principle of the market. Moreover, if we analyze the so-called "victimization" or "marginalization" of farmers as a structural process, then we must, at the same time, also assume that the process of merchant capital penetration works in favour of the dominant class, to the detriment of a large number of farming households. Such an interpretation can, however, be misleading if farmers' responses and behaviour in the face of these changing circumstances are not adequately taken into account and analyzed. This is important because a common feature of everyday activities in Mahaweli settlements is the presence of various external commercial agents and institutions, including traders and businessmen, who are pursuing their own strategies of intervention, just as the farmers themselves discuss and plan strategies for escaping from such pressures, if they judge that their own goals of family survival are likely to be threatened.

Market intervention in the settlements creates a problematic situation in which farming households are forced to organize their activities according to the vicissitudes of the changing market situation; and traders also change their intervention strategies not only in accordance with the market but also bearing in mind the reactions of farmers and the increasing competition of other traders. Hence settler-trader relationships are shaped by the on-going social

commitments and negotiated transactions between them. These relationships include patron-client relationships, friendship, and sometimes entail the abandoning of market relationships through the cultivation food crops for family subsistence. In this chapter I discuss how planned intervention has influenced the life styles of farming households through the expansion of market relations and commodity production. These forces, however, have failed to bind farmers strongly to the market. Instead, the commoditization process motivates them to engage and activate various social relations to resist the process of deepening commodity relations. Secondly, I will analyze the changing trade patterns in the settlement and the formation of intermediary structures in response to the changing circumstances of planned intervention. Finally, I will describe the emergence of the traders' lifeworlds based on increasing interdependency between them and the settlers.

There has been a rapid expansion of cash-crop farming and marketing in Mahaweli settlements. As a result of the monetization of the production process, farming households became involved in a struggle for cash. This "hunger for cash" implies a lack of purchasing power among settlers. If farmers cannot at least maintain a certain level of cash income and purchasing capacity then traders simply cannot extract profit. In such a situation both parties must develop strategies and explore alternatives. As I discuss in the following sections, the so-called commoditization process in Mahaweli settlements creates a situation of interdependency among farmers and traders who develop social relations and share problems within of their lifeworlds.

Separation of Farming Households from Mahaweli Construction and Commercial Activities

Rapid expansion of trading, moneylending and other commercial activities in the Mahaweli Settlement Scheme resulted basically from the major shift in government policy from inward-looking to more open-market policies. In 1978, the government decided to relax import restrictions and so duties on imports and exports were drastically reduced. The private sector was provided full freedom under this liberalization of market policy. Leading public organizations such as the Electricity Board, the Transport Board, the Milk Board, and the banks were privatized. The placing of market liberalization and privatization on the agenda of government was, it seems, largely due to external pressures from international donors and banking agencies. When the government required foreign exchange and capital of various kinds for the implementation of the Accelerated Mahaweli Programme (AMP), the International Monetary Fund (IMF) offered its favorite packages, namely, the devaluation of the Sri Lankan currency and an open economy and privatization. These were the main lines followed by government.

By 1985, the 1977 estimate of Rs. 12 billion for the full Mahaweli Programme, had become Rs.40 billion for a reduced programme, irrigating 120,000 hectares of land, much less than was originally planned (Economic Review, 1985). With massive public investment and the support and encouragement given to the private sector, the economic interests, attitudes and business techniques of private entrepreneurs began to change. They began to realize that trading, moneylending and construction work within the Mahaweli Project area was more profitable than investing directly in agricultural or industrial production. With

changes in Sri Lanka's economy and political environment, various groups of entrepreneurs quickly adapted to the commoditization process by taking advantage of these new commercial opportunities emerging in such leading development projects as the Mahaweli.

During the first stage of settlement development, starting in 1979, commercial entrepreneurs from the urban areas established themselves as contractors for small- and large-scale construction work such as canals, roads, official residences and land development. Some of them became supply agents for consumer durables and household equipment to the large number of engineering, technical and administrative staff and other personnel involved in the design and supervision of settlement construction.

The success of their businesses was, of course, largely dependent upon their capacity to influence settlement officials. The engineering staff took decisions on the allocation of construction work to private contractors. The technical staff supervised their work and the administrative staff made the required payments. Thus at each level of the construction business an entrepreneur had to satisfy a different set of Mahaweli officials for the clearance of formalities and to demonstrate that he was abiding by regulations. If bureaucratic procedures become a barrier to the smooth operation and maximization of profit, then the entrepreneur had to spend a considerable amount of his commercial capital and time on pursuing the operation by covert means. This involved bribing, paying a share of the profit as a commission, offering valuable gifts or using political connections. In this chain of activities, linking contractors and the management bureaucracy, many officials were able, with the help of commercial entrepreneurs, to earn extra

income. Although some commentators have advocated the superiority of bureaucracy (Weber, 1946) over other forms of social organization, in this context it becomes less and less significant because bureaucratic behaviour in the business environment clearly deviates from a strict adherence to impersonal rules. On the contrary, impersonal rules are often manipulated by the officials for their own personal ends. Hence personal economic gain, which becomes possible through an alliance with merchant capital, offers a popular source of income for officials because of its low risk and short-run returns. Such gains are achieved through the development of economic transactions shaped by the working procedures and relationships that evolve between local officials and entrepreneurs. Therefore merchant capital penetration is not simply an automatic process with its own law of motion. It consists of an intermediate structure that emerges to make it possible for capital to penetrate and serve the interests of the various actors involved in its operation.

Planned intervention in the Mahaweli has a set of rules and procedures which are designed to protect family farm settlers. These rules become a barrier to other groups (such as traders, contractors and officials) from entering the sphere of production and production relations. For example, the cultivation of a settler's land by an outsider is illegal and only owners of the land are legally entitled to use agricultural resources. On the other hand, settlers themselves are supposed to be involved only in agriculture; and the construction business and trading are the main economic activities open to outsiders. Taking advantage of this provision, local officials, traders and contractors within the settlement region, have developed their own modes of

extracting maximum benefit from the construction and trading. Hence it is these groups that operate as the local "penetrative mechanism," and they have their own networks developed for the achievement of this goal. The most important feature of the collective and individual strategies of these actors is that the "entry points" available for the outside world (in this case people from outside the settlement region) are either closed off or controlled by these local groups who now occupy this particular economic terrain.

The policy makers of the Accelerated Mahaweli Scheme designed a programme to incorporate outside commercial entrepreneurs, settlers and settlement officials into a 'combined group' for settlement construction and development. This was known as the Worker Settler Programme whose objective was to provide a better opportunity for settlers to participate in irrigation construction as medium- and small-scale contractors, so that not only the quality of irrigation construction would be improved but also a considerable amount of Mahaweli funds would be channelled into the hands of settlers who could then invest in agriculture. This was regarded as a sound solution to the livelihood problem of settlers during the 'transitional period'.

The aim was not only to stimulate various kinds of infra-structural development. There was obviously also an intention to stimulate settlers and other inhabitants of the area to engage in trade and other ventures rather than simply letting outsiders take over. This was a meritorious idea since it implied that linkages within the regional economy would be stimulated, which would counteract linkages to established areas and centers outside the system. In this way it would generate extra

income-earning opportunities especially for the second and third generations of settlers within the area (Lundqvist, 1986).

Although this concept was valuable, both Mahaweli officials and entrepreneurs manifested a negative attitude towards the Worker Settler Programme from its inception. A coalition of entrepreneurs and officials backed by merchant capital began to operate 'underground mechanisms'. As a result, commercial entrepreneurs gained access to the more profitable part of the construction business, while the entrepreneur settlers were given only very difficult and low-profit construction work. Secondly, the approval and payment for irrigation construction carried out by the settlers was frequently delayed, making it impossible for many of them to survive and continue their construction work. Finally, therefore, the programme became a total failure.

There was a close link between merchant capital and the government investment programme at various levels. The relationship between management officials and local contractors was strongest in the construction sector. The most striking feature of this relationship was the separation of the settler community from these activities, which effectively left them out of the entire operation. Public funds, including foreign assistance for the development of the Mahaweli Settlement Scheme, were channeled through the settlement authorities to approved contractors, thus keeping the flow of public resources to the settlers at a very minimum level. In the circulation of merchant capital, profits were extracted and drained out of the settlement into the hands of the bigger traders and businessmen based in urban centers. This set of commercial entrepreneurs were not involved in

plundering the assets of family farmers but instead they entered into different forms of plundering project resources. For example, when private businessmen were given jungle clearing contracts in the System 'C' area, they destroyed the forest cover of the Maduru Oya Reservoir and other reserve forests, in order to extract valuable timber. Later a large amount of government funds had to be invested in afforestation, thereby generating even more commercial opportunities for the same traders. But, as I described in Chapter 3, most irrigation construction undertaken by private contractors was far below expected quality. Moreover such activities were not only environmentally destructive but also led to unsustainable forms of commodity agriculture.

However, the construction business in the settlement scheme was limited to the initial stage of the project. Those large-scale contractors who had political clout later shifted to new areas, while the medium- and small-scale contractors, who had already developed good relationships with the local officials, remained in the settlement area and established themselves as leading traders in the townships and village centers. It was this new group of traders who eventually destroyed the existing small-scale retail trading activities of the settlers.

Increasing Uncertainties and Risks of Market-Dependent Household Survival

In order to utilize new irrigation technology and to impose new administrative machinery, all the settler families and resources in the area were brought under the control of the Mahaweli Authority. The settlers were then

forced through a state-organized programme to cultivate cash crops for the market. This intensive cultivation required new technology as well as new inputs. Thus independent peasant agriculture was replaced by a new commoditized system whereby families competed in the market for the sale of their output as well as for the purchase of agricultural inputs and consumer goods. The rapid growth of the internal market and the expansion of commercial transactions between the settlements and urban centers, and the growth of consumer goods (both manufactured and imported) and agricultural products exchangeable in the market for money, thus became dominant features of settlement development.

Extensive methods of cultivation, involving the rotation of plots, were replaced by the intensive cultivation of one plot on a regularly basis, requiring new inputs such as chemical fertilizer, weed killers, pesticides, credit, machine power, etc. Animal draught original was a 'free' input available in the villages but it could not be used under the new settlement scheme because of the lack of pasturage. The settlers, therefore, had to depend on the machine markets and especially on traders who hired out tractors.

Due to the lack of food crops available for consumption, there was a regular demand for wheat flour and bread; and the clearing of the jungle destroyed important herbs and indigenous medicines, leaving the settlers dependent on western medicine, thus increasing the demand for manufactured drugs. Because of such changes there was a sudden increase in the costs of production and consumption. A new demand for consumer items was created which had to be satisfied on a commercial basis. The settlers were provided with plots of 2.5 acres but were

cultivate paddy, even during the Yala (dry) season, by controlling the supply of water. Therefore settlers had to devise their own strategies for dealing with this situation.

Table 16 Average Daily Expenditure on Basic Consumer Items for an Average Family of 5 Members (1980 prices as base)* Three Settlement Units (25% sample). (Aggregated data).

Item	During village life before moving to the Settlement			Under the New Settlement		
	1980 Rs.			1983 Rs.		1985 Rs.
Breakfast meal	1.00			3.00		6.00
Coconut	0.75			2.00		4.50
Fish	1.00			1.50		6.00
Vegetables	-			1.00		3.00
Onion	-			0.75		1.00
Chillies	-			1.00		2.00
Spices	0.75			1.00		3.50
Sugar	0.60			2.00		6.00
Tea	0.20			1.00		3.00
Betel	0.50			1.50		3.00
Tobacco	0.80			1.75		3.00
Soap	1.00			2.50		3.50
Kerosene oil	0.35			1.00		2.00
Coconut oil	0.50			1.00		2.00
Medicines	0.75			2.00		4.00
Total	8.20			23.00		52.50

Source: Family Budget Survey: 1983 Yala (dry) season and 1985 Maha (Wet)season. * Prices for each year were calculated discounting inflation and also making provision for new members added to families during this period.

The introduction of High Yielding Varieties of paddy, the major component of what is termed the "Green Revolution", has undoubtedly had a crucial impact on the process of social differentiation. But the most significant impact of paddy monoculture in Mahaweli settlements was not the emergence of a dynamic class structure among family

farmers, but the expansion of trade and commerce resulting from the increased sales of chemical fertilizer, agro-chemicals and other related products. High Yielding Varieties of paddy require a higher quantity of fertilizer than other crops. Thus the import and distribution of fertilizer became a major activity for traders. Average annual sales of chemical fertilizer in the settlement was about 1500 Metric tonnes in 1958 (M.E.A, 1985). Paddy was an important crop, too, for political authorities who stressed their role in leading the country towards self-sufficiency in rice. The management bureaucracy also paid special attention to paddy farming because most agricultural extension officers had received their training in HYVs of paddy (particularly at international institutions such as IRRI in the Philippine) and because water management officials saw the provision of water for paddy farming as their main responsibility.

A belief persists that farmers can always keep paddy for consumption. But, in reality, if they have any paddy left, they sell it during the off-season, in small quantities and often at very low prices. Therefore paddy has become a cash crop that favors the circulation of merchant capital in the marketing system. This accounts for the increase in the relative importance of commerce, transport and credit, and in the position of those who manage and control these. But settlers, it seems, continue to be compelled to cultivate paddy for the market, even though it gives them a very low net return. A large proportion of the surplus is then transferred to traders or middlemen who control the most profitable commercial functions (such as the farm machine market, the purchasing of farm crops, the consumer market, and the investment of merchant capital in moneylending). And

the expansion of cash-crop cultivation has created a seasonal marketable surplus which is attractive to traders.

Hence an increasing number of traders from the urban centers have established shops within the settlement area. The new policy of allowing them to settle in the area on "commercial plots", has promoted the separation of retail trading in the settlement area from the settlers themselves. Since these commercial plots were specifically allocated for enterprises outside agriculture, this became the way for shopkeepers and other traders to enter the Mahaweli settlements. As revealed in my studies of the trade sector, although about 90 per cent of the shops were owned by settlers in Zone 11 of System 'C' in 1983, (see Siriwardena, 1983), by 1985 about 75 per cent of them belonged to 'outside' professional traders. This marked an important change in the relationship between local village traders and settlers, as well as in the relationship between the village trader and urban wholesaler. The change was initially favorable to settler traders because, being people from within the settlement, they were aware of settlers market behaviour and needs, whereas the incoming traders had to establish contacts with farmers and learn about their situation. Their success depended upon their developing stable business relations with farmers. This led to a competitive market environment which tended to reduce the use of highly exploitative methods of trade. At an early stage these new traders involved themselves in promoting sales rather than aiming for maximization. Daily turnover in the shops of this area, estimated at Rs.15,000/- in 1983, had increased to about Rs.30,000/- by 1985. This 100% increase indicates the growing dependence of households on the market

(Siriwardena, 1985). In fact the behaviour of settlers has now become very similar to that of consumers in urban areas. Their market dependency is such that, although they produce paddy, they must also buy rice during the cultivation season. Field investigation of the trade sector in 1985 revealed that each shop in the region sold about 50 kgs. of rice per day and that the price was higher than that in Colombo consumer markets.

Increasing market dependency, expansion of commodity production and specialization of tasks through state intervention gave rise to open market competition, reducing the gap between the market price for agricultural products and the prices for consumer goods, thus minimizing the producers' profit accumulation through the exchange of commodities. When the market was unprotected in this way, there was high competition among traders who sought to make their businesses attractive to settlers. Thus the settlers provided the basis upon which traders could take control of the means of exchange rather than an opportunity for well-to-do farmers to take control of the means of production. This implies that, at the regional level, merchant capital generates its own local networks wherein traders must protect their own survival. Although they may be considered as occupying particular structural locations, traders, the other actors, give their own meanings to the various social relations in which they involved. These processes form part of the larger social system to which local actors respond and mediate political and economic forces. The outcomes, of course can be quite different from those expected by planners and policy makers. The building of the traders' own lifeworlds results this partly from the responses and resistance of farmers to the newly-established market economy of the Mahaweli settlement.

Structural Discontinuity Under the Merchant-Family Farmer Relationship

During the initial stage of settlement in System 'C', the 'transitional period', most of the settlers could not earn sufficient income from agriculture due to the poor levelling of land, lack of irrigation water and difficult living conditions in the new area. Farmers therefore had to seek out their own alternatives, since external agencies could not offer them suitable options. In fact the programme of settlement development was specifically aimed at limiting farmers' own diversification possibilities. And even private contractors involved in irrigation and building construction were reluctant to give secondary employment to settlers, because they wanted to protect their business secrets and 'underground' operations from them. Despite this a considerable number of settlers managed to combine agriculture with small-scale enterprise, which helped them to adapt to the changes in household economy in the new environment. Table 17 lists the various types of small-scale business activities undertaken by the settlers in Zone ii of System 'C', in 1983.

During this construction stage a marketable surplus from agriculture was uncertain, and the condition of the roads in the settlement area was very poor.

 Table 17. Business activities of the settlers in Zone
 11- 1983

Type of activity	No. of settlers	Average daily Turnover in Rs.*
Bicycle repair centers	12	15
Hairdressers	05	30
Grocery businesses and Marketing	42	40
Hardware and building materials	22	75
Rice milling	05	120
Tea shops	12	50
Total No. of traders in the Block	98	

Source: Own Survey, 1983 (* Rs= #27.5)

Therefore, neither outside entrepreneurs, nor the big traders in the township were keen on entering into trading with these family-based, small-scale settler businesses. So during this period there were no wholesale agents within the region, and none in nearby towns. Almost all the small retail shops in the settlement area had to purchase their goods from outside the area and bring them to their shops themselves by bicycle, tractor or bus. Special wholesale prices or other favors, such as goods on credit, were not offered to settlers. Of 92 commercial settler units in System 'C', about 78 were first-time businesses.

Soon after the completion of road construction, these businesses gradually declined. There were various reasons for this. In the first place, those who had started small-scale retail trading as a supplementary source of income during the transitional phase later became tied up with regular cultivation of their plots following a tight timetable imposed by the settlement management. Regular involvement in agriculture demanded most of the settlers'

time, necessitating their abandoning trading activities. Secondly, it seems that settlers' aspirations towards business were comparatively low. They were, it seems, not interested in business innovation and profit-maximizing strategies aimed at placing their trading on a competitive basis. Thirdly, they were isolated from the circuit of ideas current in trading circles. Finally, their financial capacity to engage in trading or other similar businesses was lower than that of the professional traders who entered the settlement. After 1977, the policies of the government had changed in favor of the private commercial sector. Under a liberalized market policy, traders were allowed to compete with formal marketing bodies such as the Cooperatives, the Marketing Department and the Cooperative Wholesale Establishment (CWE). Selected large-scale traders were given special permission to undertake marketing in the Mahaweli Settlement on the recommendation (based on their experience in trading and their financial capacity) of the Mahaweli Authority. They also received land legally from the settlement area on which to establish their businesses.

The improvement of infrastructure, especially the building of new highways through the settlement area, brought city traders, retail traders and their agents into closer contact. With the introduction of a private passenger transport system, breaking down the existing state monopoly - under the Ceylon Transport Board - newly-established traders in the settlement area developed transport services as a complement to their commercial interests. Transporting of passengers and goods between the settlements and the outside became a popular activity of such traders. Table 18 shows the share of transport businesses controlled by these

traders in the settlement. This provided an additional opportunity for investment.

In 1983, a main feature of small-scale settler trading was that credit sales were higher in volume than cash sales. About 90% of such trading units sold consumer goods on credit, a necessary condition for the existence of such local enterprise. However, with the expansion of outside professional traders' trade networks, credit

Table 18 Ownership of Transport Businesses in the Settlement Area.

Ownership	Number of Buses			Total	%
	Small	Medium	Large		
Traders in the settlement area	8	5	-	13	68.5
Government Officials	2	-	-	02	10.5
Settlers	2	-	-	02	10.5
Ceylon Transport Board	-	-	2	02	10.5
Total	12	5	2	19	100.0

Source: Own Survey, 1985.

sales in this form were gradually reduced. The new traders discovered that settlers had difficulties in generating sufficient surplus to cover the costs of production and consumption, and were slow at settling both institutional and non-institutional debts. But because these new traders were not knowledgeable about or familiar with the settler community, an effective debt recovery system could not quickly be developed. They required some method of integrating with the settler community. In order to solve this, they introduced

business methods that were geared to transforming unprofitable credit transactions into other forms of lending. For example, they realized that overburdening farmers with heavy debts was simply counter-productive. Small-scale loans for harvesting (offered just before the harvest starts) were considered more reliable since farmers could repay immediately after their crops had been harvested. Then, with the expansion of the commodity economy, private traders already established in the settlement found that they faced fierce competition with each other for the purchase of farmers' crops, and so many of them combined the purchasing of commodities with the sales of farm inputs and consumer goods. This enabled them to build up a regular clientele among settler households. Sales of consumer goods on credit to the settlers who did not sell their produce to the trader as part of the combined transaction were discouraged. For example, pre-harvesting credit was provided at a very nominal rate of interest, or was even free of interest, but farmers had to agree that they would sell a part of their harvest to the shop in settlement of their debt. In this way the trader could collect a sufficient marketable surplus to sell in the wholesale market and thus make a good profit.

Consumer credit transactions, however, continued to a limited extent. During the 1985 Maha (wet) season, about 64% of the traders were selling goods on a short-term credit basis, while paddy purchasing was operated under varying arrangements with the settlers. About 36% of the traders organized their transactions on a purely cash basis. (See Table 19 below). The majority of settlers were compelled to use various strategies for re-adjusting their family budgets in response the highly seasonal flow of cash and the fluctuations in their patterns of

expenditure. Their entire income and loans would normally be spent on cultivation and consumption during the early stages of cultivation, but during the harvesting period they would have to struggle with a family budget deficit and a desperate need for cash. Figure 3 gives the earning and expenditure patterns for an average settler household.

Table 19. Sales of consumer items and paddy purchases for cash and on credit by traders in the Mahaweli Settlement, System 'C', Zone 11 (maha season, 1985).

	Number	Percentage
Sales on credit only	-	-
Sales on credit less than 25% of total sales	48	64.0
Sales on credit up to 50% of total sales	7	9.3
Sales on credit above 50% of total sales	5	6.7
Cash sales only	15	20.0

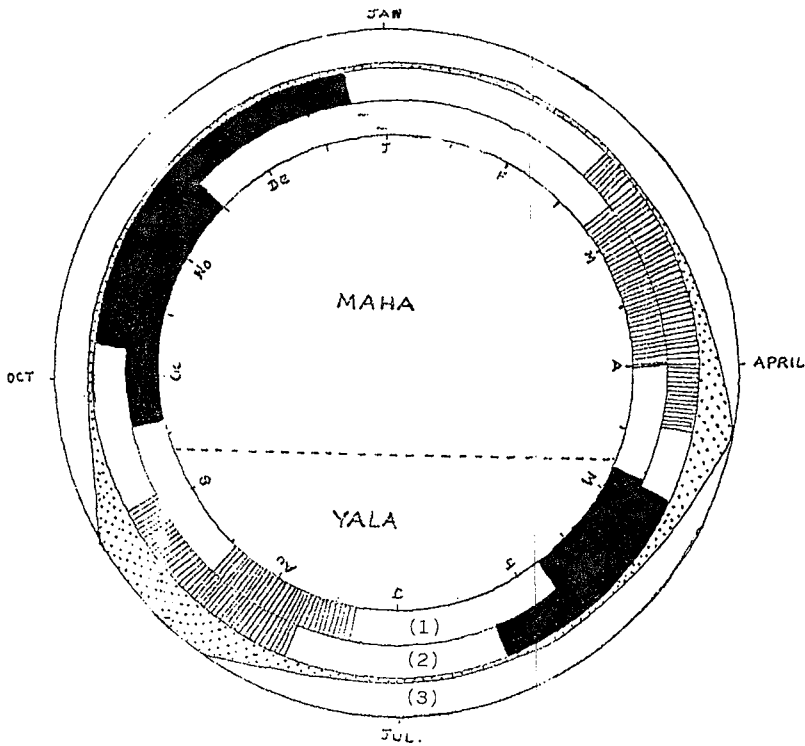
Purchasing of paddy under agreed terms	48	64.0%
Purchasing of paddy on direct cash payment	27	36.0%

Source: Own Survey, 1985.

For some cash crops, such as chillies, the pre-harvesting loan system was not commonly practised. This was mainly because the traders could not arrive at profitable purchasing contracts before the harvest due to high fluctuations in price. Secondly, the demand for pre-harvesting advances for such crops was lower than paddy since the area cultivated by an average settler was less than one acre. Thirdly, cash crops, like chillies, cannot be stored for long periods by traders until the time prices rise. The traders therefore dispose of them immediately after purchasing.

Figure 3

Settler's Own Production Calendar/Trader's
Business Calendar and the Mahaweli Management's
Cultivation Time Table



Activity of the Merchants in the Settlement Scheme.	period	Activity of the Settlers
Sales-Fertilizer, Agro chemical Hiring tractors, implements (Absorb Bank Borrowing)	(1)	Land preparation and sowing transplanting Maha and Yala (Borrow from State Banks)
..... Crop Mortgage and hiring trac- tors on Crop Mortgage System- Purchasing farm produce	(2) harvesting Maha and Yala- seasons.
..... Recovery of Settler's debts- Sales of luxury and semi-luxury goods.Organising liquor and Gambling units.	(3) Peak season of spending cash income.
..... Diminish transaction on credit. Reduce relationship.	 Inter-household cooperation and infra-household relation for survival.

(1) = Mahaweli Time Table

(2) = Farmer's Actual Cultivation Calendar

(3) = Farmer's Expenditure Pattern &
Trader's Business Pattern

To overcome this problem traders divert their attention to other lines of marketing, such as the appointment of local agents, whom they finance to purchase or act as agents with outside wholesalers in the towns. This helps to spread risk. But, at the same time, adds more middlemen to the marketing chain who make their profit through underweighing and underpricing. In response to this, settlers react by mixing bad quality paddy or sand in the middle of the bags, changing buyers, and intensively overweighing the traders' buying techniques. Once settlers' living standards are reduced to the level of subsistence, they become more and more aware of the risks and market exploitation associated with totally market-dependent crops like chillies (since the subsistence value of this crop is much lower).

Another important feature associated with the diversification of trade is the increasing dependence of traders on outside labour for their business activities. For example, the number of full-time workers employed by them, in 1985, was estimated to be about 290 in total, that is an average of four workers per trader. These workers were transferred by their employers from centres where their original businesses were located. No work of this kind was provided for the younger unemployed generation of the Mahaweli settlements. This contrasts with the situation in 1983 when all settlers' retail trading businesses employed either family or community members.

From the inception of the settlement programme, particular attention was given to the establishment of national institutions, such as the Co-operatives, the Paddy Marketing Board (PMB), the Marketing Department etc., for agricultural marketing. The aim of these

government-sponsored marketing institutions was to protect settlers from the exploitation of private sector traders and middlemen. The Co-operative Societies, for instance, were involved in the distribution of basic consumer goods and in the purchasing of paddy on behalf of the PMB through its branches. The People's Bank, on the other hand, played a leading role in lending money to settlers as well as to the Co-operative Societies. There were Rural Bank branches under the Co-operatives disbursing credit to settlers operating as agents of the People's Bank. However, the prestige of the Co-operative Societies diminished when open market and privatization policies began to be implemented. As a result, not only did settlers lose their confidence in institutional marketing but they also began to rely heavily on the private sector.

In keeping with the ideology of free market competition, the formal sector did not receive any special concessions in the form of policies or incentives. In fact, the regulations protecting the Co-operatives were removed, and the People's Bank was allowed to operate direct lending without channelling finance through the Co-operative Rural Banks. This resulted in a drop in the income of rural banks as well as a disintegration of banking operations among the Co-operatives. As compared to the private traders, the purchasing of the Co-operatives had decreased due to the reduction of overdraft facilities offered by the People's Bank. Within this changing environment, some institutions, such as the PMB (Paddy Marketing Board), had most of its activities incorporated within the activities of private traders. For example, the PMB's paddy purchasing decreased because the Co-operative that acted as the sole purchasing agent did not function efficiently. The PMB

therefore appointed private agents for purchasing paddy on a commission basis. These agents were traders in the area who had political influence. They purchased paddy without utilizing their own capital, and developed close relationships with the PMB officials who regulated PMB funds in favor of them. Since part of the commission was paid to the officials by the agents, the purchasing of paddy directly from settlers was often discouraged in order that paddy would come to the PMB through its agents.

In a recent debate, Long identifies some important issues concerning the impact of commoditization. Empirically, studies have demonstrated the ways in which rural economies are increasingly affected by market incorporation and the process of capital subsumption, leading to the increasing dependence of peasant households on cash income and on purchased goods. However, although integration into markets and external institutional structures may reduce the range of economic alternatives available to farmers, the availability of non-wage household/family labour and resources, coupled with the maintenance of local networks based on kinship, friendship and patronage, allow farmers to continue to resolve certain of their livelihood and consumption problems outside the market (Long, 1986). Following this argument, and based on what I have observed in the Mahaweli settlement, I would argue that massive intervention and commoditization in the Mahaweli Settlement Scheme provided an ideal situation for farmers to resist and struggle against the assumed tendencies of commoditization, showing how farmers make full use of their own knowledge and capabilities.

Clearly the Mahaweli situation cannot be explained by focussing upon any single set of factors because penetration of merchant capital in the Scheme demonstrates the co-existence of various contradictory elements and a mixture of many tendencies. Although merchant capital is concentrated in the sphere of market circulation, when local retail traders intensify their interaction with local groups, the logic of market penetration works rather differently than assumed. According to the traders, their involvement in agriculture under hidden tenancy arrangements is not due to their interest in cultivation perse, but because they are compelled to do so when some settlers mortgage their land to settle their debts with them. Once the land is leased in, traders must then cultivate them in order to extract some benefit. However, after two or three seasons, the land is returned to the settler, once the debts have been cancelled by the rent owed the settlers. Table 20 gives details on the cultivation of land by traders.

 Table 20. Agricultural Activities of Traders in the Settlement Units

	No.	%
Total number of traders	75	100
Number of traders cultivating land on a leased basis	38	51
Rent for the land per season	Rs. 1200.00*	
Total rent payable to settlers	Rs.198600.00	
Total ares cultivated	Acres: 165.50	
Average area cultivated by traders	Acres: 4.30	
Duration of cultivation		
Less than one season	12	
More than one to two seasons	12	
More than two to three seasons	9	
More than three seasons	5	

Source: Own Survey, 1985.

* Calculated on the basis of the standard rent charged by settlers in the three settlement units.

As I have discussed in Chapter 4, each family has its own way of organizing its livelihood strategy in the face of external contingencies and intervening actors. Indeed there is a great diversity in the ways in which settler families interact with outside parties. In adjusting their business styles to these varied local responses, the role played by retail traders demonstrates not only the settlers' dependence on the trader but also latter's dependence on the settlers. For example, a considerable part of a trader's profit is invested in the development of appropriate social relations necessary for stabilizing his business. In the settlements, government banks provide cultivation loans to settlers. But the rate of default has increased. During the 1983 Yala(dry) and 1984 Maha(wet) seasons, about 80 percent of the settlers who had defaulted on institutional credit demanded from government that they be allowed to re-schedule their debts, due to crop failure (People's Bank, 1985). During both occasions many traders played an active role in organizing settler demonstrations aimed at applying pressure on government. Settlers pressed to have their loans re-scheduled in order to obtain new credit. When I met those traders who were leading these settler demonstrations, a question arose as to why they organized settlers when they had nothing directly to do with the institutional credit problem. The answer was that if settlers were given new loans by the Bank, then traders would help to recover their debts from the settlers as well. On both occasions, in fact, they succeeded in recovering these debts from the new loans granted by the government banks. But, after a few seasons, settlers once

more defaulted on government loans. So, once again, the traders helped settlers to press for their case. In the end government was compelled, for political reasons, to write off the debts. In this way, the development of antagonism between settlers and the state was temporarily controlled.

Relationships and interactions between traders and settlers are not restricted therefore simply to monetary or material transactions, but involve various social negotiations concerning the terms and conditions of particular commercial transactions. The outcome of such negotiations depend not only on the leverage exercised by the settlers, but also on the traders who devise their strategies vis-a-vis the interests and resources of other actors-clients and competitors. The transactions that result can best be described in terms of a 'Theory of Games' model wherein the interests and social welfare of the respective actors constitute a critical element of the game, although it is important not to treat the activities of traders simply as a set of transactions with some kind of abstract environment.

These points can be further illustrated by the following account given by Pathiraja, a trader in the Mahaweli settlement.

Pathiraja, owner of the Pathiraja Stores, Settlement Unit U1

During my field work in the settlement area, I purchased my consumption requirements from Pathiraja Stores. After several visits to this shop, Pathiraja started to discuss with me various problems in the settlement. One day, he

wanted to know my involvement in the settlement. After I explained to him that I was doing a study about Mahaweli farmers, he laughed and said:

"you will never be able to study them. Be careful, they will tell you one thing but do something completely different from what they preach. After many years of business in this village even I still cannot understand them. Their behaviour is like the waves of the sea which rise suddenly and merge unexpectedly"

According to him, trading in the Mahaweli settlements is a difficult game which requires a knowledge of how to organize activities according to the "unpredictable" behaviour of settlers.

Pathiraja started trading with his father in Kandy (the main town of the Central Province) about 20 years ago. After his father's death, the shop was inherited by him and his brother. They did well with their business. In 1980, a friend of Pathiraja, who was working in a foreign construction company of the Mahaweli Project, came up with an the idea of opening a shop in System C of the Mahaweli Scheme. Within two months Pathiraja decided to open a shop in the settlement because there was already high competition among businessmen to enter the Mahaweli settlement. So he approached the Political Authority (the local Member of Parliament) and obtained some land (a commercial plot) with a good location.

The shop was established in 1981 at the time when first settlers were moving into the settlement. From its inception, the Mahaweli officials helped him with setting up the business and within six months he had developed

close relationships with them. They suggested that he invest in the Mahaweli construction business before entering trading and explained the secrets of how to make a profit out of irrigation construction. They used him to register his business before outside contractors "come and take over". Their intention was to allocate approved contract work to 'known people' and to get a share of the profit for themselves. As far as the construction business was concerned, there were rules and procedures to be followed. All this was in the hands of project officials. However outside contractors who came from Colombo possessed their own political leverage and were also by-pass procedures. Project officials did not like this, since external political manipulation in the construction business damaged established relationships with local contractors. Hence wherever possible, officials devised their own strategies for manipulating procedures of allocating construction contracts.

Pathiraja decided to move into both the construction and trading. He asked his wife and brother-in-law to look after the shop. This was a very good period for him. He brought a tractor and, with the help of the officials, started Mahaweli construction, building canals and roads. The officials explained him how he could make a profit, prepared over-inflated cost estimates, got them approved and handled all the paper work. He had to expend only half the estimated costs and the profit was shared between him and those officials who had helped him. Unfortunately, however, this prosperous period came to an end in 1983 with the completion of the Mahaweli constructions, thought his friendship with officials did not end. They used to turn up at his shop every evening, eat together, play cards, drink liquor and enjoy themselves. They also started to take various goods from

the shop on a "pay later" basis. Because of friendship, he did not ask them for the money they owed, nor did they show much interest in paying it back, although when the amount became fairly large they did agree to pay some of it off. And so his shop was finally running at a loss.

By this time, he had come to realize that settlers did not buy goods from his shop because he lacked close contacts with them. In order to improve his trade and to cover his losses it was crucially necessary to develop trading strategies aimed at attracting farmers. At the time, the number of shops in the area was increasing and the traders were in fierce competition with each other. He had also begun to get involved in various welfare activities in the settlement, attending funerals, weddings and the other religious activities of settlers. He offered donations for settlers' social and cultural activities above the usual contribution of other traders. In addition, the prices in his shop were kept to a minimum in order to attract more customers, even if this meant accepting lower profits.

By the end of August 1984, he achieved a very good turnover. More and more settlers were coming to his shop. So he decided to make more profit by increasing the prices of selected items and reducing his contributions to welfare activities. He also stocked the shop with new items and reduced purchases on credit to settlers. Yet, by the end of 1984, his business was in decline. The reason for this, he concluded was that the number of items purchased by settlers was dropping due to the decreasing purchasing power of settlers. Some farmers had even begun to cultivate food crops instead of cash crops, thus reducing the market transactions of settlers and the daily turnover in most of the shops of the area. In order

to maintain a minimum profit margin traders were forced into open competition with each other. In this situation, Pathiraja chose to reduce on items with a slow turnover and to stock only the more popular items.

He again made an effort to consolidate his relationships with local farmers. This time settlers offered him chairmanship of their Buddhist Temple Society, an involvement which proved very costly due to the need to donate money and materials for the construction of a new temple. Nevertheless he was forced to adjust his strategies to the situation. During this period traders were struggling to maintain a minimum profit level. Settlers, it seems, had not only reduced their transactions with traders but had also changed their market behaviour. Pathiraja explained:

"Nowadays they have the bad habit of changing their transactions from one shop to another. There is no good reason for this type of decision. When I asked a settler (a good customer) why he left me unexpectedly, he simply laughed and said "if it is my car and my petrol, I can go any where I like". This was an insult because he was aware that I had reduced sales on credit. He was indirectly asking me to sell on credit again which I don't like doing. Making business with this type of settler is a struggle. Not only does our trade depend up on them but also we have to take more and more risks."

Pathiraja, then, makes a profit but he cannot go beyond a certain limit. His brother (the present owner of his father's shop in Kandy town) always advises him to deploy business tricks. For example, he was told to move into money lending. So, when the business was on a downward

trend, Pathiraja decided to lend money to his customers in order to keep them indebted to him. His intention was to use this capital as a weapon for stabilizing the flow of business. During the initial stage this strategy was successful. Many farmers began to borrow from him and purchase goods on credit. However, during the repayment stage the amount he received back was far below that of the total loaned, although he reasoned that he would eventually be able to pressure those owing money to honour their obligation. Yet, despite all this strategizing, they continued to owe the shop a lot of money. Finally the income he lost from bad debts gradually exceeded the income he received from daily cash sales. And this was a disaster.

He immediately stopped lending and began to visit his debtors in an attempt to recover his debts. Pathiraja explained his problem in the following manner:

"During the day time I kept my shop open and during the night I went to ask for my money from the farmers who borrowed from me. But I was never able to recover the full amount. In most cases I had to agree to their terms and conditions of repayment. Like a beggar I had to stand at the front door asking for money. I realized that I was no longer a powerful person. Those indebted farmers were more powerful than me because I feared that if I pressed them too hard they might not pay back at all. The only possibility available was legal action but I was aware that such action would be even more dangerous because my image among other settlers would be bad. Secondly, I calculated that the cost on filing individual cases through expensive lawyers and going through all those complicated legal

procedures would exceed the total amount of the outstanding debts. Therefore I did not have any alternative other than to accept farmers' own decisions on repayment."

According to the experience of Pathiraja, a trader in Mahaweli settlement area is not a powerful outsider who can simply apply exploitative trading tactics when dealing with small-scale family farmers. If such weapons are used, then they can rebound back upon the trader, causing untold disaster. According to Pathiraja, external market forces affect not only farmers but also local traders. Even price mechanisms can have a serious influence on local traders because farmers' negative responses to marginal price increases have their cumulative impact on traders who are dependent on settler households for keeping their businesses afloat:

"My brother in Kandy town gave me 'dead rope' (the wrong advice) based upon his experience with urban customers. Such urban trading methods cannot simply be applied in the settlement area. We deal with customers internal to our area of business. They are not monthly wage earners. Neither do they respond as we wish."

Therefore Pathiraja realized, given his experience in the Mahaweli area, that business relations are much more important than business transactions. Commoditization processes in fact often generate market competition and risks rather than more favorable market opportunities. Pathiraja is thereby forced to become an "insider" tied to various local social commitments and suffer the consequences of this on the rate of profit-making.

According to settlers' opinions, traders in the settlement area usually take a leading part in religious ceremonies, contributing high cash donations. They also offer the use of their vehicles and donate consumer goods when there is a funeral or a wedding. As one settler put it:

"We can knock at the trader's door, even at midnight, and ask assistance when a member of our family falls sick. Sometimes many lives are saved because these traders immediately provide their vehicles to take patients to hospital."

In many Buddhist temples traders' names appear at the top of the list of donations and every time settlers participate in religious activities they publicly acknowledge the piety of traders. It may be that traders' social costs of various kinds appear as an economic loss in the balance sheet, but such involvement is a necessary part of their profit-making approach. It is through this that vital intangible gains are made: this gives power, rank and goodwill. Such gains are essential elements in the achievement of traders' personal goals.

Traders who articulate with the bureaucratic management of the settlement are brokers. They experience the dilemma of every intermediary: that is they face simultaneously both the bureaucracy and the settlers. Their methods of making usury profit apply to settlers in fragile and paradoxical ways: traders take advantage of the "hunger for cash" in the survival of peasant households, whilst at the same time they themselves are dependent upon settlers for their own economic survival. A significant number of poor families, rather than being tied intimately to the market, try to break off such ties

and maintain a day-to-day subsistence through growing, for example, their own vegetables and other food crops. This undermines the livelihood of traders whose strategies are fundamentally based upon increasing settler dependence upon commodity market and upon the certainty of the trader being able to achieve profit from this. Most farmers coming from subsistence farming communities have been able to re-establish their previous farming methods much more easily than make a success of intensive cash-crop farming.

These various complex processes of adaptation have meant that, in many ways, commoditization in the Mahaweli case has reinforced processes of peasantization rather than depeasantization. Farmers use their knowledge and social experience to devise their own livelihood strategies. In this way, the so-called "market-led" commodity economy, promoted by the penetration of merchant capital, has been re-shaped into a "farmer-led" economy, whereby farmers have incorporated traders and their activities into their own livelihood strategies.

CHAPTER SEVEN

CONCLUSIONS

In the introductory chapter I highlighted some conceptual problems concerning the explanation of social change in Mahaweli irrigation settlements. The issues that were raised led me to argue that theoretical solutions cast in institutional terms fail to provide an understanding of the unintended variations in the outcomes of such programmes of planned intervention. In order to resolve this problem I suggested that we adopt an actor and interface perspective on rural development. Such an approach offers a useful theoretical instrument and methodological device for the study of divergent interests, conflicting relationships and contrasting local images of local officials, farmers and traders—that is, of those who are actually involved in intervention practices at the settlement level. My argument was based on the assumption that people's actions and their ways of constructing the social meaning of development intervention are more important than the problems defined by the settlement programme itself. The emphasis in this thesis, then, has been on the patterns of interaction, discrepancies of social interest, and interlocking strategies of the above three groups of key actors involved in the process of settlement development.

Chapter 2 provided historical background to state-sponsored irrigation settlement in Sri Lanka. State

intervention in irrigation dates back to the colonial period, but begins in earnest in the early years of the 20th century. The argument advanced was that, during the last 50 years of state-organized irrigation settlement, there has been a gap between the intentions and the outcomes of planned programmes of irrigation development. From time to time various governments were compelled to modify their programmes in the face of the diverse responses and strategies of the many small-scale farming households involved. Despite the attempts to establish more effective institutional and participatory structures, this dichotomy between strategies of planned intervention and actual farming and social practice has continued. Although the state attempted to legitimize centrally-controlled government programmes through the promotion of more welfare-oriented services, farmers have responded by turning these various interventions to their own advantage, thus adding to the complexities of planned change. A further important element has been that every political party coming to power has been forced to formulate policies with the intention, or at least rhetoric, of solving major national problems, such as rising unemployment and political instability.

In chapter 3 it was argued that Mahaweli settlement policy, based as it is on the management and administration of small-scale uniform family farms, has failed to recognize and tackle the local diversity of family farming, nor has it come to terms with the complexities of the settlement system itself. The ideological presentation of top-down management of family farming, which policy makers evidently were committed to, in fact tended to obstruct the ability of local officials to relate to the actual social and economic processes taking place at local level. Consequently in each

settlement unit they have modified the procedures and the operation of the official model in order to cope with the multifarious problems they have encountered. In this chapter, a comparison was made of the different socio-economic, cultural and practical problems of settler households in three settlement units. I also elaborated upon the various reasons for the emergence of local lobbies and social groups with different images and strategies, and related these differences to their contrasting social settings and backgrounds. The conflict between farmers' ways of perceiving and organizing their lifeworlds, on one hand, and officials' ways of labelling and interpreting their actions and depicting particular groups of farmers, on the other, was also explored. This provided an approach to understanding the reality of planned intervention practices.

Chapters 4 to 6 examined the social relations and transactional processes among the three contrasting groups of actors, namely local officials, farmers and local traders. Chapter 4 focused on the situation of local officials (settlement Unit Managers). In this, I argued that, although Unit Managers were employed to implement specific settlement rules, procedures and tasks, which were backed up by statutory powers, the implementation of their programmes was obstructed by resource constraints, inter-agency conflicts between technical and non-technical personnel, lack of coordination, and conflicting interests between them and their superiors. While demoralized by their role as local 'change agents', their own financial problems, family responsibilities, and the discrepancy between their workloads and the wages they received were the more influential factors in pressing them to actively organize their own lifeworlds and to develop strategies for

resolving local problems and for dealing with day-to-day situations. Since they lived within their settlement units, Unit Managers were constantly involved in everyday interactions, and sometimes confrontations, with farmers and in this way they were drawn into their ongoing livelihood struggles. They could not remain "outsiders" to this process. Instead, they were compelled to modify the procedures, reinterpret their designated authority, reshape top-down policy discourse, and look to their own interests. Being full participants in the local arena, they could not stand back from the dilemmas of the settlement population.

In Chapter 5 I showed how different farmer groups in three settlement units interacted, negotiated and developed relationships with local officials in order to realize their own goals. These farmers were not passive participants within the official programme of implementation but strategic actors who used their knowledge and capabilities to pursue their own interests. External control, administration, influence or power within the local setting were often blocked or neutralized by farmers who took advantage of the defects, constraints and problems of the organizational structure. Moreover, although settlement management sought to increase the dependency of farmers on outside institutions and decision-making, somewhat paradoxically, these forms of dependency at the same time created the space and motivation for farmers to organize themselves through inter-household cooperation, friendship and kinship relations. Local officials could not control such tendencies because they lacked the organizational means and resources to provide a better solution to the living problems of farmers. Instead, farmer strategies were more effective in influencing

officials to relax regulations and control. In this way the top-down authority structure became transformed into a negotiated and locally-adjusted set of relationships among local officials and farmers. Hence the outcomes of planned intervention in Mahaweli settlements were shaped by local processes that reflected the responses, interests and practical problems of both local officials and farmers, even though external institutions might still seek to interpret these tendencies as correctable deviations from the main project.

Chapter 6 dealt with local traders and their links with both settlers and officials. In the first part of this chapter, it was argued that commoditization and increasing market dependency of settler households were not such dominant external forces tying farmers into agricultural markets, as is often assumed. On the contrary, there were points at which "the logic of the market" was blocked by counter-tendencies that emerged from farmers' strategies aimed at market avoidance. The "hunger for cash" to meet basic consumption needs was a strong factor influencing many farmers to abandon the almost impossible struggle to make a living out of small-scale commercial agriculture and to devise their own alternative livelihood strategies. Because of this, settler behaviour vis-a-vis the market was highly unpredictable and fluctuating.

In the second part of the chapter, it was shown that local traders were severely affected by this type of farmer behavior. Commoditization acted in the first place to attract more and more traders, eventually leading to fierce competition among them, only later to be exacerbated by a stagnating demand for their goods. I also showed how local traders modified their business

tactics in response to this increasingly problematic situation. Thus, within this local setting, traders did not manifest themselves as a powerful external group exploiting settlers. On the contrary, they were knitted into the fabric of local life, establishing close relationships with individual farmer households and adjusting their goals in accordance with the exigencies of local commitments.

How Actors Create a Middle Ground of Development Practice

The central aim of this thesis, then, was to analyze the interactions, interlinkages and negotiations of farmers, local officials, and traders in the Mahaweli irrigation settlements. This triangle of relationships constituted the social arena marking out the actual locale of development, or what we might call "the middle ground". The middle ground refers to the totality of social processes and fields within which different groups of actors attempt to establish common ground for their negotiations over resources and development alternatives. My intention was to open windows onto these social realities and to observe how the strategic actions and interactions of the various participants shaped the outcomes of planned intervention. This is a highly complex zone of intervention practice where actors meet each other, test out their practical concepts, evolve interdependencies for survival, and develop various types of relationships based upon these encounters. As I explored in this thesis, what actually happens in this middle ground cannot simply be explained within the framework of pre-defined theoretical or planning models, since there often arise confrontations involving bargaining and negotiation between the respective social

actors that go beyond the expectations of such models. Such face-to-face engagements constitute, as it were, "the battle grounds" of development. There are also struggles that may be depicted as "underground" actions where so-called "powerless" groups develop alternative forms of power for realizing their own goals. These relatively invisible processes, which frequently go unnoticed in the sociological analysis of state-peasant relations, often constitute the beginnings of peasant empowerment. In the same way, various strategies used by local officials for realizing their hidden agendas, which may be regarded as "unofficial" or "illegal", also contribute to these complex processes by which external intervention is "internalized" by the participants. Again, there are various forms of farmer-trader relationships which are not externally imposed but the result of negotiation.

Exploring empirical situations in this way makes it important to offer some remarks in this on chapter concerning the dichotomy that exists between macro-theoretical models of planned intervention (the Mahaweli project side of the development) and the middle ground of intervention practice as analyzed in this thesis.

Contrasting Worlds of Development

The project side of Mahaweli development consists of a separate world of development professionals involved in formulating planned intervention programmes built upon assumptions about the universal features of small-scale family farmers and their generally passive participation in agrarian development. Officials of the Mahaweli project have their own language, specialized

terminologies, interpretations, meanings and interests concerning the notion of "the project" and its development. In contrast, the middle ground of intervention practice of the settlement scheme is made up of its own distinctive sets of social relations and social encounters, through which actors process their knowledge, images and understandings, and pursue their own practical ends.

If, therefore, social change and development are viewed simply from the perspective of the implementing agencies or that of the policy model, then one arrives at a one-sided and distorted picture of the social reality of development intervention. This is because, as Long argues, "specific patterns and paths of agrarian change cannot simply be explained by the intervention of public authorities or powerful outsiders, nor by the uncovering of some inexorable structural logic. In a fundamental sense, they can only result from the interactions, negotiations, and social and cognitive struggles that take place between specific social actors" (Long, 1988:222). Hence, by addressing our analysis to critical points of linkage and to key interactional settings, we come to understand the ways in which discrepancies of social interest, knowledge and power, and rules and procedures are mediated or reproduced in situations of planned intervention. The present thesis highlights how, in this process of intervention, the following dichotomies are reflected and reproduced.

Dichotomy Between Project Image of Farmer Participation
and the People's Model of Participation

The attitudes and strategies of project officials representing the Mahaweli project are such that their own discourse and technical expertise contribute to the creation of their own world ("the project"), which involves realizing their own goals and hidden agendas. Officials hardly ever study the social and cultural foundations of the middle ground from the point of view of the client population and its ability to adjust itself to planned intervention. For example, development agencies of the Mahaweli Scheme use participation ideals which assume that all farm families will be willing to participate in their programmes in accordance with a 'rational' model of participation. Such concepts, however, belong to the international vernacular of development professionals, which are used to create images of how farmers should or could behave, and to justify the channelling of material and services to large-scale development projects and to legitimize the distribution of these through local agents.

In response to such planned intervention, farmers develop their own models of participation, drawing upon their own philosophies and applying their own meanings to the issue of sustainable household living. This practical use of 'indigenous' concepts involves the internalization of planned intervention through the various struggles, manipulations and building of new vertical and horizontal relations that take place in the middle ground. A central problem of settlement development, as understood by development planners, is the general lack of farmer participation. Most Board Room discussions, evaluations, circulars and training programmes give major

attention to farmer participation in programmes of implementation. However official support to promote participation is often manipulated by local officials who, on one hand, try to show compliance with official policy, whilst, on the other hand, acknowledging farmers' notions of participation. For example, Unit Managers can indicate a number of very active farmer leaders who participate in water management. Yet, at the same time, they can provide no solution to the illegal water tapping by farmers who construct their own water outlets from the irrigation system, something they have had to accept as an essential part of farmer participation in irrigation water use.

Dichotomy Between Project Language and the Language of Local Actors

Such "irregularities", or what are sometimes called "failures", provide the legitimation for the continuance of development projects. Failures must be corrected through carrying out "evaluation" studies and proposing "improved" interventions. This, in turn, means more and more projects and programmes, at a cost of millions and millions of dollars. As long as funds are available, project documents continue to point to the need for "feasibility" studies for new or modified policies. Here feasibility is based primarily upon a cost-benefit analysis which uses a machine language that talks about the "internal rate of return", "discounting factors" and "projected income". This mechanistic approach creates an oversimplified image of development with its "projections" and "forecasting" exercises. It is precisely because the development problems of the Mahaweli Settlement Scheme, like most other large-scale

interventions, are represented in this way that "the project", and its own brand of rationality, becomes separated off from the struggles of local actors.

The specialized technocratic discourse used by the Mahaweli Settlement Authority in which top-down instructions and procedures are communicated contains no reference to the actual behaviour of specific actors. These instructions, as argued in Chapters 4 and 5, which may be legitimate within the bureaucratic setting, lose their social meaning in the middle ground. In comparison, the types of discourse that emerge from below, through the everyday struggles of farmers, local officials and traders for solving practical problems, are much more dynamic. and such discourses, in fact, became viable alternatives to the formal communication system. Hence, the process of change cannot simply be explained as an outcome of intervention practices initiated by the state or by other powerful outsiders, since these interventions are reshaped in the middle ground and accorded social meaning by the local actors in accordance with their own specific local interests and circumstances.

Dichotomy Between the Simplicity of the Project model and the Complexity of the Middle Ground

The middle ground of development intervention reflects various patterns of change at the settlement level. These can only be understood by analyzing in detail the behaviour of the actors involved. In Chapter 5 it was shown how farmers influenced local officials and gradually incorporated them into their lifeworld. Unit Managers, as the single intervening agent at local level,

were unable, using formal methods of communication and authority, to deal effectively with the actions and lobbies of farmers. This was compounded by the problem of having to monitor the activities of a large number of farmers. In contrast, the 200 to 250 farmers represented a formidable collective force for monitoring the behaviour and identifying the weaknesses of their Unit Manager. Although not all farmers possessed the same detailed knowledge of their local official, information and critical commentary easily flowed within existing family and neighbourhood networks. This pool of information gave them the edge on government officials and bureaucratic knowledge. Furthermore, farmers were more powerful in their discourse with officials, supporting their arguments with concrete empirical evidence, than officials were vis-a-vis farmers. Officials quickly resorted to a formal and rigid type of argumentation, using difficult technical terms and making hardly any empirical reference. In the end, local officials were driven to modify formal communication channels and to ignore regulations, if they wished to have any impact at all. As one farmer put it, 'officials cannot ever practice what they preach'. This disillusionment with external agencies and their representatives, however, was not only characteristic of farmers but also infected those local officials who finally faced up to the local problems of intervention.

Another problem affecting the relations of officials and clients was discussed in Chapter 4. Here it was argued that local officials were underpaid and enjoyed only low privileges as compared to their immediate superiors. This led them to search for additional sources of income within the local environment. Since these opportunities were known to be unofficial or illegal, farmers were

quick to accuse officials of "corruption", creating in them a sense of fear or guilt. Scared of the negative reactions of farmers, officials often adopted protective measures. These included modifying the scope of their authority, thus avoiding the use of coercive means, and where possible pleasing farmers so as to maintain both their and the farmers' means of survival. In response, farmers were able to use this situation, which revealed the fundamental weakness of Unit Managers, strategically to create new space for binding officials to their own lifeworld and for bringing moral pressure to bear on them. These dialectical processes are not easily explained within the framework of interventionist models of settlement development.

Dichotomy Between Theoretical Models and Practical Models

The Mahaweli Irrigation Settlement Scheme is one of the largest planned development programmes involving integration of farming households into a wider technical and administrative structure, where farmers are required to engage in intensive cash-crop production. Many aspects of farming resources (such as irrigation water, land, and credit) are under the control of external agencies. Under these conditions of vertical integration, some doubt may arise as to the likely success of peasant forms of resistance. One may also question the general applicability of an actor-oriented approach for understanding these problems in the wider context of settlement development.

As I indicated earlier, there are difficulties in understanding processes of social differentiation in the Mahaweli Settlement Scheme solely within a structural

framework of analysis. For example, when in 1981 I began my research among Mahaweli farmers, I assumed that they had lost control over their means of production, since many claimed they did not cultivate their own land. Later, however, after adopting an actor and interface approach to the problem, I discovered that large parts of the land not cultivated by the farmers themselves had been allocated to members of their extended families or were jointly cultivated with friends. This emphasizes the need to explore resource and development problems through the close-up analysis of social practice and actor strategies. Structuralist models tend to view the processes of social life from an externalist point of view, which in the context of the present study has meant looking at settlement development from the point of view of the "official project", or at least from the perspective of structural determinants and linear change. In contradistinction to this, an actor approach requires understanding problems and processes from "the inside" and in terms of their emergent forms.

The researcher must make his entry point those situations and arenas where intervention processes impinge upon and enter the lifeworlds of the key social actors. Throughout this thesis it has been argued that, despite the existence of various external linkages and the interests and power of intervening parties, when these enter the middle ground (local arenas) they are compelled to confront and accomodate to the specificities of local everyday conditions. In so doing, intervening actors have to solve their practical problems from the inside. For example, it was revealed in the analysis of the behaviour of local traders (see chapter 6) that they were forced by local circumstances to alter many of their pre-existing business techniques. In this way, trader-farmer

relationships were shaped by various non-market social encounters and inter-dependencies at local level. Hence, traders have a limited capacity to compel farmers to integrate into the market. The greater the power they deploy to eliminate market risks, the more uncertainty they face in the development of reliable trade relations with the farming population.

Within this complex set of problems involving development models and development practice, the identification and explanation of development processes is, I believe, only possible if sociological and anthropological research addresses itself to, what I have called, the middle ground of development and intervention practice. As I have insisted, this requires giving serious attention to the perceptions, aspirations and strategies of those social actors involved. A better understanding and conceptualization of these issues depends also upon the development of appropriate research methodologies, and not upon the application of outdated frameworks which contain within them many interventionist assumptions. The complex social interactions and human behaviour implicit in planned development activities and in the expansion of capitalist interests cannot be reduced to some universal logic of development. Thus the researcher must open up the problems for analysis through a detailed understanding of the problematics of the middle ground, where the action takes place. Only by doing so can he or she open the window on social reality and, at the same time, close the door on interventionist thinking and analysis.

APPENDIX 1: Observation and Recommendation - 'Feasibility Study for Stage II, Volume VII-Settlement Planning and Development.' November 1972.

1. Social and Organizational Framework of the Project Area.

The social set-up of the project area is characterized by four distinct types of settlement:

- a) The 'Purana' villages inhabited by the original settlers with a traditional-bond long standing history.
- b) The Colonization Schemes which are of comparatively recent origin which are state-sponsored agricultural settlements.
- c) The 'new' villages also of recent origin, usually found along the majority highways of the area inhabited by voluntary settlers - the overflow population of Colonization Schemes.
- d) The urban areas, few in number, serving as the main shopping centres of this area.

The differences are as much ecological as historical and social. The ecological integration of the "Purana" villages and the new villages is underway but at a very slow pace, while the social integration is almost non-existent.

2. Purana Villages

The term 'purana' means 'old' or 'traditional'. The important components of a 'purana' village are the village tanks, the 'Gamgodella' or residential area, 'vel yaya' or paddy fields and 'Goda Idam' or high land and 'Hena" or chena land. Usually the 'vel yaya' - the paddy fields, the 'gamgodella' - the residential part of the village and the village tank are one composite unit. The highland and the chena lands are way from the main village. About 50% to 60% of the villages in the Project area are Purana villages.

The number of families living in a Purana village range from a low 15-20 up to a high 100-120. On the average there are 50-60 families with a total population of 300-400. Closely linked to many Purana villages are the 'Olagama". The Olagama is usually an uninhabited village where people from a neighboring village own land, and peasants come from the traditional village for cultivation of paddy land, highland and chena. Sometimes the peasants would live in temporary huts in the Olagama during the sowing and harvesting seasons. It is possible that the Olagamas were once inhabited and when the village tanks were damaged and when no water was available for irrigation the peasant migrated to another village. When the peasants were able to repair the tank and cultivate the paddy land it become an olagama of the village that repair the tank. In recent years many Olagamas came to be inhabited and were included in the category of Purana villages. It is estimated that about 5% of the Olagamas are presently inhabited. It can now be observed that on the fringes of many Purana villages, outsiders have encroached on crown land to cultivate highland and chena. Ecologically not integrated into the

village territory, these new-comers are also not integrated and their social integration with the Purana villages is at a minimum.

3. New area: Colonization Schemes

There are several major colonization schemes in this area. These huge settlements with a high concentration of the population offer an absolute contrast to "purana" villages. Generally the colonization schemes were organized in several tracts. The other major difference is the composition character of the population of almost all the colonization schemes. The land tenure system in the Purana village is much more complicated. There is ancestral and after referred to as 'Paraveni' land and ownership is governed by the traditional laws of inheritance, while 'dejure' ownership passed down among related kinsmen, each 'heir' is the 'de facto' owner of the land and there is no restriction to disposing of land either by gift, bequest or sale. Usually disposal of the land to outsiders is frowned upon by the kinsmen, it is permissible to do so among kinsmen.

The ownership of land resulting from a purchase is usually referred to as 'Sinnakkara'. Prior to the Land Development Ordinance 1935 and subsequent amendments to the Ordinance in 1961 and 1969, allocation of land was governed by a series of 'Land Orders'. The government allocated land to the Purana villagers on grant under 'Land Orders'. Such allocations of land granted ownership rights for the allottee and was also considered "Sinnakkara" land.

After the enactment of the Land Development Ordinance the Government allocated land to peasants for village expansion. These lands usually referred to as 'Badu Idam' (Rented land) or 'Anduwe Idam' (government land) bestowed on the allottee the ownership of the land similar to that in the Colonization Schemes. It is obligatory on the part of the allottee to pay 'Badu' (rent) to the government. Usually the rent payable was nominal and occupation was guaranteed.

4. Land Tenure

Since the World War 11 the government allocated land to peasant under short term leases, and food production permits. These short term leases had to be renewed every year and the lease holders held the land at the "will and pleasure of the crown". However often the land developed by a peasant was allocated to him outright under the Land Development Ordinance after sometime.

The right of cultivation of state (jungle) land was granted to peasant under the "Chena Permit System". The permit had to be renewed every year, and there is no security of tenure. It is therefore possible for a Purana villager to own land under "Paraveni" (inherited ownership), sinnakkara (ownership of outright purchase or land under government lease), land under LDO permits and short term leases.

Another important component in the land tenure system is the existence of 'Nindagam' - land gifted by the ancient Sinhala kings and by British rulers in colonial times to chieftains for loyal and faithful services rendered.

In the Purana villages tenurial problems constitute a major source of conflict. The land under the 'Paraveni' or the "Sinnakkara" ownership would be passed down from the parents to children. Each person would inherit a 'Pangu' or share of the land. There is no physical partitioning of the land and demarcation of boundaries would be by mutual agreement. After several generations the share becomes a small fraction of the original estate. A person in a Purana village would own several small parcels of land scattered in different parts of the village. The cultivation of such small parcels of land is often not economically profitable nor feasible.

Another pattern of land tenure is the "Thattumaru" system. Under this system each of the shareholder would take turns in cultivating the whole extent of land. If a shareholder for some reason does not cultivate the land when it is his turn, he has to wait for several years for his turn again. The system of "Thattumaru" is an ingenious method to enable a shareholder to cultivate a larger extent of land at least once in a number of seasons rather than to cultivate a small extent every season.

Another system of land tenure which has often been confused with the 'Thattumaru' system is the "Kattimarur" system. Although many authorities consider the two systems identical yet there are subtle differences. In the "Kattimarur" system each of the shareholder would demarcate parcels of land, and exercise an ownership right to that parcel of land. However, all the parcels are not equal in fertility soil quality and therefore productivity. To maintain an equitable distribution both fertile, and infertile or barren land each of the owner would change their cultivation rights from one parcel to

another every season on a rotational basis so that all shareholders would have a turn on all parcels.

The operation of the "Thattumaru: and "Kattimaru" systems forced small shareholders to work as "ande" cultivators (share croppers) during the period when the land (of which he is a shareholder) was cultivated by other co-shareholders. Most of the peasants are "de Jure" landowners - though of small shares of land. Therefore chena cultivation became an important aspect of the economic life of rural peasants. A peasant would 'encroach' on a few acres of state jungle and do chena cultivation. His right to the chena is represented by other peasants and intrusion into another chena is represented a 'disgraceful act'. Even if the chena without the consent of the original cultivator.

The system of 'ande' cultivation has led to the creation of social imbalance even in the 'purana' villages. The paddy land was held at a premium and the tenancy was at the wish of the owner. The land owners used to exploit the cultivators who had neither the security of tenure nor the guarantee of a fixed or a reasonable return for their labour in the development of the land. Moreover, the quality of agriculture in the tenanted lands often suffered due to the insecurity of the farmer and often due to absentee land-lordism.

It is in the context of this system of land tenure regarding the paddy lands the Paddy Land Act (No 1 of 1958) has to be viewed. The act sought to redress the social imbalance existing in village society particularly that between the owner of paddy lands and the tenant-cultivators. The act attempted to safeguard and ensure the security of tenure to the tenant cultivator to

determine the rent or shares due to the landlord and to deal with other matters affected paddy cultivation. An important component of this Act was the creation of statutory Farmer Organizations. The Cultivation Committee with responsibilities to safeguard the interests of the cultivator to manage the efficient distribution of irrigation water to collect the acreage taxes and to channel agricultural services and inputs.

However, it has be mentioned that the Paddy Land Act failed to be an effective force in agricultural development as it was expected to be. The major reasons for its ineffectiveness can be summarized as follows:

- a) The Act endeavoured to ensure security of tenure to the tenant cultivator without taking into consideration the close and intimate social and economic ties that bound the landlord and the tenant. It is doubtful if the tenant cultivator would openly flout the authority of the landlord who is often his own kith and kin or who provided him with credit and other help in times of needs.
- b) The Act took into consideration only the paddy lands and not highland. The highland too constitute an important factor in the economic life of people. Even if the landlord "gave in" to the tenant with regards to paddy land he could always have a hold on him by depriving him of the use of highland for cultivation.
- c) The Act attempted to bring about changes in the pattern of tenancy without effecting basis reforms on land tenure. The wealthy landowners with their power and authority were able to "manipulate" most

of the cultivation committee members to serve their own ends. Most committee members became 'pawns' in the hands of the wealthy landlords.

- d) Nepotism and corruption weakened considerably the power and authority of the Act. Partisan politics and sometimes the considerations such as caste, area of origin and other factors caused disunity and disharmony in the Cultivation Committee.
- e) Under the 'Vel Vidane' system, prior to the Paddy Land Act, the services rendered by the 'Vel Vidane' as irrigation water manager were well accepted and payment for his services was in kind. With the paddy Land Act an acreage tax had to be paid in cash. Non-payment resulted in protracted legal action and much expenditure of time and money. It therefore became very unpopular with the cultivators.
- f) The cultivators did not take an interest in the election of office bearers and committee members as the elections were often manipulated by a few cultivators who were already in leadership positions in other voluntary organizations at the village level.
- g) The average tenant farmer and the owner cultivator did not understand the provisions of the Paddy Lands Act or did not make a conscious attempt to understand the intricacies of this legal document. With this lack of understanding came doubt and skepticism of the value of the Act as an instrument safe-guarding the interests of the tenant cultivator.

5. Condition of Crown Alienation and the Problem of Encroachments

Legal provision regarding the alienation of state land are included in the Land Development Ordinance of 1935 as amended by Act No. 60 of 1961 and 16 of 1969. The more important of these provisions are:

- delivery of a permit authorized the occupation of the land on the payment of an annual rent. The duration of the lease is 99 years.
- When the permit holder has paid all sums which he is required to pay and has complied with all the other conditions specified in the permit, he becomes "the owner of the land of which he is in occupation" and is "entitled to receive a grant of that land.

Sales, leases and mortgages are practically prohibited except in circumstances very rigidly defined. Succession is limited to a single successor. In the village areas (contrary to the Colonization Schemes) these occupying state land without a permit or grant outnumbers those who legally 'own' land under the provisions of L.D.O. This statement raises the matter of state land encroachments included in this report, for they have more relevance to the future settlement in Mahaweli Area than to the present situation in the undeveloped lands of the Project area.

Two sets of explanation can be put forward to justify the important of the phenomenon related to encroachments of state land. On the one hand their is the overflow of the

colonization schemes and to a lesser degree at the existing Purana villages, and on the other hand there are the migrants from the over populated areas of the Wet Zone. Due to the scarcity of marketable land in the Purana villages and the strict rules prohibiting the sales of alienated state land, these people find it convenient to encroach on the state land.

On the other hand during the past few years, the government has closed eyes to the problem by regularization of encroachments and giving them legal status or by neglecting totally. This policy of indifference or active neutrality contributed strongly to a rapid spread of encroachments in the area. It is obvious that encroachments will seriously interfere with project activities. With regards to engineering works, encroachments would interfere with channel-traces, land levelling, irrigation structures and reservoirs, resulting in ejection producers and consequent delays in the construction schedules. Encroachment also would be a major obstacle to the proper implementation of a planned settlement programme. They would also cause unnecessary tensions between colonists, encroachers and the government authorities. As the settlement commence in 1975/76 encroachments can take place to a point where there would be no land for bona fide setter-selectees. The problems is severe and the risk not be underestimated.

6. Fragmentation of Holdings

Another salient feature of land tenure in the Project area is the extreme fragmentation of holdings, specially paddy land. Although no accurate data readily available

for the Project area, it can be assumed that the incidence of fragmentation of cultivated land is very high, as indicated by the results of several studies conducted by the MDB in representative villages. In fact, the fragmentation is quite typical of paddy lands. There is little fragmentation of the highlands.

7. Farming activities

Subsistence farming is essentially the lot of Purana villagers. In the Purana villages the main source of income are paddy cultivation and chena cultivation. Due to lack of water most paddy fields are cultivated only in the Maha (wet) season. In the Yala(dry) season the income is from the chena produce such as chillies, gingelly and vegetables. They have to preserve the paddy to last them throughout the year. Therefore very few farmers sell paddy. Other agricultural produce is sold to private trader at low prices. The farmer find it difficult to dispose of his vegetable due to lack of an efficient marketing system. The village fair (Pola) provides very restricted opportunity to sell his agricultural produce. Although it is not possible to make a generalization, the following estimate can be made of the way in which paddy is disposed of during any one year.

10% for seed paddy. 10% as payment for buffaloes.
20% transformed into cash-barter, 20% sold, 40% consumption.

From the above observations it is seen that subsistence farming in paddy is linked with the ownership of paddy land under the customary law. Villagers' concept of cash-crop farming is based on the operation of chena land

generally without a permit. It is therefore not difficult to understand the high degree of sentimental value which purana villagers attach to the ownership of paddy-lands.

8. Cash crop farming

Although substantial income is derived from the sale of paddy it is considered by most farmers as a non cash crop and chena cultivation is considered more important farming. Throughout the project area Purana villagers, colonists and 'new' villagers engage themselves in chena cultivation. Almost all chena plots are encroachments on state forests and reservations. Chena cultivation depends solely on rain water from the Northern Eastern Monsoon.

Chenas are cultivated with certain varieties of paddy, grains such as 'kurakkan', meneri, gingelly - pulses such as green grams and dhal and vegetables, yams, bananas, onions, chillies and tobacco. The chena produce is sold in small quantities at the local fair, and to private traders. There is no organized marketing system for chena produce.

Almost all Purana villagers and colonists have small plots of coconut cultivation in their homestead, and they derive a small income from the sale of coconuts. There are only very few large scale coconut plantation owned by landowners. From an economic point of view the colonists in the major colonization schemes (now organizes as Special Projects) is much better off than the traditional Purana villager. He is assured of adequate irrigation water for cultivation often for two seasons of paddy. The supply of credit, inputs, extension services, education

and marketing of paddy and other produce are better organized

Disposal of paddy in Special Projects follow a pattern different to that of the Purana villages, viz: 10% kept for seed, 50% for consumption and 40% sold.

The peasants in the new villagers are the worst off. As they are outsiders they do not own any paddy land, and are ande cultivators (share croppers). Their income is mostly from the sale of chena produce. The problem of encroachments is most widespread in the new villages. Both from a social and economic point of view the peasants in the new villagers are marginal men.

9. Animal husbandry

Purana villager attaches great social value to the possession of cattle. Usually a cattle owner is referred to as one who has the "Gava Sampatha" - one of the five treasures a man can possess. Such a person usually own a small herd of cattle and buffaloes. The ox is used as a drought animal in bullock carts and the cow which is treated as a sacred animal is used for milk only. The buffalo is used for ploughing and for threshing paddy and greater care is taken of it. Very often the buffaloes are rented for ploughing and threshing and payment which is prompt is made usually in kind. The attitude with regards to other animals is different. Poultry, rearing of pigs and goats are generally considered as sinful acts and if left to those who are non-Buddhists. The attitude appears to have discouraged the promotion and development of animal husbandry in the area.

10. Irrigation practices

At the village level it is the responsibility of the Cultivation Committee to attend to matters connected with irrigation. According to the Paddy Land Act No. 1 of 1958 and subsequent amendments, the cultivation works in such a manner as may be approved by the Commissioner of Agrarian Services, and to exercise and perform, within that area the power and duties of irrigation headmen (Vel Vidane) under the Irrigation Ordinance or under any other written law.

Before the enactment of the Paddy Land Act and the formation of the Cultivation Committees these matters were attended to by the "Vel Vidane". Unlike the "Vel Vidane" the Cultivation Committee had to encounter many difficulties. Members of the Cultivation Committee who are dependent on the popular vote of the cultivators for their position, did not adequately enforce the regulation regarding the obligations of offenders and defaulters was a cumbersome and costly procedure. Due to these difficulties the duties regarding repair and maintenance of irrigation works and irrigation channels went by default, and the Cultivation Committees became unpopular. In addition partisan interests and village conflicts hampered the functioning and the effects of the Cultivation Committee on the peasant community.

11. Calendar and pattern of cultivation

Due to the brake down of the irrigation discipline and the inadequacy of the machinery to enforce the rules and regulations the problems of untimely cultivation and the

inability to "catch" the season have become very acute and is the basis cause for the neglect of maintenance and repairs of the irrigation system. Several attempts have been made in the past to prevail on farmers to conform to agreed dates of cultivation. But these attempts have had only limited results. This is due to first instance due to the lack of pressure of work during the dry months of the year, the peasants get down to the task of clearing chena. This involves no investment as such except that of labour. As the period available for clearing is fairly long, it is expected in this chena. No outside labour is hired. Once the chenas have been cleared it is natural for the cultivation of these to be complete before the villagers think of any other from of cultivation. If the chenas are not sown in time, they would revert to secondary jungle, or at these chenas are sown early, the crops grown on them are likely to die for want of water when the rains taper off towards January. Therefore, priority is naturally given to the completion of cultivation in the chena, before the paddy cultivation is undertaken.

After the cultivation of chena, farmers turn their attention to cultivation of land which they have "encroached" on. In fact this has turned out to be another land class. Because of their insecure title in regard to this land, they attempt to safeguard their rights by the timely cultivation of these. By this process they think that they could be successful in keeping the lands they have encroached.

It is only after these operations, the farmers work the lands under the village tanks. This appears to be a legal approach because the philosophy is to make maximum advantage of the rainfall that accrue during the season.

The reason for this pattern of cultivation is obviously the need to spend the available labour over a larger period of time in the Maha.

11. Officials and Peasants

Relationship between officials and peasants is a crucial matter since no innovation can be implemented at grass-root levels, without a minimum of confidence and sympathy from one to the other. It is generally observed that the pattern of relationship between these two groups is far from being one of close, confident and faithful cooperation. The officials tend to consider farmers as an inferior category of persons from whom they expect submissive stereotyped behaviour. The peasants on the other hand distrust the bulk of officers especially those at middle grade and field levels.

Most officers at middle and field levels do not link to deal with peasants as equal partners with freedom of expression. The officials generally suffer from a complex that they alone can find solutions to the problems confronted by peasants. Any explanation by peasants is considered by officials as a criticism of the administration. Most officials are sensitive to this and react strongly.

In the Purana villages, most village level officials except the Grama Sevakas lack knowledge of local conditions and are unaware of the conflicting situations underlying the village life. They have their own favorites among peasants and try to work through them. These favorite peasants are considered by officials as the most informed on village affairs. The tendency of the

officials to distrust peasants in general is strengthened by the type of humble and submissive behaviour they expect from them. The officials are well aware that this 'submission' is just 'playing a role' and this awareness makes them be very different towards the peasants. On the whole the officials seem to be trapped in a vicious system of relationship. The submissive behaviour of the peasant enhances their superior status, and even though the officials are aware that this submission is not genuine, they are skeptical on what the peasants have to say on various matters concerning village affairs.

12. Peasants' view of the officials.

To a Purana villager a government official (even a petty official) is one who cannot be approached without playing a stereotype role. Being considered as a superior person and also as one who expects to be considered so, the officer needs to be propitiated. The sentiments expressed in many statements made by peasants regarding officials are obviously stereotyped and partly unfair because of their inclination to generalize.

Distrust and contempt are the logical consequences of the submissive patterns of behaviour that farmers are compelled to assume when dealing with officials. This type of relationship makes any cooperation between officials and peasant difficult to achieve and constitutes a bottleneck in introducing innovations and change. With this type of attitude it is difficult to expect most these officials to be genuine initiators or catalyst-agents of agricultural and rural development.

13. Linkages Between Administrators and Village Organizations

As discussed in the proceeding sections, the reorganization of the existing organizations would not go a long way to achieve the objectives of popular participation in administration and the promotion of social and economic development in the Project area. Viability can be achieved only by enlarging the geographic area of operation and by expanding the activities to cover all the social, economic and institutional life of a specific area. The remedy therefore, is to create a single multi-purpose organization at the village level within a reasonable reach of the farmer in the geographical as well as social, economic and institutional sense. To achieve this, it is necessary that the basic structure of the existing organizations should be subjected to a complete over-haul. In such an attempt, there is a need to find new mechanisms by which the administrative machinery could be harmoniously linked with the people's organizations at the grass roots level. The past officers in this sphere have been merely confined to the creation of new organizations to exist side by side with the old ones or by reorganization of the old ones to meet crisis situations as and when they arose. The promotion and development of an efficient structure of farmers' organizations has to be based essentially on long-term policies with clearly defined objectives.

14. The Five Year Plan strategy - Divisional Development Councils

The Five Year Plan makes provisions for an effective linkage of the network of government agencies with the local community and its representative institutions through the Divisional Development Councils. These three councils consist of government officials and representatives of institutions such as the Cooperative Societies, Cultivation committees, People's Committees and Village Councils. The functions of these Councils include the formulation of development projects and preparation of development programmes for their areas. They will also assist in the coordination of development activities and the review of plan implementation in their areas. The Divisional Development Councils were set up at the beginning of 1972 and have been functioning for sometime. A large number of small-scale agricultural, industrial and infra-structural projects have been implemented. According to the Five Year Plan the indications are that they can go a long way to secure popular participation and public interests in the development effort.

15. Principles Underlying the Colonization Policy

There is general agreement that the functioning of the existing colonization schemes is unsatisfactory with many defects and shortcomings. Some of these are discussed below:

Recruitment of Colonists

The recruitment of colonists for major colonization schemes is normally done through interviews by officials and this is normally known as 'Land Kachcheries' where applications from the prospective settlers are processed and their suitability determined. In the 'Land Kachcheri' system much emphasis is given to the selection of colonists only within a given criteria.

The allottees should be persons who are capable of making the best use of the facilities available in a colonization schemes to obtain the maximum return from their farms and thereby contributing not only to their own betterment, but also to that of the country. At the early stages of colonization, weightage was given to the social welfare in the selection of farmers where those who are landless and with large families were preferentially treated. The assumption was that applications with large families would have a sufficiently large labour force to assist them in the farm.

As mentioned above, for a long period, that is up to about 1968, the selection of colonists at the Land Kachcheries was more or less governed by welfare considerations where the landlessness and the large size of the family was perhaps the main criteria of selection. Since 1968, emphasis was shifted to economic criteria where preference was given to agricultural knowledge, experience, capacity and initiative. The results are encouraging and a proper evaluation could be made only after some time.

Presently, some of the unsatisfactory results of the previous methods of selection have demonstrated. It seems that in very numerous cases, the selection was based on the recommendations of the local officers such as the Village Headmen and Grama Sevaka. Often this was also made use of to get rid of some of the 'undesirable characters' from the village. Colonization schemes therefore became at least in part the dumping ground of some of the unwanted and marginal men. Some of these selectees did not own any agricultural land and had little experience in farming activities.

Finally as no attention was ever paid to the homogeneity of the settlers on caste, geo-cultural origin, or any other basis, the opportunity to foster social cohesiveness and community feeling was lost. On the contrary, a fair level of social heterogeneity was noticed which contributed to the social disruption which is presently observed in several colonization schemes. Illicit brewing of kassippu and gambling are not uncommon behaviour in the major schemes though the Purana villages are not free of them either.

16. Administration and Services: supervision and management

There is a considerable differences in the administrative set up in the colonization schemes when compared with that of the other rural areas. In the Purana villages for instance the only government officer the people had close contact with is the Grama Sevaka and sometimes the K.V.S. In colonization schemes the Colonization Officer of the Land Commissioner's Department assisted by several Land Development Overseers exercised a more intensive

supervision of the colonist, and had a control over them. In addition to these officers other departments such as Irrigation, Co-operative Department, Marketing had their own field staff to attend to the relevant aspects of the development work.

Special Projects have imposed on the Colonization Schemes a different organization which is headed by a Special Project Manager theoretically given sufficient power to co-ordinate the activities of all the officers from various departments working in the special project area. This system was expected to provide the vital co-ordination required at the scheme level.

Generally speaking, colonization schemes show the same shortcomings and administrative defects observed elsewhere in the non-colonization rural areas. However it seems that the effect of these shortcoming is more noticeable in the colonization schemes than in the Purana Village areas. As was indicated earlier when we discussed the social stratification and the social mobility in the Colonization Schemes, the well-to-do colonists occupy an intermediate position between the peasants-farmer class and the lower strata of the middle class, membership of which they aspire to acquire.

To achieve this upward social mobility either for themselves or for their offspring, they seek the support from village or middle rank officers. As these officers themselves often come from well-to-do rural families, they tend to react very favorably to the need for the support solicited by the upper ladder of colonists. As indicated earlier identity of interests between two social categories leads to the monopolization of the limited services and benefits of the administration by a

previleged minority. What is worse is that some of the officers, once they realize the crucial position they hold between farmers and the higher ladders of the administrative machinery, try to 'cash in' on it, by resorting to bribery corruption.

17. Appraisal of the Colonization Policy

The functioning of the colonization schemes from their inception has been throwing up various defects and shortcomings which became the subject of study by several study groups and committees. Observations and comments of these different study groups can be generally summarized under seven major aspects as follows:

- 1 The very high cost involved in the provision of irrigation facilities, infra-structure, housing, credit and marketing facilities by government has been out of proportions to economic returns. The income realized has been very low in relation to the investment resulting in an overall capital output ratio of 12.1
- 11 The method of selection of settlers is also often criticized. It has been pointed out that the quality of human material in colonization schemes has been poor. Lack of training and the organization of the new settlers is a common drawback in almost all the colonization schemes. There is no preparation of the new colonist. It is also clear that no attempt has been made to train the settlers to manage their own affairs.

- 111 The government paternal attitude has led to the colonist developing a pattern of submissive behaviour. There is a surplus of government authority and officials have usurped the community leadership positions. The colonist is not involved in any stage of planning, implementation and evaluation of programmes.
- 1V Traditional peasant agriculture with all its attendant defects has been transplanted in colonization schemes. It has often been pointed out that the planning and organization of the colonization schemes has been geared unintentionally towards the perpetuation of the traditional subsistence farming and has given paddy cultivation preference over other crops.
- V Un-employment and under-employment in colonization schemes are another area of common criticism. It has been pointed out that due to the emphasis on paddy cultivation to the exclusion of other crops, labour available on the farm is under utilized.
- V11 The present layout of village centres, the physical planning and layout of colonization scheme has not received much attention. The highland lots being earlier 2 to 3 acres in extent were spread long distances and the provision of infra-structure services and facilities have been difficult. Often the distance from the homestead to the paddy land was anything between 1 to 3 miles. It was pointed out that individual holdings were widely dispersed causing difficulties in social and organizational integration.

18. What model for Mahaweli?

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The existing colonization schemes in many respects will not satisfy the needs and scope of Mahaweli Development Programme, and cannot therefore be considered as the model for its settlement pattern. The defects and shortcomings of the peasant system of Colonization tends to overweight its achievements. In designing colonization schemes, special projects and even the pilot farms it has often been forgotten that farmers are human beings, with specific and conflicting interests, motivations and values and not just items of farm machinery. It has also been forgotten that when a man leaves his traditional habitat to settle down in a new environment, he is liable to feel more insecure. The basic psychological characteristic of any new colonist or allottee is a general state of insecurity, suspicion and mental weakness. A new colonist is a transient, loaded with all his individual and social past. But uncertainty of the future weight heavily on him. If this man is of the pioneer type, he will be able to cope up with the new challenge mixed with fears and hops. Human expectations cannot be managed in the same manner as materials and machines. If a material or a machine is wasted, it costs only money to replace it. On the other hand, if a man's confidence is eroded, it becomes nearly impossible to create a new confidence in him. Human factors are generally not so flexible as material factors.

As it is almost late, immediate steps have to be taken to remove the gap between the two worlds, the world of the peasants and that of the officials. However, it has to be empathetically stated that better results cannot be achieved in this exercise, the previous models even with

improvements. Therefore we propose a new model for the Mahaweli Project settlement, a model which integrates several institutions and organizations already existing and some to be introduced anew. This model as a pivotal and a dynamic feature will contain a hierarchy of farmers organizations with well defined authority, and a comprehensive range of functions. Increasing agricultural production through a network of farmers' settlement based on family-farms which are planned, executed and managed by farmers themselves through a network of farmers' organizations.

20. Basic Principles and Objectives of the Project

The basic principles guiding the implementation of new settlements in Mahaweli Development find their inspiration from the first in a unique settlement programme based on the principles of community development. As regards agricultural development the project has special objectives based on its programme of implementation. A successful settlement programme will have to have positive effects on the agricultural development of the Project. Only such a well combined effort will have its impact on the success of the Mahaweli Development Programme.

Objectives

The objectives of the Project are:

- a) increase of production
- b) increase of productivity
- c) increase of peasant income and standard of living
- d) promotion of the initiative of the peasants

- e) integration of population from different areas and various cultural backgrounds and
- f) generation and generalization of social change

Promotion of the peasants' initiative and to instil a spirit of innovation in him are some of the important objectives of the Project since they are vital for creating a dynamic and progressive society. The peasants' initiative when channelled effectively would substantially relieve the administrative machinery of a costly burden. The numerous shortcoming and failures of settlement schemes are due to the inability and leadership of the rural people.

It is envisaged that, when the peasants' initiative is recognized and when he is given confidence, it will result in the full participation of the people in all facets of the Project including planning implementation and evaluation of the Project Programme. This will pave the way for ultimate self management and self government, through strong and well coordinated peoples' organizations.

Some of the existing old settlements which can be upgraded with the proposed physical patterns of new settlement will be allowed to remain in the present locations subject to their being upgraded. However, where the unit of homestead allotment is much below the accepted size, the new settlement programme will have to be re-planned and sometimes consolidated to conform to the proposed new pattern of settlement. Some of the present homesteads which will become irrigable, and therefore could be converted to good farm lands, will have to be shifted to new homestead areas.

Introducing several thousands of families from outside the area to be settled along with the existing population mean that a wide variety of people from different geo-cultural backgrounds and different social and religious groups will have to live together harmoniously not only without hampering the achievement of the Project but more positively by contributing towards its development socially, culturally and economically. As the successful social integration of these people is a crucial condition to the success of the project, it becomes a major objective to achieve within the shortest period possible.

21. Generation of Social Change

Any development project will not be able to achieve the desired results, if it does not generate a very wide range of social changes, many of which are not included within the narrow definition of project objectives. It is also necessary that the changes so generated become well established so that they become part and parcel of the community life, and a dynamic process for more positive innovation.

A project like the Mahaweli encompassing so many objectives is expected to contribute significantly to shifting the values of a traditional society to those of a modern but healthy one. Such a general expectation implies changes in many fields such as:

- technical know-how and use of modern agricultural inputs
- better investment and consumption pattern, farmers' budgeting and saving habits
- patterns of new relationships, new social stratification and rational grouping patterns, providing social mobility.

- level of literacy knowledge and civic consciousness, attitudes and values
- sense of duties, responsibility and participation in public affairs
- economic and national integration, etc.

22. Basic Principals

It is our contention that five basic principles must be followed in order to achieve the above stated objectives; a) social cohesiveness b) effective leadership c) self-management d) contractual economy and e) community development

By social cohesiveness, it is meant that settlers are grouped together according to bases of their choice, such geographical origin, cultural patterns, race, religion, caste or on any other factors. Social cohesiveness once achieved will enable the people to have a larger share in common in the social affairs, more than when they are opposed to one another due to tensions and conflicts. It does not means that conflicts cannot occur within such a society, but when they occur it is within the control of the community to contain, control and settle them.

It is assumed that social cohesiveness will bring about a higher degree of self-identification, solidarity and participation in rural institutions resulting in increased agricultural productivity and a better and more efficient functioning of the cooperative, credit and marketing system.

23. Effective Leadership

The authorities should give up the present practice of recognizing and favouring people masquerading as farmer leaders who monopolize the leadership positions in the rural institutions. New leaders should be systematically identified, selected and carefully trained so as to increase their efficiency. On the other hand, officials should give up the idea that peasant leaders constitute the inferior bottom rung of the ladder of the administration to channel their instructions and orders to the bulk of farmers.

Officials should appreciate that peasants' leaders are primarily there to represent the farmers themselves and that any disagreements between the officials and the peasants' leaders are quite appreciable even desirable in certain instances. Indeed, such disagreements it any should lead officials to re-think on their own ideas and attitudes in dealing with the farmers and thus encourage them to be more sensitive to the felt needs of rural society.

24. Self-management

It is quite impossible to arouse peasants' initiative and to relieve the administration of its present burden of heavy costs, defects and delay if cognizance is not given to the fact that peasants have a right to manage their own affairs. They should be made to realize that they are well equipped to run their own activities in a manner they consider the most appropriate in keeping with their requirements and aspirations provided they meet with the objectives of the state.

Self-management means that farmers are fully responsible for the running of their affairs and that the role of officials should be to grant technical assistance, guidance and advice only and should no more be in a position of dominance. Self-management implies that farmers govern themselves by means of selected committees, operated according to the dispositions and procedures they would determine for themselves. Officials should not even be ex-officio members of these committees but could sit on the committee only in an advisory capacity if and when requested by the farmers.

25. Contractual Economy

Contractual economy means that the efforts of government on one side be directed towards the achievement of villagers' project and that reversely peasants must be aware of their reciprocal responsibilities to the state and realize that even a welfare state has not unlimited resources. If they require State assistance, they must know that this assistance entails their obligations towards the government. Farmers must know that the concomitance of self government are self-reliance and self-respect. The self-government of settlers' committee should be implemented only with the guarantees firstly of the right to organize and govern themselves and they should be made aware that this right implies greater responsibilities stretching even beyond the boundaries of their own community. It is implied that farmers have an obligation towards the Project and that they are responsible for the economic development of the country based on the success of the Project programme. Therefore,

a self-government formula should be closely linked with a contractual type of economy.

Once each year or more frequently farmers' representatives and officials from the various departments associated with the project should meet to discuss the proposed programme of irrigation, cultivation, supply of inputs, credit and marketing requirements and improvements to public facilities etc; the final objective being to reach an agreement on the reciprocal commitments of each side while making provisions to accommodate possible shortcomings or delays. Farmers and officials are then in a position to engage in active partnership, which can transform a dependent economy into a contractual type of economy.

26. Community Development

It is evident that the introduction of self-government and contractual economy in the new settlements would not proceed without difficulties and problems and therefore, such a system needs the permanent support of a good community development programme. By community development it is meant that a set of combined development techniques of their social forces, their needs and the advantages in directing them constructively towards common goals having in mind the necessity forth improvement of their standard of living individually and communally.

27. SETTLEMENTS

When recommendation are made regarding agricultural settlements, it is customary to begin with those on the

recruitment of settlers. We have darted from this pattern and some brief explanations are therefore necessary.

It is considered that the proposed criteria for the recruitment and selection of settlers will not be fully explained without a prior understanding of the lay-out of the new settlements, their management conditions of settlement of the farmers, the pattern of the farmers' organizations and the programmes of community development. Criteria for recruitment and selection cannot be discussed without explaining the objectives of settlement. As indicated before these objectives are not only efficient farming and proper use of irrigation facilities but also the promotion of social cohesiveness, leadership, capacity for self-management and community development.

28. Type of Settlement

It is recommended that the new farmers be settled in clustered settlements, one cluster-corresponding approximately to an irrigation block. Each cluster should consist of not more than four or five sub-units or hamlets. As an alternative, it is proposed that a single cluster without separate sub-units (hamlets) be organized only when compelled to do so by the topography of the land and the requirements of the irrigation layout. Otherwise the clustered type with separated sub-units will be the normal pattern. It is possible to locate two clustered settlements, each with its four or five sub-units within a single irrigation block when topography makes it necessary to do so.

The settlement patterns most suitable for the project are clustered farms or villages. Up to now, scattered farms or semi-scattered villages have been the pattern of settlements in colonization schemes. Much inconvenience resulted from this pattern, such as long distances separating the homesteads and the irrigation farm lands within the same settlement, difficulty in the provision and the utilization of public facilities, problems in fostering better relationships and solidarity among the inhabitants and the lack of self-identification by the settlers. The small neighboring units in the scattered settlements were not in a position to play a dynamic role in the collective life of the settlers.

It is recommended that existing settlements within the Project area which conform to the proposed patterns should be allowed to remain to upgrading. In upgrading existing settlements and in integrating them with the new settlements, it is necessary for each village to be considered separately as each one has its own features. Such a task should be undertaken with the least possible dislocation of the social and cultural life of the people. Some of the existing villages which would fall within the new irrigation farmland area to be shifted to new sites, and the people have to be resettled in the new settlements.

29. Size of Settlements

It is reaccommodate that the size of each cluster should not be more than four to five hundred families. This means that the size of each sub-unit or hamlet should be about one hundred families. It can be observed that in the existing major colonization schemes numerous

inconveniences exist due to inadequacy of such services, which lead to the creation of a frustrated community.

In a rural context where solidarity ties are of great importance for everyday life, a settlement of several thousands of people constitutes a milieu unfavorable to the development of any social cohesiveness, solidarity and complementarity. reversely, its anonymous character and the fact that it favours impersonal relationships between people are propitious to social anemic. Such a situation pave the way for an indifferent bureaucracy to assume control, and the authorities responsible for the settlement will then e^Gresort to organizational patterns too alien to the rural mentality. Moreover such a device implies a very costly administrative and police control and more or less stifles the potential initiative of the colonists they have, when they arrive in the new settlement.

The size of about one hundred families for each hamlet a unit of a wider cluster or four or five hamlet corresponding to that of a typical Dry Zone village and constituting a type close to the traditional village environment, to which a great majority of its inhabitants are used to. This size of one hundred families for each hamlet corresponding generally to the peasants' conception of a manageable and comfortable social unit. For villagers and for old colonists such a dimension is the ideal to permit the managing of a new village by its own leaders, their control of social order and the correct operation of cultivation schedules without depending on the external authorities.

In such an environment, the collective social pressure for the repayment of loans among would be stronger. It

would strengthen face to face relationships among the people. Even if people may not be related, they would be able to know and observe each other very closely and thereby will contribute to the weakening and the ultimate break up of caste, and other social barriers.

30. Social composition of the proposed settlements

It is recommended that the new settlements should be established with the objective of fostering social homogeneity and cohesiveness. The achievement of this objective implies the following recommendation:

1. That each hamlet unit (approximately 100-150 families) should be composed of people having the same geo-cultural background and same social status and whenever practicable having the same caste affiliations.

It is proposed that when the new hamlets are planned and whenever possible, the selected farmers to be given an opportunity to;

a) to select the particular hamlet they wish to live in,

b) to get the farmers to group among themselves as the future settlers in a particular hamlet. The number will be 100-150 depending on the physical size and the number of land allotments in it. Given this opportunity, it is expected that the settlers will group themselves together on any basis acceptable to themselves, and it may be on geo-cultural origin, caste, long acquaintance, profession etc. This would enable the creation of a dynamic community of the basic hamlet level and the

harmonious blending of a number of social groups. The need of a blacksmith craftsmen on earthenware, jewellery etc. an astrologer, drummer etc. in a rural community is a long establish one.

31. Disposal of village tanks

1. It is recommended that some of the village tanks should be retained even though these tanks may not be specifically required for irrigation, drainage, water storage etc.

11. Even where the village tanks are not required for irrigation, a few of the village tanks should be retained for purposes such as domestic water supply and recreation.

111. The removal of small uneconomical village tanks should be implemented in stages according to priorities. for example high priority for the removal of tanks are not connected with the existing settlements.

While due consideration should given to economic and technical requirements, one must not ignore the multifarious social functions of the village tanks in the dry zone. Generally speaking a village tank plays its role in the annual rituals associated with cultivation. The tank is also the social centre of the village, where the womenfolk gather to exchange village gossip. For the menfolks too, it is their usual meeting place, where they bathe after a hard day's work in the field of the chena, and discuss village affairs and farming activities. The village become synonymous with the tank and is often

named after it. Therefore it is relevant that the removal of village tanks to make way for irrigation canals etc., has to be viewed in a wider perspective. The removal of this important symbol of village life in the dry zone should not be measured only from the economic benefits and engineering feasibility. Social and psychological considerations are especially important at a time when it is envisaged to integrate Purana villagers with outsiders. Such an integrating process must be made more difficult by taking hastily and inconsiderate measures.

32. Community belongingness, cohesiveness and solidarity

In order to create and strengthen a feeling of community interest among the members of each new settlement, it is recommended that steps be taken to encourage and promote the development of a sense of belongingness, community cohesiveness and solidarity.

1.to promote group cohesiveness and self identity each new settlement should be identified by a name as has been done in the Uda Walawe Project.

11.there should be in each village, a 'Village Farmers Committees'. Representatives of these committees should form a Cluster Farmers' Committee should form the 'Sub Area Farmers' committee and finally the 'Farmers Union constitute of representatives of the 'Sub Area Committee' at the Project level. Elected representatives of these Committees at the various levels would be responsible for the administration and management of most of the activities in the settlements, for example;

- a) Water management, social welfare and social service aspects and settlement of minor disputes etc., could be entrusted to the 'Sub Committees' to be formed in the Farmers' Committees at the various levels.
- b) Religious and cultural activities such as 'Sil' campaigns, harvest festivals, folk drama, folk dancing, poet assembly etc., should be promoted. The organization of these campaigns and festivals should be the responsibility of the Farmers' Committees at the various levels.
- c) Inter-village or inter-settlement competitions may be organized and conducted by the Farmers Committees at the various levels.

A review of the existing colonization settlements in the areas show a relative weakness of the community structure and framework when compared with the Purana villages. People do not identify themselves with the settlement and most settlers even after two decades do not consider the settlement as their real home. Usually the settler would name his birth-village as his home. This lack of belongingness is due to many reasons such as cultural and social heterogeneity, which promotes individuality rather than identification with a social group, lack of interdependency, lack of clear patterns of genuine leadership which leads to extreme dependence on the officials.

33. Service Centres

It is recommended that each cluster should have a service centre. This service centre should preferably be located centrally in the area to be serviced.

The maximum distance from any homestead to the service centre should be about three miles. The service centre should not be an isolated unit but would be located within the most central sub-unit (hamlet) of the cluster.

This centre should decentralized the supply of all the facilities, services, materials and equipment necessary for production, transport, storage, marketing of produce and those required in the day to day life of the farmer.

The village sub unit of each cluster should as much as possible be around the service centre. A suitable network of roads should link each of the hamlets and the villages to the service centre.

At sub-area level a 'urban' centre should function as a service centre to cater for several clusters with services, facilities and amenities of a higher level. This centre should also service cluster service centres. This lay-out pattern is shown in Chart 2.

34. OPERATION AND MANAGEMENT

Existing institutions

It is recommended that the functions now performed by various rural institutions such as the cultivation committees, rural development societies, community

centres, cooperative societies etc., should come within the propose Farmers' Committees.

In order to strengthen the farmers' organizations and to promote the initiative and leadership among farmers, the proposed farmer' organizations at the various level have necessarily to be given an increasing measure of authority and responsibility. It is envisaged that after a few years it would be possible for the farmers' organizations to take over the full management of all matters connected with the development activities.

35. New Farmers' Organization

It is recommended that the functional principle to be observed with regards to new settlements should be the promotion of self reliance and leadership for self management. This implies that at each level, i.e. village, cluster, sub-area and the project, the farmers will manage their own affairs by means of Hamlet Farmers' Committees, Cluster Farmers' Union operated at the Project level.

Election procedure and internal set-up - Each hamlet of 100-125 families will elect its own Farmers' Committee. The head of each family will be entitled to a single vote and election will be y secret ballot. It is envisaged that each hamlet Farmers' Committee will have about 10 representatives. The committee could form several sub-committee with each sub-committee being responsible for different aspects of development, such as the cooperative depot, water management, social welfare etc. There would be approximately 180-200 such committees operating in the project area.

Four or five village Farmers' Committees constituting a cluster will elect representatives to form the Cluster Farmers' Committee. It is envisaged that each Village Farmers' Committee will nominate two or three representatives, it is possible for the 400 to 500 settlers to elect representatives to the Cluster Farmers' Committee; In the alternative, it is possible for the 400 to 500 settlers to elect representatives to the Cluster Farmers' Committee; All elections will be by secret ballot. The decision however should be left to the settlers. It is envisaged that the Cluster Farmers' Committee will be composed of 10-15 elected representatives.

There will be 9 sub-areas in the Project and each will consist of five or six clusters. Each Cluster Farmers' Organization will elect two or three representatives to form the sub-area Farmers' Committees.

An important point is that provision should be made to prevent few interested exercising any possible monopoly of the leadership in the Farmers' Committees. It should be possible to limit a representative's mandate either to a few years or to a specific period necessary to lapse between the assumption of another arm of office.

Field of activities and responsibilities- It is felt the network of Farmers' Committees, with proper leadership will be competent to handle all aspects of development activities in the settlements in accordance with the Project administration. The major responsibilities of the Farmers' Committee, will be as follows:

1. Production Services.

a) channeling of extension services b) irrigation and water management c) enforcement of settlement and tenurial regulations d) preparation and implementation of cultivation calendar e) any other functions attended to by the Cultivation Committees at present.

11. Economic Services.

a) organization and management of the Cooperative Depot. Branch Cooperative, Primaries and the Rural Banks. The Farmers' Union at the Project level will work in close coordination with the Marketing and Credit division of the Project administration. b) sale and distribution of the input including agricultural machinery and implements c) collection, storage and marketing of agricultural produce. d) implementation of the credit schemes e) all other functions attached to by the cooperatives at present.

111. Community Development Services.

a) assist the Grama Sevaka and other Project Officers in maintaining law and order, Settlement of minor disputes amicably among farmers. b) assist the authorities in the maintenance of health and sanitation, high levels of nutrition, health programmes including family planning programme. c) organization of and participation in the various training programmes f) any other functions pertaining to the community as a whole.

36. Principles of functioning of Farmers' Organizations

It would not be advisable to impose too rigid a pattern regarding the organization and functioning of Farmers'

institutions and it is assumed that a clearer pattern will gradually evolve once the organization commence to operate on the basis of the recommendations discussed above. It will then be the responsibility of the Settlement Planning Development Division with the help of the Socio-Economic Research Union of the Project administration to work out the details in collaboration with Farmers' Committees and to draw up guide lines and procedures to be reviewed and changed if necessary on the experience gained.

It must be emphasized that all our recommendations concerning farmers' organizations are directed to a system which can operate with the minimum direction and control by Project personnel. It is one of our main objectives to assess the capacity of villagers to conceive and elaborate the organizational patterns for the future settlement schemes. For this purpose we designed a kind of productive test to evaluate the degree of creativity and potential initiative among villagers. This test showed that a very wide range of people (elders, young men, farmers, village traders, office bearers of rural institutions) are fully aware of the problems encountered by the rural institutions at grass-roots level. As such most of our recommendations are based on the views expressed by the villagers.

37. Organization and Administration

It is recommended that the linkage between the farmers' organizations and the administration should essentially be on basis of guidance and technical assistance.

At present relationships between officials and the existing farmers' organizations are either very weak or non-existent whenever it exists it does on the lines of domination and authority. The officials endeavour to implement the government's policies and programmes on agricultural production, technical improvements, repayment of loans, marketing etc. in an authoritative manner and this has failed to achieve results. In the new settlements it is strongly stressed that this pattern of relationship be completely changed in order to achieve optimum results.

This means that the officials would not be ex-officio members of the proposed committees but would sit on the committee only when requested to do by the farmers and even then they will act only in an advisory capacity. The officers at various levels will act not as the superiors of the farmers but as a decentralized link of the management of the Project.

It is assumed that once farmers realize that officials' role will not be to dominate but to demonstrate and guide them, they will respond better to the officials' advice and will promote enthusiastic participants in all the programmes of the Project.

APPENDIX II: Settlement Strategy under the Accelerated Mahaweli Programme - 'Mahaweli Ganga Development Program Implementation Strategy Study'. Main Report. September 1979.

1. Implementation Strategy and Scenarios

The Mahaweli Programme is an undertaking of unprecedented scale and it is complicated to a degree that would test the organizational skill in any country of the world. It is therefore imperative that its execution is based on careful planning and well-conceived strategies.

There are many possibilities with regard to sequence, i.e. the order to which the many sub-projects are carried out, and it is necessary to compare various scenarios based on different sequences.

But apart from sequence, the scenarios may also differ with regard to the many whole of The Accelerated Programme by 1984, i.e. the construction of the Victoria, Randenigala, Maduru Oya, Moragahakanda and Kotmale reservoirs, as well as the development and selling of about 120,000 hectares of land. It has already been said that the high priority accorded to the Mahaweli Programme is fully understandable.

With regard to the irrigation systems other constraints emerge. Developing and settling 120,000 hectares in 5 or 6 years, implies an annual implementation speed of more than 20,000 hectares and a settlement of 140,000 persons per year. This is a very high rate and in fact it is impossible to find examples from other countries in the world, where such rates of land development and settlement have been achieved over sustained period.

Progress on the downstream works has been slower than was envisaged as it took more effort than expected to mobilize the construction capacity needed for the high targets set. In system H, where most of the construction activity took place in the past two years most of the pre-construction activities were finalized at the start of the accelerated development in that system. In the new systems surveys and feasibility studies are still going on. Donors are considering financial assistance for the new systems, but this assistance cannot be finalized until the feasibility studies are completed and reviewed by the donors. In view of these and other factors there is clearly a need for a redefinition of implementation targets on the downstream work.

2. Constraints

It has been observed above that the lack of construction capacity was one of the major constraints at the onset of the Accelerated Programme. In the coming years another constraint will become important, the pre-construction activities such as surveys, studies finalizing foreign-aid assistance, detailed designs, tendering etc. Assuming that this and the construction capacity constraint can be overcome settlement and post-construction activities such as the provision of a social infrastructure, agricultural supporting services etc. may become a major constraint. In a well-conceived strategy all activities (pre-construction, construction and post-construction) have to be attuned.

3. Pre-construction constraints

Surveys, studies, preparing foreign-aid agreements, preparing designs and tender document, reviewing tenders, etc. do require time and highly qualified manpower. Some of these activities can be speeded up by calling in foreign consultants but a large part of the activities cannot be undertaken but by Sri Lankan and there is a shortage already of the highly qualified staff needed for these activities. The time needed to finalize foreign financial assistance.

4. Construction constraints

Heavy construction activity throughout the country and on the Mahaweli projects resulted in a strained construction sector in Sri Lanka in 1979. Extensive foreign contracting and design assistance had to be called in that year already. In the period 1980-1985 three or four major dams will be under construction at the same time. Since the local construction sector is already strained it will evidently be difficult to maintain progress on the downstream work. This the more so because the downstream work requires a large number of construction labour. On the basis of traditional local construction practices, it will be hard to keep the downstream work moving at the pace achieved in the recent past.

A large input of foreign constructing and design assistance for the main dams, transbasin canals and main and branch canals, including expatriate manpower for skills that are very short supply is at present envisaged for the construction of the project. Taking this into account and assuming the same construction practice, as in system H for work beyond the branch canal but executed

much more efficiently, a rather fast progress on downstream works appear possible.

5. Post-construction constraints

Construction is not an aim in itself but a necessary activity for creation of permanent employment in agriculture for the large number of landless and to create additional employment in the agricultural service sectors. To reach this goal a social infrastructure with health, education, public transport and general administrative facilities has to be created. To have these available in time requires an extraordinary effort especially in the organizational field since it requires the cooperation of various branches of the Government. But then still actual farming has to start, and in this study it has been assumed that immediately after settlement the first agricultural benefits will be realized, which implies the availability of agricultural service organizations to provide extension, seeds, fertilizers, marketing facilities, etc. If this cannot be realized, the project may be with regard to its social aims, i.e. the creation of a satisfied and reasonable prosperous rural community.

6. Macro-economic constraints

A very high speed of downstream development will cause serious macro-economic constraints. Inflation rates of 15% over world levels can then be expected and this together with increasing labour cost to attract sufficient manpower to the project area will increase the cost of the Programme considerably over present

estimates, with further negative consequences for the government budget as well as the balance of payments, even if it is assumed that foreign finance would shoulder at least a major share of the burden of cost increases. Programmes. that have similar goals, can be expected to have roughly the same macro-economic effects.

7. Outline of Consultant's Scenario

Considering all constraints involved, Consultants have attempted to draw up a scenario, which is ambitious, but nevertheless may be considered realistic, in that it would seem to be feasible to implement it given a high degree of dedication and efficiency in all sectors. Moreover, foreign assistance at different levels, financially as well as in terms of project preparation and implementation, is required. The development scenario could not be tested against all constraints noted above, only a check has been made regarding availability of manpower. A scenario assuming a general increase in construction starting from 6,000 ha/year in 1980 to 10,000 ha/year in 1984 appears possible though ambitious on account of pre-construction, construction and post-construction constraints. Beyond 1984 projections become highly speculative, but given a sustained policy of priority for the project further increases are possible. No doubt in a few year time a better schedule can be drawn up for the later part of the eighties taking into account the actual performance in the first years of the Accelerated Programme.

8. Cost of Irrigation Systems

Available areas and soil qualities have been estimated for all irrigation systems. In order to assess the economic potential of each system, benefits from farming, fisheries and forestry were compared with the cost of development. Of course, there are a number of cost items that must be considered as joint cost elements for more than one system. This is true for the main storage reservoirs as well as for the transbasin canals. In first instance only the costs of system-specific facilities have been estimated.

9. Benefits from Irrigation Systems

With regards to benefits, farm benefits are by far the most important. Based on soil characteristics, agronomic considerations, climatological factors and market limitations, cropping patterns were selected for all irrigation systems. As already mentioned, all poorly-drained lowlands were selected for paddy in Maha and Yala, intermediate lands for paddy in Maha and upland crops in Yala. Well-drained upland were considered for upland crops only, especially in order to avoid excessive water use. Crop budgets, based on cropping intensities of 98% in Maha and 80% in Yala were determined. Table (I) shows the main assumptions about agricultural yields.

The yields shows are targets expected to be reached after a number of years. For paddy is expected in the 5th year and for all other crops in the 8th year. After that a 1% annual increase is assumed until the 35th year.

Table (I)

Crop	Good quality soil		Poorer quality soils	
	<u>Maha</u>	<u>Yala</u>	<u>Maha</u>	<u>Yala</u>
Paddy	4.3	4.5	3.4	3.6
Sugarcane	67		--	--
Cotton		1.6	--	--
Tobacco		1.1	--	--
Groundnuts	1.6	1.8	1.6	1.8
Pulses	1.4	1.6	1.1	1.3
Soyabeans	1.5	2.0	1.2	1.7
Chillies	--	1.5	--	--
Onions	--	11.0	--	--
Vegetables	--	10.0	--	--
Bananas	--	1200 bunches/ha		

For paddy the assumed sequence of yields per ha on good soils is as follow:

Year	% of target yield	tons per ha	
		Maha	Yala
1	60	2.58	2.70
2	70	3.01	3.15
3	80	3.44	3.60
4	90	3.87	4.05
5	100	4.30	4.50
15	110	4.75	4.97
25	122	5.25	5.49
35 and later	135	5.80	6.07

Comparison of Costs and Benefits per System

These farm benefits, together with benefits from fisheries and forestry, can then for each system be compared with the cost of development. In this way an insight into the relative merits of each system is obtained, which may play a role in the selection of the sequence of execution, next to other factors like the necessity to construct major dams or transbasin canals, the extent to which detailed surveys and studies have advanced, etc. The comparison is based on the factious

FOREIGN CONTRACTORS

Nearly 70 percent of the funding on the headworks was coming in through foreign sources and in terms of the conditions of the foreign assistance received on the Mahaweli Project; the contractors were generally from the country which provided the funds. The level of funding and inflow of funds had never occurred before on so large a scale on any other project in Sri Lanka's history. In the case of Maduru Oya Project, for instance, the consortium of four Canadian firms was awarded contracts in April 1980 to the value of Rs. 1.3 billion and inflation took this sum up further.

In the case of the Victoria Project Balfour Beatty Nuttal of UK was awarded the tender for constructing the dam in March 1980 at a value of Rs. 1.5 billion and also the contract for constructing the tunnel at a value of Rs. 645 million. The contract for building the power Station was awarded to Costain International of UK in October 1980 at a value of Rs.250 million.

At Kotmale the construction contracts covering initial, Underground and Reservoir Works costing about Rs. 6.2 billion were awarded in 1979 to Messrs. Skanska Cementgiuteriet; and contracts for the Electrical and Mechanical Works costing Rs.1.2 billion were awarded in 1981 to ASEA, both of Sweden.

With such enormous sums of money being expended on these projects the issue of wastage or misuse of funds was raised in certain quarters. One official view point on charges of such wastage and misuse of funds was that once the contracts were awarded utilization of funds were the responsibility of the contractor firms and if there were instances of "leakages", in accounting terms provision had been made in their budgets for a small percentage of wastage.

There were numerous contractor firms involved in projects both after the start of the Accelerated Programme as well as before, as the following lists indicate. (It is possible that the lists do not include the names of some contracting firms, which were not available).

FOREIGN CONSULTANTS AND CONTRACTORS

Firms and Function

Victoria

1. Sir Alexander Gibb & Partners
2. Preece Cardew & Rider
3. Hydraulic Research Station
4. Balfour Beatty Nuttal Joint (Comprising Balfour Beatty Construction Ltd. & Edmund Nuttal Ltd.)

Consulting Engineers in association with Specialised advice from Main civil contractors for Dam and Tunnel.

5. Costain International Ltd. Power Station.
6. Whessoe Boving Joint Venture (Comprising Whessoe Heavy Engineering Ltd., Boving & Co. Ltd.)
Hydraulic Equipment
7. Balfour Kilpatrick Ltd.
Dam Electrical Distribution System
8. Boving & Co. Ltd.
Turbines and Associated plant
9. GEC Large Machines Ltd.
Generators and Associated Plant
10. Hawker Siddeley Power Transformers Ltd.
Transformers and Associated equipment.
11. NEI Reyrolle Ltd.
High Voltage Switchgear
12. BICC Supertension Cables Ltd
High and Low Voltage Cables
13. GEC Electrical Projects Ltd.
Station Miscellaneous Plant
14. Herbert Morris Ltd.
Cranes and Lifting Equipment
15. Eve Construction Ltd.
High Voltage Transmission Lines

KOIMALE

1. The Water and Power Development Consultancy Services (WAPCOS), Feasibility Studies
2. Sir William Halcrow and Partners; UK Consultancy Services
3. Kennedy & Donkin and Westbrook Mills, UK
Consultancy Services
4. SKANSKA of Sweden
Civil Engineering Works
5. ASEA of Sweden
Electro Mechanical Equipment
6. NEY/RPIC of France
Supplying of steel gates for the spillway

RANDENIGALA

1. Joint-venture Randenigala Mills Salzgitter Agrarund Electrowatt Feasibility Studies
2. Kreditanstalt für Wiederaufbau - 'KPW' Dam Construction
3. Joint Venture of M/s Dyckerheff and Widman, Bilfinger and berger and Alfred Kunz, of West Germany Joint Venture Randenigala Civil Contractors
4. Maschinenfabrik Augsburg-Nueraberg A.G. (M.A.N.) of West Germany Randenigala Hydromechanical Contractors
5. Brown Boveri and CIE Aktiengesellschaft (BBC) of West Germany Randenigala Electric Equipment Contractors

MADURU-OYA

1. Crippen International Ltd Canadian Consultants
2. The Foundation Company of Canada Ltd., Atlas-Gest, International Ltd., Fitzpatrick Construction Ltd & Janin Construction Ltd., Joint Venture Dam Construction
3. ACRES Consultants (Maduru Oya Dam and System B)
4. SOGREAH French Consultants (Maduru Oya Dam design)
5. Hydraulic Engineering Corporation of China (HECC) Manufacturer of all hydro-mechanical works for Maduru Oya project

DOWNSTREAM DEVELOPMENT

1. Snowy Mountains Engineering Corporation, Australia Construction and upgrading of 134 kilometres of roadway in Systems B & C
2. Tippets-Abbett-McCarthy-Stration (TAMS) of USA Environmental assessment study and plan of action in System B & C
3. Vianini Italy Contractor The R.B. Transbasin Channel, Minipe
4. Hazama Gumi Toda & C. ITOH of Japan (Joint Venture) Contractor - R.B. Transbasin, Channel No.2 Ratkinda
5. Nippon Koel Jec & Chue Koihatsu, Corporation Japan Consultants (Moragaha Kanda Feasibility Report)
6. NEDECO - The Netherlands Consultants - (Implementation Strategy of the Accelerated Mahaweli Programme)

7. SOIL Mechanics Ltd. of UK Consultants (Special Geological Survey)
8. Zachny - Dillingham USA (Construction of Left Bank Main Canal)
9. Louis Berger International Inc. USA

APPENDIX IV Characteristics of the Mahaweli Studies

1. Characteristics of the Mahaweli Documents

The literature on the Mahaweli is characterized by its variety of document types, in contrast to the bibliographic output of other areas of study. The document categories were classified as follows:

- a Surveys - these include socio-economic surveys, geologic, soil and hydrology surveys. It excluded the topographical surveys which had been carried out for the preparation of maps by the Survey Department and the surveys carried out by the consultants who conducted feasibility studies.
- b Review documents - in this category are included monographs, articles, position papers etc. which are usually restatements of existing information.
- c Feasibility studies - reconnaissance reports, briefing documents, pre-feasibility studies and feasibility studies fall within this category.
- d Plans, Programmes - includes plans, work programmes, implementation schedules, in respect of construction of headworks and to downstream development.
- e Progress Reports - only the first issue of a series has been counted. The frequency of these reports vary from fortnightly, monthly to

quarterly. Project completion reports have also been included.

- f Technical and Engineering - Documents relating to construction of headworks, their operation and maintenance and technical documents concerned with the physical implementation of the project.
- g Research studies - includes studies on evaluation of project impact, case studies, and critiques of the project.

Table 1 Types of Documents

<u>Document Category</u>	<u>Number</u>	<u>% of Total</u>
A. Surveys	99	10
B. Review documents	226	24
C. Feasibility studies	50	04
D. Plans, Programmes	79	09
E. Progress reports	65	07
F. Technical and Engineering	357	08
Total	948	100

It is observed that 38% of the documents comprise those that pertain to construction and engineering aspects of the project. This percentage would probably increase if the documents generated by the foreign consultants and contractors had been enumerated. 24% of the documents are classified as review documents. A 10% of the literature comprise those documents that contain the results of surveys - socio-economic, geologic, soil, - that had been undertaken from the 1960s. 9% of the documents related to planes, programmes and implementation schedules in respect of construction of headworks and downstream development. Thus as much as 92% of the literature documents the

operational aspects of the project. Evaluation, case studies and research studies account for only 8%, indicating perhaps the relatively little attention paid to assessing the impact of the project on different sectors.

Authorship

The implementation of the Mahaweli Programme involved the work of a host of specialists - economists, sociologists, agriculturalists, environmentalists, engineers, health professionals, administrators, planners etc. drawn from both Sri Lanka and abroad.

The international dimension of the Mahaweli Programme is nowhere more apparent than in the bibliographic output on the Mahaweli. USA, Canada, United Kingdom, Federal Republic of Germany, Sweden, The Netherlands, Belgium, Kuwait, Saudi Arabia, Japan, Australia, India, China, Switzerland, France, Italy and the European Economic Community, either provided financial assistance and/or consultants and contractors for the construction of headwork and downstream development. Recently, USSR expressed interest in financing the development of System A.

The Table below indicates the number of local and foreign personnel under whose authorship the documents have been issued. It should be noted that feasibility studies carried out by foreign consortia of consultants have been contracted according to the number of consultancy firms involved, whereas a large number of individuals were responsible for the actual study. However, as their names

Table 2

Authorship of Documents

<u>Authorship</u>	<u>No</u>	<u>% of Total</u>
Local	450	55
Foreign	360	45
	810	100

usually do not appear in the documents, there was no way of obtaining an accurate figure of the number of persons involved in such studies. Thus the figure does not reveal the actual number of foreign personnel involved, though it relates to available information and provides an indicator to the type of authorship.

The literature comments on the commissioning of foreign consultancy firms to carry out studies and the employments of a large number of foreign personnel, especially with regard to increasing the technical capacity of Sri Lankans. In 1970, a Commission of Inquiry appointed by the Ministry of Irrigation, Power and Highways examined the question of local capability for undertaking project work assisted by foreign consultants where necessary. More recently a contributor to the Economic Review stated that " in the Accelerated Mahaweli Programme, a number of large and complicated engineering structures have been constructed. The design and construction of these structures would have increased and developed the technical capabilities of the personnel associated with these projects. In the case of the Accelerated Mahaweli Programme we do not believe that a transfer of technology took place which increase the technological capabilities of our personnel. We doubt whether our technical people gained the valuable experience from these projects. One feels that what took

place was the transfer of engineering structures rather than the transfer of technology."

The foreign consultants those engaged in construction and worked in collaboration with local institutions such as the Central Engineering Consultancy Bureau, the Irrigation Department, Survey Department etc. but the exclusion of certain key institutions such as the Engineering Faculty of the University and the State Engineering Cooperation is also noted in the literature. The comparatively low participation of Sri Lankan engineering and technical personnel is to an extent reflected in the paucity of technical papers presented at professional fora. However, two other factors that may be responsible for this position are (a) the disinclination of these personnel to write and (b) their reluctance to discuss official data and policy. On the other hand, social scientists have a tendency to regard the project as a laboratory, but they are generally discouraged from research in the project area.

'Official' and 'Unofficial' Documents

Studies commissioned by official sources and those undertaken by individuals and institutions are indicated in the table below. Documents which have been issued by the Ministry of Mahaweli Development, Mahaweli Authority of Sri Lanka and any of its agents, and those commissioned by them have been classified as official. The remaining documents were classified as 'unofficial'.

Table 3

Official and Unofficial Documents

<u>Type</u>	<u>Number</u>	<u>% of Total</u>
Official	460	67
Un-official	235	33
	<hr/> 695	<hr/> 100

Official documents account for 67% of the bibliographic output while independent studies account for 33%. The predominance of official documents assumes significance in view of the following:

- a) The distrust of official data in some quarters.
- b) The use of this same data by planners and their general reluctance to accept independent point of views.
- c) The large number of studies which have ben based on economic projections and tentative data of feasibility studies.

Fugitive Nature of Documents

Another distinct characteristics of the documentation relating to the Mahaweli is its 'fugitive' nature that is a large number of documents are unpublished or are available for limited circulation only. Some documents are of a confidential nature. Published documents have ben classified as those that appear in journals, in monograph form, seminars, workshops and conferences and those which are accessible to those outside the Project and who require them. The un-published category is as high as 80% of the total bibliographic output, and this figure would probably increase if the confidential

documents mainly of donor and international aid agencies are included.

Sectoral Classification of Documents

Multipurpose development of the Mahaweli Ganga, which necessitated the adoption of an integrated approach has generated literature of a multi-disciplinary nature. The literature reflects the multifaceted nature and complexity of this very large scheme and the interdisciplinary characteristics of the project.

Once again it is observed that documents relating to construction and engineering dominate the bibliographic output. This category is followed by literature on settlements, agriculture, irrigation and water management. Socio-economic surveys also account for a substantial number of documents. In the bibliographic output is taken as an indicator of the emphasis laid on specific areas of activity, these statistics indicate that the main focus of the Project has been on construction aspects and that downstream development has proceeded at a slower pace than the completion of headwork. Several factors have contributed to the predominance of the literature on engineering and construction aspects of the project. Construction of headworks constituted a major component of the Accelerated Programme. This necessitated the generation of a large number of reports and reviews because of the emphasis on the completion of headworks on schedule and also to the several adjustments that had to be incorporated during the construction of headworks.

A phenomenal increase in the bibliographic output is recorded in the period after 1977, with the decision of

the Government to accelerate the project and is indicative of the increased activity associated with the accelerated programme. The slow growth of the bibliographic output of the pre 1977 period reflecting the slow pace of development gave way to a period of rapid growth after 1977, peaking in the years 1977-1983. The bibliographic output reveals a phasing off thereafter, coinciding with the completion of the feasibility studies.

Sectoral Growth of Literature

Sectoral bibliographic output is discussed in relation to environment and downstream development focussing on settlement. The imperatives of acceleration were, in addition to hydropower development, the increase in food production and creation of additional employment opportunities. But the achievement of project objectives depend not only on the construction and physical maintenance of the irrigation network, but also on settler satisfaction and their physical well-being. Table 1, indicated that literature on engineering and construction aspects dominated the literature while documents on the social aspects of the project were relatively few. The documents relating to settlement, agriculture, irrigation and water management were classified to determine those that deals with plans, programmes etc. which may be termed documents relating to inputs or delivery services and those studies that evaluate and identify problems. The sectoral classification of documents is given in the table below.

Table 4 Sectoral Classification of Documents

%

Construction, engineering and	
Technical Studies	38
Settlement	11
Planning, Project Formulation	09
Agriculture	09
Socio-economic Surveys	07
Environment	05
Feasibility Studies	04
Hydropower	3.5
Employment Productivity	03
Social infrastructure	03
Land use	1.5
Marketing and Credit	01
Cost Studies	01
Business Development	01
Women	01
Transport	0.7
Cultural Aspects	0.6
Archeology	0.6

Environment

Environmentalists and ecologists have expressed concern over the ecological destruction caused by the construction of dams. The loss of irreproducible assets, they claim, far outweigh the benefits to be derived from the project. Deforestation, effect on wild life habitats, environmental pollution consequent to the widespread use of agrochemicals in intensive farming and soil erosion are some of the negative impacts that have been enumerated. 50 documents have been issued relating to the environmental effects of the Mahaweli Development Programme, during the period 1969-83. Recommendations

have been made from 1969 with regard to the adoption of measures that will ameliorate potential environmental problems. The UNDP/FAO Master Plan made recommendation regarding land use and soil conservation measures, new forest reserves and wild life reserves. In 1977 the Government commissioned an American consulting firm to conduct an environmental assessment study and the 4 volume report highlighted some of the adverse environmental effect that may occur with the construction of dams. Following this report an environmental plan of action was formulated and issued, with the objective of ameliorating potential environmental problems. Another Project, the Man and Biosphere Programme of the UNESCO was engaged in a 5 year project in evaluating the socio-economic studies, monitoring of the biotic environment and monitoring of the physical environment.

Settlement

The literature records that land settlement schemes although popular in most Third World countries have not been particularly successful. Even in Sri Lanka, the previous land settlement schemes such as Gal Oya had limited results and others have shown the need to examine settlement schemes in its broader context of economic and social processes, as well as in their social, economic and political environments. This analysis, they state should be considered vital if past shortcomings are to be avoided. A total 89 references on settlements and settlement planning were located, of which 14 were published before 1977 and the balance 75 after 1975. 675 of the documents were concerned with settlement planning, location of townships etc. while 33% were research studies highlighting the growing

inequalities and alienation, social differentiation, the emergence of dominant groups and increasing income inequalities and poverty. The papers stress the need for closer attention to be paid to the economic and social structures than are emerging in the settlement schemes.

Agriculture

One of the main objective of the Mahaweli Project is the benefits to be driven from increased agricultural production from small farms. Cropping patterns were proposed to obtain a high net farm income per unit of water, while the emphasis from the inception has been on paddy farming. The documents reveal the problems of the development model of family farms, resulting in low incomes.

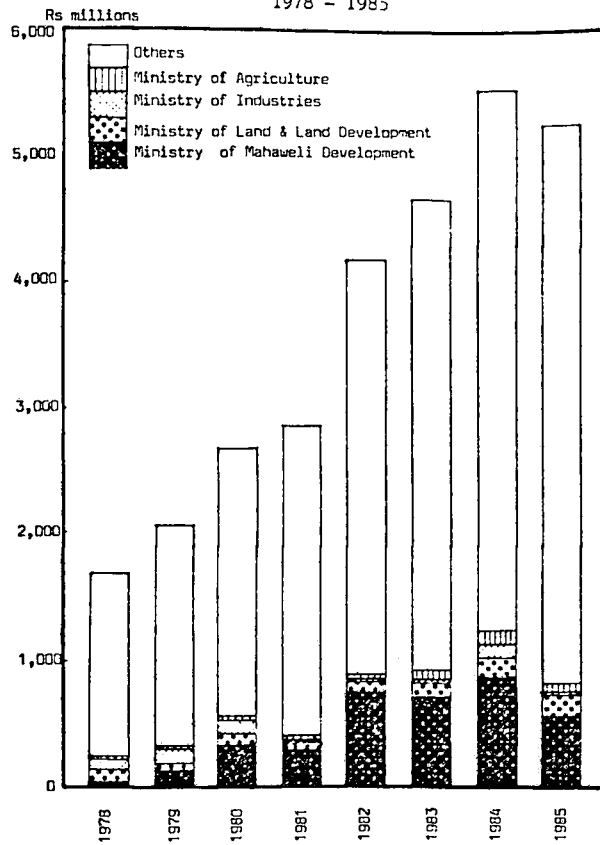
Irrigation and Water Management

As the availability of water is crucial in irrigated agriculture, the literature contains not only documents on methods of meeting irrigation water requirements but also documents on the causes of unequal and insufficient availability of water for cultivation, and the result of such unequal distribution. The documents were therefore separated into two categories to identify the literature available on these two areas. It is observed that the majority of documents relates to the first group and theses have been generated from the feasibility studies and from special water management projects such as the Demand irrigation Pipeline Project, Irrigation System Trials and Micro Model studies and the Mahaweli Water Resources Management Project. The Water Management Panel

is also responsible for a number of studies. Several studies have also identified problems and constraints to efficient water management. A smaller number of specific studies have surfaced the social problems, settler conflicts, community and the irrigation bureaucracy and the organization of turnout groups.

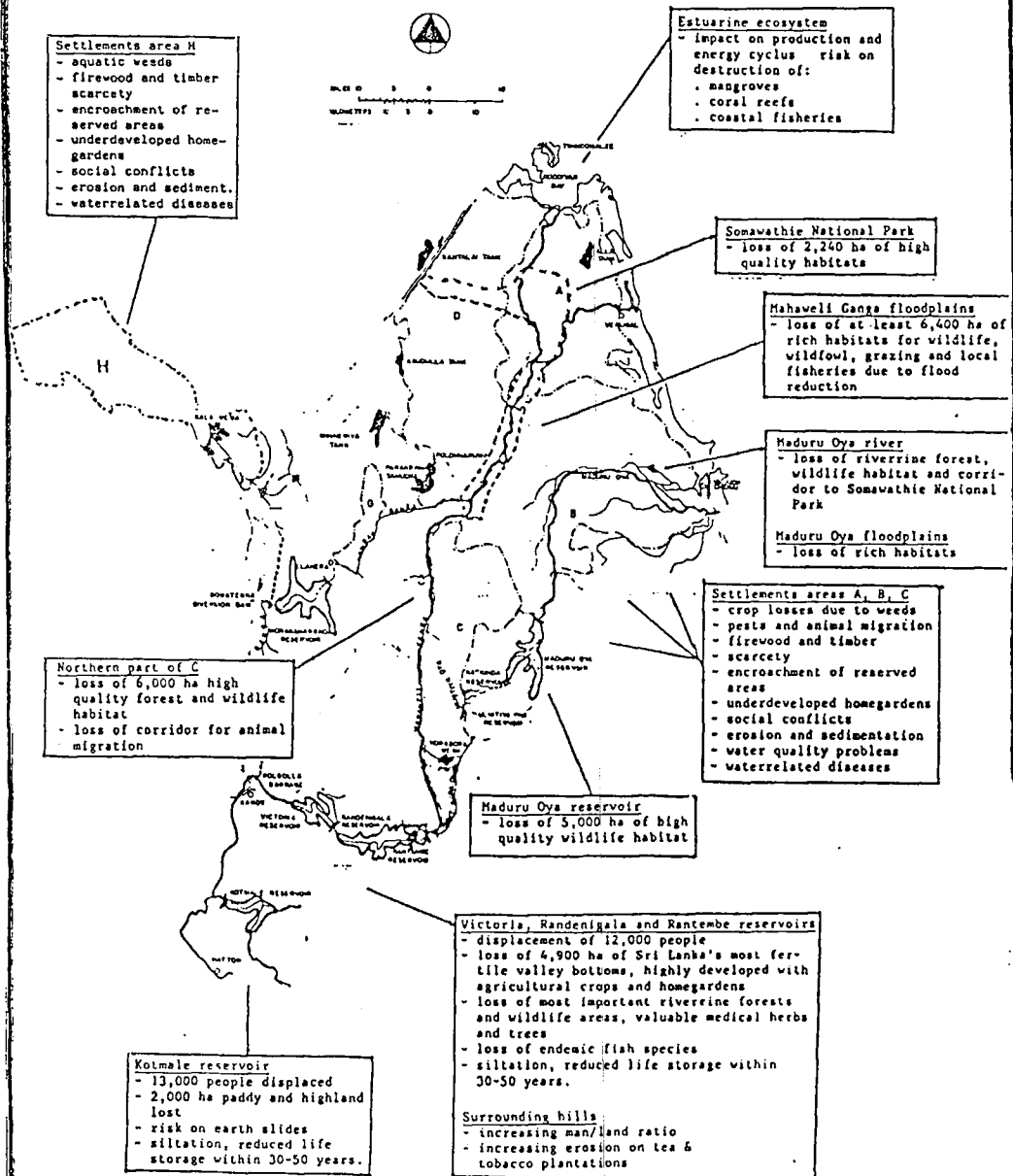
(Extracted from the a bibliographic overview on the Mahaweli prepared by Leelangi Wanasundera, Documentation Unit, People's Bank, Colombo, Sri Lanka).

GOVERNMENT BUDGETARY ALLOCATIONS FOR
MAHAWELI DEVELOPMENT, LAND AND LAND DEVELOPMENT,
AGRICULTURE AND INDUSTRY
1978 - 1985



Source: Estimates of Revenue and Expenditure of the Sri Lanka
Government 1982 Volume I - Annual Report Central Bank

Overview of environmental problems, related to the Accelerated Mahaweli Ganga Project



Layout Plan of a settlement unit



Accelerated Mahaweli Programme - Cost Estimates
(Rs. Million)

	Actual Expenditure up to end 1985	Estimates for 1986 - 1992	Total
Victoria	7,619	994	8,613
Kotmale	8,210	671	8,881
Maduru Oya	2,646	-	2,646
Randenigala	3,962	1,530	5,492
Stage I	514	-	514
Stage II	2,457	7	2,464
System B (LB)	3,652	2,956	6,608
System B (RB)	396	4,278	4,674
System C	2,608	2,300	4,908
System G	195	154	349
Access Roads	176	318	494
Udawalawe	225	605	830
Minipe T.B.C.	1,197	11	1,208
Others	47	-	47
Total	33,904	13,824	47,728

Source: Mahaweli Authority of Sri Lanka.

Mahaweli Authority of Sri Lanka

A.M.P. Currently Estimated Cost to Completion

	Rs.Mn.									
	<u>Upto 1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>	<u>1991</u>	<u>1992</u>	<u>Total</u>
Victoria	7015	604	595	268	85	46	-	-	-	8613
Kotmale	7587	623	521	150	-	-	-	-	-	8881
Naduru Oya	2640	6	-	-	-	-	-	-	-	2646
Randenigala	2420	1542	1061	465	4	-	-	-	-	5492
Stage I	514	-	-	-	-	-	-	-	-	514
Stage II	2362	95	-	7	-	-	-	-	-	2464
System B (LB)	2185	1467	1159	833	457	314	131	62	-	6608
System B (RB)	370	26	16	30	683	1259	1579	569	142	4674
System C	1919	689	849	860	490	101	-	-	-	4908
System G	93	102	101	53	-	-	-	-	-	349
Access Roads	62	114	59	228	31	-	-	-	-	494
Udawalawe	164	61	117	192	171	125	-	-	-	830
Minipe T.B.C.	1173	24	3	12	(4)	-	-	-	-	1208
Others	47	-	-	-	-	-	-	-	-	47
Total	<u>28551</u>	<u>5353</u>	<u>4481</u>	<u>3098</u>	<u>1917</u>	<u>1845</u>	<u>1710</u>	<u>631</u>	<u>142</u>	<u>47728</u>
Maintenance	<u>-</u>	<u>188</u>	<u>322</u>	<u>337</u>	<u>411</u>	<u>563</u>	<u>631</u>	<u>-</u>	<u>-</u>	<u>2452</u>

Source\$ Mahaweli Authority of Sri Lanka, Review of Progress.

Some Basic Features of the Accelerated Mahaweli Programme — Headworks (Targets & Achievement)

	COST (Rs. Million)			TIMING		DAM PARAMETERS Height/ Length (Ft.)		CAPACITY (Acre. Ft.)		POWER GENERATION INSTALLED CAPACITY (M. W.)		IRRIGATION Hectares		SYSTEM		DONOR
	1977	1984	Increase %	Target	Actual Achievement	1977	1984	1977	1984	1977	1984	1977	1984	1977	1984	
VICTORIA	3018	7890	261.4	1984 Dec.	1984 Nov.	400/1663	400/1663	590800	500800	120	210	45000	64544	B.C		UK
MADURUOYA	1758	2631	150.0	1983	1983	130.4/3362	130/3307	378500	393000	4.5	4.5	49500	39979	B		Canada
KOTMALE	3650	8755	240.0	1985 March	1985 Aug.	350/1969	262.4/1969	331000	141000	200	140	Increased Irrigation Water available at Polgolla. (36500)				Sweden
RANDENI-GALA	1043	4450	427.0	1985 Dec.	1985 Dec.*	295/1640	308/1590	648000	697000	75	126	Supplemental Irrigation benefits (30,200)		A,B,C		West Germany

*Work in progress.

Source: Mahaweli Projects and Programme — 1979, 1983, 1984. Victoria and Hydro Electrical Scheme — 1984. Mahaweli Ganga Development Sri Lanka (Summary Report on Project) — 1977.

Accelerated Mahaweli Programme — Targets and Achievements of Downstream Development and Settlement (Hectares)

Target of Accelerated Programme between 1977 — 1983				Achievements as at 31. 05. 1985.		
(1) Systems	(2) Irrigatable Land	(3) Number of families to be settled	(4) Total Area developed with irrigation	(5) 4 as a % of 2	(6) Total number of families settled	(7) 6 as a % of 3
A	36,000		—	—	—	
B	48,000		1,700	3.54	7,515	
C	24,000	140,000	5,658	23.58	9,781	12.96
D	19,000		—	—	—	
E	2,800		450	16.07	854	
Total	129,800	140,000*	7,808*	6.02	18,150	12.96

*Area fully developed upto level of irrigated farming.

Source: Mahaweli Projects and Programme 1979 — 1984 Progress Reports, Mahaweli Development Authority, Department of Census and Statistics Studies.

Size of Mahaweli Investment in the Economy

	1979	1980	1981	1982	1983	1984	1985
1. Total Government Expenditure (Rs.Mn.)	20,339	28,532	29,486	35,287	41,790	51,364	67,103
2. Capital Expenditure (Rs. Mn.)	7,809	12,044	11,765	16,056	16,708	19,521	24,623
3. Expenditure on the AMP (Rs Mn.)	1,603	2,991	3,991	5,469	7,302	7,195	5,541
4. Mahaweli/Capital Expenditure (Ratio)	0.21	0.25	0.34	0.34	0.44	0.37	0.23
5. Mahaweli/Total Expenditure (Ratio)	0.08	0.10	0.14	0.15	0.17	0.14	0.08
6. Capital Expenditure/Total Expenditure (Ratio)	0.38	0.42	0.40	0.46	0.40	0.38	0.37
7. Mahaweli/GDP Ratio	0.01	0.04	0.04	0.06*	0.06*	0.04*	0.03*
8. Capital Expenditure/GDP Ratio	0.15	0.18	0.14	0.16	0.14	0.13	0.15
9. Total Expenditure/GDP Ratio	0.39	0.43	0.35	0.36*	0.34*	0.33*	0.42*
10. Mahaweli/Imports Ratio	0.03	0.08	0.10	0.13	0.15	0.14	0.10
11. Mahaweli/Exports Ratio	0.05	0.15	0.18	0.26	0.28	0.18	0.16

Sources: 1. Central Bank of Sri Lanka Annual Reports 1979-1985
2. Mahaweli Authority of Sri Lanka, Review of Progress.

* Based on Provisional Data.

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