NORTH WEST LAND AND WATER RESOURCES DEVELOPMENT PROJECT

VANATHAVILLU SOCIO-ECONOMIC STUDY

ISHAK LEBBE

AGRARIAN RESEARCH AND TRAINING INSTITUTE

1982

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F O R E W O R D

In its quest for self-sufficiency in food production, Sri Lanka is paying increasingly more attention to the best possible uses of all available water resources. The exploitation of ground water for agricultural production in areas where no other water resources are available, is part of this effort. Consequent to the recommendations made by a British Aid Review Mission in late 1977, the government decided to develop four areas for agricultural development by installing submersible pumps. These areas are Vanathavillu, Adampantalvu, Vellankulam and Mulankavil. Among the investigations suggested was a socio-economic survey.

The Agrarian Research & Training Institute was requested to carry out the socio-economic survey in the Vanathavillu area. This report presents the results of this survey and it discusses the current problems in the Colonisation Scheme and suggests the action that will have to be taken by the authorities concerned to alleviate the problems. It is interesting to note that one important reason, though seems simple, for the poor performance of the allotees is lack of departmental coordination at the grass root level.

Mr. M.U. Ishak Lebbe, Research & Training Officer of this Institute was responsible for carrying our this study and writing the report. In this effort he was assisted by several officers from within and outside the Institute. He also had the necessary cooperation of all the ministries and departments involved. I wish to thank them all. I hope this report will help the policy makers and implementing agencies to formulate their development programmes in a way to help the allotees who have suffered in silence for a long time.

T.B. SUBASINGHE
DIRECTOR

PREFACE

This report is one of a series published under the auspices of the North West Land and Water Resources Development Project ("North West Project") in order to assist rural development in the limestone belt of the North West Dry Zone of Sri Lanka.

The report, which was commissioned by the Water Resources Development Division of the Ministry of Lands & Land Development in conjunction with the Overseas Development Administration of the United Kingdom, has been based on investigations undertaken at Vanathavillu Colonisation Scheme during January - May 1981 by the Agrarian Research and Training Institute.

The author is heavily indebted to the team of investigators - Mr. Ananda Silva, Miss Tilaka Samarakoon and Mr. E.M. Subasinghe - for their conscientious cooperation in the collection and the analysis of data. Mr. Silva also assisted throughout the preparation of the report. Special thanks are due to Dr. Jacob Black-Michaud (Colombo Plan Advisor, Agrarian Research and Training Institute) and Mr. Tom Cusack (U.K. Project Coordinator, Water Resources Development Division of the Ministry of Lands and Land Development) for advice and assistance; Mrs. Yasmin Bawa for her untiring secretarial assistance, through several drafts, and MIss C.M. Jayanetti and Mr. S. Rameswaran, Information & Publication Officer for preparations of the final report.

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SUMMARY

The main focus of the study is on the pump-irrigation project in the Vanathavillu Colonisation Scheme. However, the general socio-economic characteristics relating to the whole colonisation scheme are also discussed in order to throw contextual light on the pump-irrigation project.

The colonisation scheme consists of three categories of allotments - 'middle class', 'lower middle class' and 'peasant' - all intended for dry farming. The performance, measured in terms of the extent and the quality of cultivation, is found to be wanting in all three categories. The reason for poor performance in the 'middle class' and the 'lower middle class' categories appears to be that the allottees lacked the necessary capital, know-how and the motivation to develop agriculture. In the case of the 'peasant' category, poor performance appears to be related to the lack of basic infrastructural facilities and to the absence of proper administrative support and guidance.

These problems were also manifest in the pump-irrigation project. Land in the project is underutilised and the quality of cultivation is poor. As a result, the income derived from these plots is insufficient to sustain the average family. The reasons for unsatisfactory performance are related to uncertainty in the water supply and to the inadequacy of the supportive services, including marketing outlets. These in turn are related to a lack of proper planning and departmental coordination.

To alleviate these problems, it is suggested that the project be placed on a 'special project' basis where the necessary administrative decisions will be made on the spot; proper departmental coordination be effected and all the services required for the successful functioning of the project be made available.

Chapter One

INTRODUCTION

1.1 THE NORTH WEST PROJECT

The North West Project is designed to assist agricultural development based on the exploitation of groundwater in the limestone belt which extends from Puttalam in the North West to Alampil in the North East along a 20-25 Km wide coastal belt (Map 1). The project's program was proposed by a Joint U.K./Sri Lanka Govt. Development Study Mission in a report (Robertson *et.al.* 1978) and is being implemented by the Ministry of Lands & Land Development in association with the Overseas Development Administration of the United Kingdom.

The main basis for the North West Project is that there is a considerable extent of potentially productive land in the project area which is virtually unused and that this area could be developed for agriculture and re-settlement through a sustained and integrated program of investigations and development. The project area, lying in the Dry Zone of Sri Lanka, has a low mean annual rainfall of 900 - 1500 mm and is known for frequent periods of drought; this has discouraged potential settlers and has helped to dissuade those living in the area from engaging in intensive agriculture. This situation could be changed by ensuring a more secure supply of water by means of exploiting the groundwater available in the region. However, there are limitations to the extent of such development in terms of the volume of fresh water available and in terms of agronomic problems associated with water

salinity and soil conditions. Therefore, the Development Study Mission proposed a strategy of gradual development accompanied by careful research.

1.2 THIS STUDY

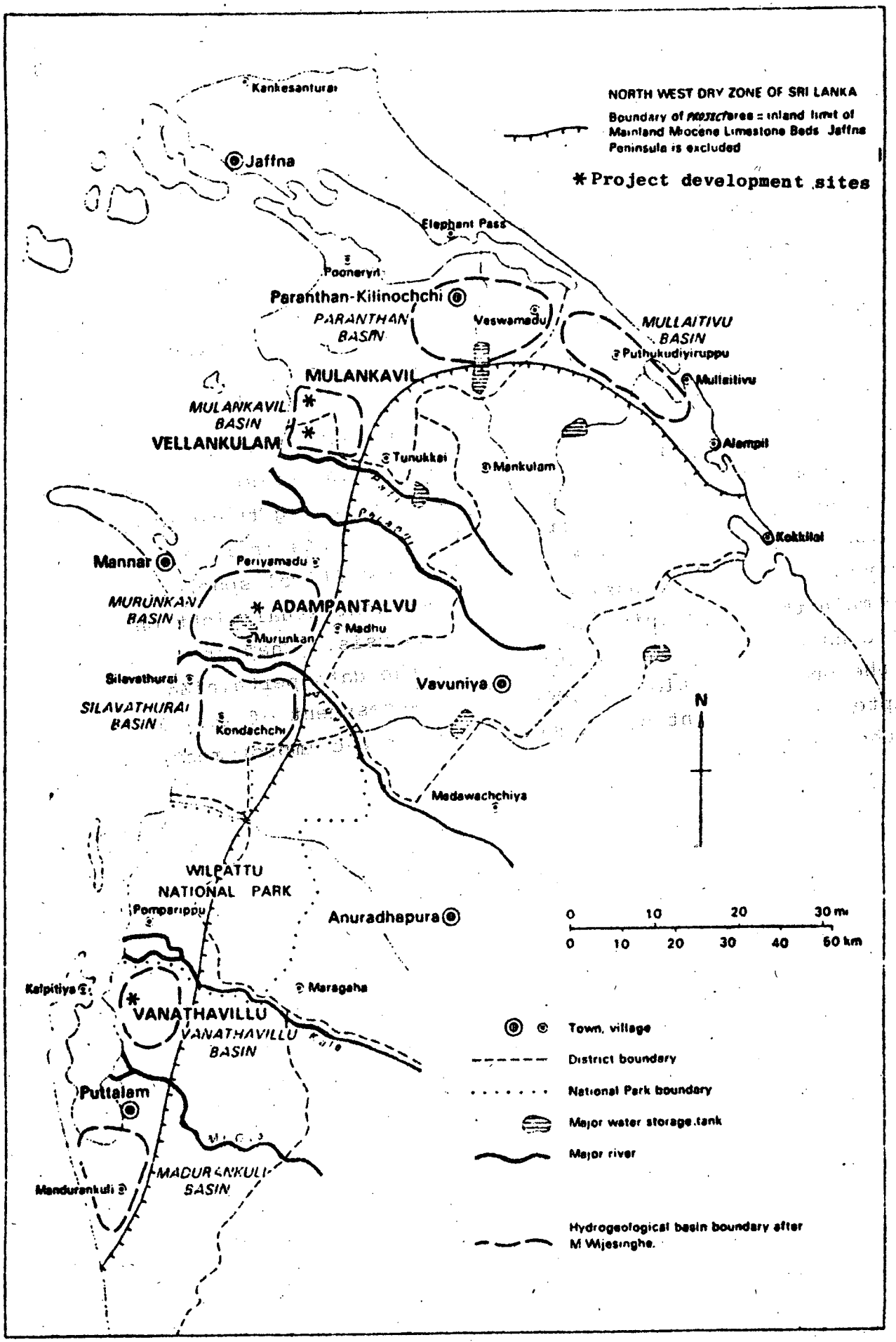
The Mission identified four sites- Vanathavillu Colonisation Scheme, Adampantalvu Youth Scheme, Vellankulam Youth Scheme and Mulankavil Youth Scheme - lying within three major hydrogeological zones namely, Vanathavillu, Murunkan and Mulankavil (Map 1) for immediate agricultural development and for detailed investigation. Among the investigations suggested were a series of socio-economic studies of all four sites. This study is the first of the series and relates to Vanathavillu Colonisation Scheme.

The choice of Vanathavillu as the first site for the socio-economic study was determined by the fact that there was already a pump irrigation project which had been in operation since the late nineteen sixties. In studying Vanathavillu, it was hoped that some insight could be gained into the operation of a pump irrigation project which would help in improving the functioning of the project in Vanathavillu and in implementing similar projects in the rest of the North West Project area.

The field work connected with the socio-economic study was carried out by three investigators and a Research Officer over a period of five months beginning from mid-January 1981. The methods of data collection included participant observation, a sample survey and guided interviews of selected households. The questionnaire, seeking information from households on land and labour use, family and kinship, attitudes and perceptions towards agriculture, was administered to a random sample of 20% which was stratified on the basis of type of allotment. Guided interviews on issues pertaining to crops

and cropping patterns, inputs and returns in the pump irrigation project were conducted on a 20% selected sample.

Although the main focus of the study is on the pump irrigation project, we discuss the colonisation schemes as a whole in the next chapter in some detail, because, firstly, the pump irrigation project is an intrinsic part of the larger colonisation scheme in Vanathavillu. The land for the irrigation project was taken from within the land that had already been alienated in the colony and the people for the project were chosen mostly from among the existing colonists. In the project's current functioning there is much interaction and overlap with the colonists in regard to land and labour use and in the socio-political spheres. Secondly, such a discussion throws much contextual light on the main themes emerging out of the analysis. Chapter 3 contains the main body of analysis of the data pertaining to the pump irrigation project and an assessment of it. In Chapter 4 we present some suggestions for the improvement of the project.



MAP 1 – NORTH WEST PROJECT AREA

Chapter 2

VANATHAVILLU COLONISATION SCHEME

2.1 THE LAND

Prior to the establishment of the colony, the Vanathavillu area was largely in jungle. The Puttalam-Mannar footpath crossed the area but there were hardly any inhabitants in the vicinity. Since the establishment of the colony in 1958 and its subsequent expansions, much of the area has been cleared. Vanathavillu Colonisation Scheme today includes the contiguous villages of Kelethhodai, Vanathavillu, Bandaranayakapura, Vijeyapura, Morapothawa, Periyanagavillu, Mahilumvillu and Veerakkudichcholai; and extends to about 48 sq. km. or 5000 ha. (Map 2).

The Colonisation Scheme was originally conceived as a 'Middle Class' and 'Lower Middle Class' scheme provided for under the Land Development Ordinance of 1935. The idea for the establishment of the colony was mooted in the mid 1950s and applications were received from candidates from all over the island. Subsequent to Blocking Out Surveys, the alienation of land to selected czndidates began in 1958. The initial alienation consisted of 63 allotments of 10.13 ha. (25 acres) each to 'Middle Class' persons and 101 allotments of 4.05 ha. (10 acres) each to 'Lower Middle Class' persons. There were subsequent expansions in the 'Middle Class' category beginning from 1963.

Also in 1963, a scheme of land alienation to non-middle class persons was started. The latter allotments were in

2.03 ha. (5 acre) lots intended mainly for those persons who had come to reside in the area as labourers on the 'Middle Class' allotments. This category was later expanded under the Village Expansion Scheme to accommodate landless families from other areas as well. It was from the 2.03 ha. allotments, or what is known as the 'peasant' allotments, that land for the pump irrigation project was taken.

The land under pump irrigation is in four groups of allotments; each group obtaining irrigation water from a single pump fitted to its own tube well. Three of these groups of allotments are in 0.41 ha. (1 acre) lots and the other is in 0.03 ha. (3/4 acre) lots. The total number of allotments under the pump irrigation project is 160.

For the purpose of this report the 'Scheme' means the whole Colonisation Scheme which includes all the different catgories of allotments described above. The 'project' means the pump irrigation project which includes four groups of allotments each under irrigation from a single pump installed on a deep well; these pump wells have been designated as P9, W4, W5 & W6.

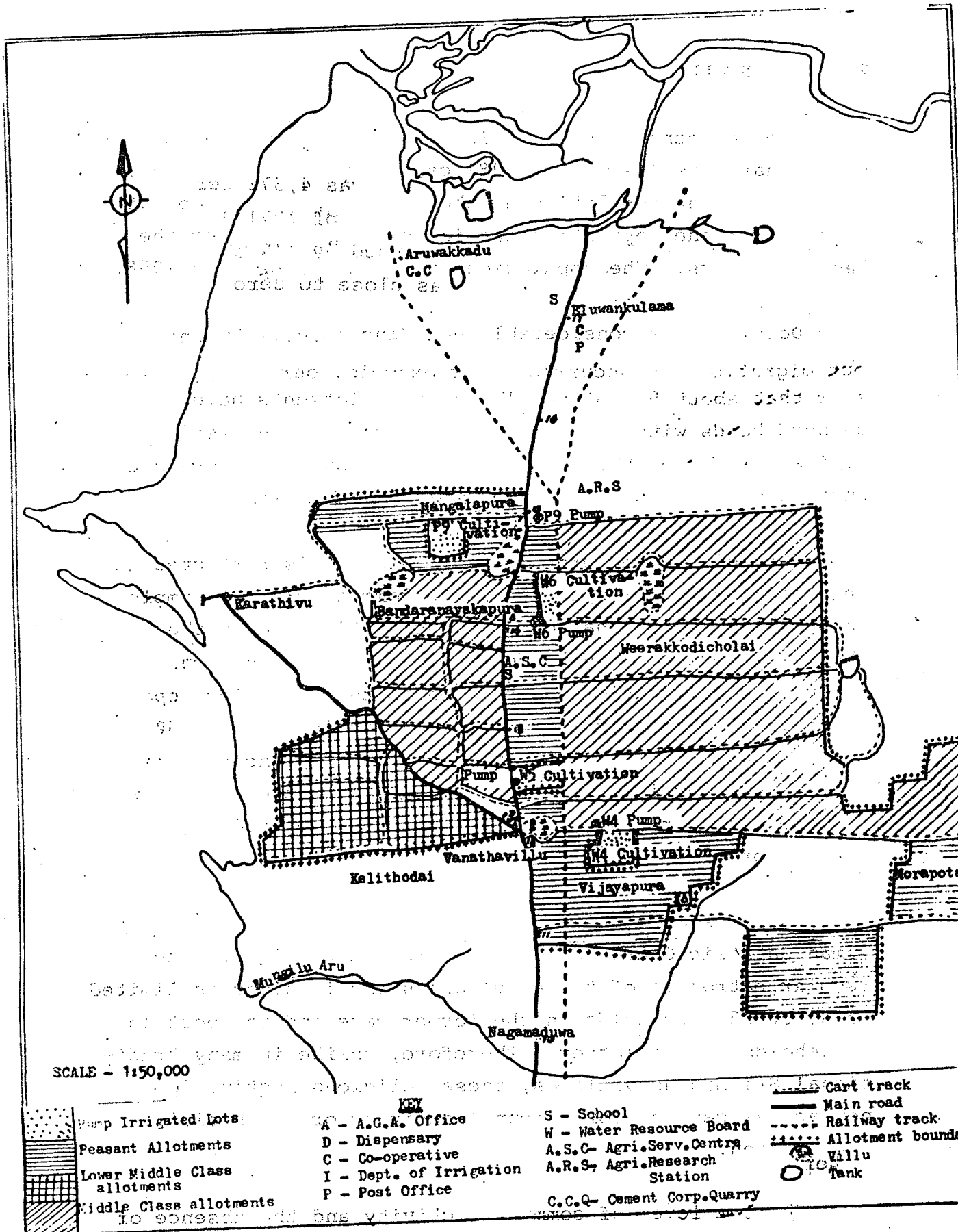
The extent of land and the distribution of allotments in all the above categories as shown in the Kachcheri files at the time of our investigations are as follows :

TABLE 2.1

EXTENT AND THE NUMBER OF ALLOTMENTS IN THE VANATHAVILLU COLONISATION SCHEME

ALLOTMENT CATEGORY	NO. OF LOTS	TOTAL EXTENT (HA)
'Middle Class' (10.13 ha. lots)	281	2886
'Lower Middle Class' (4.05 ha. lots)	101	409
'Peasant'/Village Expansion (2.03 ha. lots)	619	1253
Pump Irrigated (0.14, 0.30 ha. acre lots)	160	60
T O T A L	1161	4608

Source : Kachcheri Lands Files



MAP-2 VANATHAVILLU COLONIZATION SCHEME

2.2 THE PEOPLE

The resident population in the scheme according to the preliminary results of the 1981 census was 4,372 persons. As the resident population at the Census of 1971 stood at only 2,764; the population has increased by 64% over the last ten years. The population was close to zero in 1958.

Despite this considerable nett increase, substantial out migration has occurred. For example, our survey data show that about 55% of the 'peasant' allotments have changed hands within the last ten years and conversely, a similar number of the present residents on these lots are those who migrated into the area within the last ten years.

The volatile nature of the population is reflected in the socio-political spheres of the community; for example in the lack of communal or group activities and in the absence of established leadership. The only functioning community organisation in the area is the Rural Development Society which has a fairly large membership of about 500. However, about the only function it performs and perhaps the sole reason for its existence, is the recruitment of casual labourers to work in the quarry which is operated by the Cement Corporation.

There is a Buddhist Temple with a resident monk and a Roman Catholic Church also with a resident priest. The regular patronage of these religious institutions is limited to about 25 households in the former case and to about 15 households in the latter. Therefore, unlike in many traditional Sri Lankan villages, these religious institutions do not act as centres for communal activity or for social interaction.

The low level of communal activity and the absence of established leadership is to be expected in any new settlement scheme due to the diverse regional background of the

newcomers and hence the strangeness or anonymity and detachment or even mistrust towards one another. Although Vanathavillu is not exactly a new scheme, for it has been in existence for two decades, its high rate of turnover (in-migration and out-migration) has kept introducting a relatively large number of newcomers into the population. The high rate of out-migration, it would seem reasonable to assume, is related to the scope of earning a livelihood in the area and to the adequacy of the basic infrastructural facilities for the functioning of the community. Therefore, we discuss public facilities and sources of income in the next two sections.

2.3 FACILITIES

In terms of public facilities, Vanathavillu could boast a list which is equal to that of most other such communities in the island - a medical despensary, two schools, a shopping centre, public wells for drinking water, roads with public and private transport, a post-office, an Assistant Government Agent and a Grama Sevaka. However, the adequacy of the facilities in Vanathavillu and the efficiency with which they function would appear to rate far below the average found in most parts of the country.

The dispensary at the Vanathavillu township staffed by an apothecary and a dispenser treats only out-patients; thus has to cope with patients from the whole scheme plus those from the surrounding villages. Its location is such that, at times, patients from the interior have to walk several kms. to get to the dispensary. Also, there is no public midwife for the region. The lack of maternity facilities leads to incidents such as a fatal delivery on the road-side by a mother who had walked several kms. and was waiting for the bus to get to the city hospital.

The two schools are situated at central points and consists of permanent structures. However, both the schools are short of furniture and, as a result, half the students have to sit on the floor all the time. Also, both schools are understaffed and the majority of the present staff have their minds set on transfers out of these schools. Although both schools had grades up to G.C.E. (O/L) there were very few students in the grades above 6, which would indicate a high drop out rate.

Roads and transport facilities available to the colony are rather limited. There is a macadamised road and a public transport service connecting the colony with Puttalam. But the transport service is far from reliable. The roads in the interior are muddy during the rainy season, sandy during the dry season and hence pose difficulty for transport.

The public administration facilities are in a most appalling state. The Assistant Government Agent's office has been under acting Assistant Government Agents for the last five years. The present acting Assistant Government Agent visits the office from the Puttalam Kachcheri only on Tuesdays for a couple of hours in the morning. These are about the only effective working hours of the week also for rest of the staff - a staff assistant, four clerks and an office assistant. The Grama Sevaka of the area is also absent from his office more often than not. As a result the colonists often have to go to the Kachcheri in the city for most of their dealings with the administration.

2.4 SOURCES OF INCOME

Generally the most important source of income in any agricultural setting is land. This is more so in the context of a colonisation scheme where almost all the households have a plot of their own. However, in Vanathavillu the

scope of land as a source of income is rather limited. This is because Vanathavillu, unlike most other Colonisation Schemes of the country, is not based on irrigated paddy cultivation. Vanathavillu originated as a 'Middle Class' and 'lower middle class' scheme for the purpose of dry farming. But dry farming in an area that lies in one of the most arid regions of the country which is beset with problems of unpredictably long periods of drought and poor soil fertility is not an easy task. Drought periods so severe that it is difficult for most colonists to obtain water even for domestic purposes, let alone for any cultivation, are not uncommon in the history of Vanathavillu.

To offset the uncertainty in income from the farm a majority of the peasant colonists engage in alternative employment. There are several sources in the area that provide wage earning opportunities. These include the 'Middle Class' allotments that provide seasonal employment, the Agricultural Research Station of the Department of Agriculture, the quarry of the Cement Corporation and a large private estate owned by an entrepreneur from the south. The Agricultural Research Station and the quarry each provide steady employment for about 100 casual labourers. In addition, a private estate - with bananas, grapes and coconut on about 70 ha. provides year-round employment for about 35 persons. Other income earning opportunities such as running a boutique, hunting, vegetable and fish vending are also exploited.

Table 2.2 shows the employment pattern among the 'peasant' sample. We present secondary occupation in relation to primary occupation in order to illustrate the importance of the former.

TABLE 2.2

PRIMARY AND SECONDARY OCCUPATION OF THE EMPLOYABLE POPULATION IN THE "PEASANT" SAMPLE*

PRIMARY OCCUPATION	SECONDARY OCCUPATION: NONE		AGRI. OPERATOR		HOUSEWIFE		STUDENT		HOUSEHOLD & FARM ASSISTANT		AGRI. LABOURER		NON-AGRIC. LABOURER		WHITE COLLAR WORKER		CRAFTS		BUSINESS		TOTAL NO.		TOTAL %	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Agric. Operator	47	1	-	-	-	10	-	-	-	1	16	-	1	-	-	-	2	-	4	-	70	12	27.8	5.1
Housewife	-	48	-	6	-	-	-	-	-	76	-	10	-	-	-	-	-	-	-	-	-	140	-	59.6
Student	15	10	-	-	-	-	-	-	4	4	-	-	-	-	-	-	-	-	-	-	19	14	7.5	5.9
Household & farm assistant	28	40	-		-	1	-	-	-	-	2	-	-	-	-	-	-	-	-	-	30	41	11.9	17.5
Agric. labourer	48	4	23	3	-	4	-	-	5	4	-	-	-	-	-	-	-	-	-	-	76	15	30.2	6.4
Non-agric-labourer	9	4	10	-	-	-	-	-	4	1	1	-	-	-	-	-	-	-	-	-	24	5	9.5	2.1
White collar worker	8	5	2	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	12	5	4.7	2.1
Crafts	1	-	3	-	-	-	-	-	1	-	1	-	-	-	-	-	-	-	-	-	6	-	2.4	-
Business	4	-	5						1												10	-	4.0	-
Unemployed	5	3		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	3	2.0	1.3
TOTAL:	165	115	43	9	-	15	-	-	17	86	20	10	1	-	-	-	2	-	4	-	252	235	100	100

* 'Employable' is defined as those aged 15 and above excluding the disabled; 'Peasant' refers to those households established in 2.03 ha. (5 acre) lots.

SOURCE : Survey data.

It will be seen that about a third of the males and about half the females have secondary occupation. In a colonisation scheme, where most of the households have their own plot of land one would normally expect a large percentage of the employable population to be engaged primarily in the cultivation of their own allotment. But this apparently is not the case in Vanathavillu. As can be seen from the table, the number whose primary occupation is off-farm work as wage labourers in the agricultural and the non-agricultural sectors is greater than the number whose primary occupation is working on their own allotment (39.7% as against 27.8% among the males).

Inspite of the many complementary income earning activities, the majority of the residents in Vanathavillu must be classed as poor by any standard. According to the Assistant Government Agent office records, about 82% of the households of the colony are eligible for food coupons and the kerosene subsidy by being in the income group of Rs. 300/= or less per month. Housing is poor. According to our sample survey, 86% of the houses are of wattle and daub walls and cadjan roofs with an average of two rooms. The rest, with the exception of about 4% of the brickwall and tiled roof houses, are all-cadjan temporary affairs. Eighty percent of the houses do not have a toilet and 70% of the houses do not have their own well for drinking water either.

The foregoing would suggest that the colonisation scheme has not been able to provide the majority of the colonist with a satisfactory standard of living. This brings us to the question of the performance of the scheme in general.

2.5 PERFORMANCE OF THE COLONISATION SCHEME

Though the expectations from, and the rationale behind the different categories of allotments are different, one objective that was common to all of them was that the land alloted was to be brought under specified crops. The specified crops, except in the case of the pump irrigated land (discussed in the next chapter), were coconut and cashew. In the case of the 'peasant' allotments it was expected that, in addition to these two major crops, the colonists would also have some homegarden crops.

Taking the extent under cultivation as a measure of performance, the scheme as a whole appears to have performed unsatisfactorily (Table 2.3). It will be seen from the table that in the 'middle class' category, about 30% of the allotments have not been cultivated at all and in a further 16% of allotments only less than 25% of the total extent has been cultivated. The situation is only slightly different in the 'lower middle class' category where 50% of the allotments have not been cultivated. Performance is a little better in the 'peasant' category where 24% of the allotments have been left fallow.

TABLE 2.3

THE EXTENT OF CULTIVATION BY ALLOTMENT CATEGORY IN THE VANATHAVILLU COLONISATION SCHEME

ALLOTMENT CATEGORY	EXTENT CULTIVATED AS A % OF TOTAL EXTENT OF ALLOTMENT				
	0	1-25	26-50	51-75	76-100
Middle Class	29.8	15.8	7.0	15.8	31.6
Lower Middle Class	50.0	-	5.0	5.0	40.0
Peasant	23.6	11.4	15.4	14.5	30.1
T O T A L	28.0	11.5	12.0	17.0	31.5

Source : Based on our sample survey

Among the allotments that have been cultivated partly or wholly, the majority are poorly maintained. We classified the sample allotments into three levels of maintenance as 'good', 'average' and 'poor' (Table 2.4). On this classification, a large number (45%) of allotments fall into the least maintained group. Only 21% of the allotments are well maintained. The rest fall in the middle group of average maintenance.

TABLE 2.4

THE STATE OF MAINTENANCE OF CULTIVATED ALLOTMENTS BY ALLOTMENT CATEGORY IN THE VANATHAVILLU COLONISATION SCHEME*

LEVEL OF MAINTENANCE	ALLOTMENT CATEGORY							
	Peasant		Lower Middle Class		Middle Class		Total	
	No.	%	No.	%	No.	%	No.	%
Good	16	17	2	20	12	30	30	21
Average	33	35	4	40	12	30	49	34
Poor	45	48	4	40	16	40	65	45
T O T A L	94	100	10	100	40	100	144	100

* Source : The criteria for the categorisation were our observations and records on whether the cultivations have been looked after by using such inputs as water, fertilizer and other agrochemicals, and whether the plots have been kept up by regular weeding and cleaning. However, as we do not have precise measurements on these criteria the classification should be considered a subjective one.

There are several possible reasons for such poor maintenance of cultivation and underutilisation of land. Some of them are obvious such as poor soil fertility and drought; for example, a prolonged drought during the first

half of the 1970s caused the destruction of a large number of coconut palms in many hitherto well maintained estates. Some other factors are less obvious; these derive primarily from inadequate planning and administrative guidance. Particularly in the case of the 'peasant' scheme, one wonders whether there was any thought given by the planners as to the difficulties that these landless poor 'peasants' brought from distant districts would have in establishing agricultural units. They lacked many of the social amenities and the financial assistance normally given to colonists in other schemes especially in regard to housing and subsidies for land clearing and the initial cultivation.

Whereas the foregoing would more closely apply to the 'peasant' colonists, in the case of the 'middle class' colonists, part of the explanation for poor performance appears to be in the concept itself.

The rationale behind the concept of a 'middle class' scheme as proposed by the Land Development Ordinance of 1935 and that of a 'lower middle class' scheme as put forward by the Land Commission of 1957 is that if persons with sufficiently large amounts of capital are given fairly large extents of land they would develop the land so as to ensure higher productivity consistent with economies of scale, as compared to smaller (or 'peasant') units. In juxtaposing the 'middle class' with the 'peasant' it was also expected that the former would provide community leadership and act as catalysts in both the development of agriculture and the promotion of social welfare.[1]

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[1] Government of Ceylon, Land Development Ordinance, 1935; Interim Report of the Land Commission, sessional paper XV, 1957, pp 159 - 60.

Theoretically all this was possible, provided that the so called 'middle class' really had sufficient capital to develop the land allotted to them and that they had the intention and the necessary know-how to do so. It was precisely these three conditions-namely, capital, the intention and know-how, that were absent to a great extent among the so called 'middle class' colonists of Vanathavillu.

A Middle Class person, as defined by the Land Development Ordinance, is anyone with an annual income upper limit of Rs. 12,000 and a 'lower middle class' person as defined by the Land Commission is a person with an annual income not exceeding Rs. 4,800. There is no lower income limit or any other condition specified in either case. In operationalising the above, the working definition used in Vanathavillu, according to the Kachcheri officials was that simply a minimum bank balance of Rs. 6,000 for a 'middle class' person and Rs. 3,000 for a 'lower middle class' person at the time of selection of allottees. The result was that a large number of people who qualified either as 'Middle Class' or as 'lower middle class' by a temporary bank balance did not in reality have sufficient capital to develop their alloted land and, much less, the experience or motivation to go into agriculture.

If they had neither the capital nor the intention to go into cultivation, what then was the motive for these people in obtaining land in Vanathavillu? Our information is that the prime attraction at the time was the timber in the virgin forest. Our calculations suggest that a hectare of forest could have yielded anything from Rs. 2,500 to 10,000 worth of timber. The prestige traditionally attached to land ownership and the potential sale value of land may have been added incentives. Of course any of these need not preclude a motive of eventual development of the land and therefore the question remains as to why they never did so. The answer is to be sought in the particular socio-economic backgrounds of the allottees.

A large number of people (49.4%) who obtained land in the middle class and lower middle class categories are from Colombo, most of them in government service (Table 2.5). One would normally expect a majority of people obtaining land in Vanathavillu to be from districts closer to Puttalam but as can be seen from the table this is not the case.

TABLE 2.5

PRIMARY OCCUPATION AND DISTRICT OF RESIDENCE OF MIDDLE AND LOWER MIDDLE CLASS ALLOTTEES

DISTRICT OF RESIDENCE OF ALLOTTEE	OCCUPATION										TOTAL	
	Govt. Civil Service		Business		Propertied landowner		Professional		Not known			
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Colombo	19	24.7	11	14.3	1	1.3	2	2.6	5	6.5	38	49.4
Puttalam	9	11.7	9	11.7	4	5.2	1	1.3	5	6.5	28	36.4
Kurunegala	2	2.6	2	2.6	-	-	-	-	-	-	4	5.2
Kalutara	1	1.3	-	-	-	-	-	-	1	1.3	2	2.6
Kandy	-	-	-	-	-	-	1	1.3	-	-	1	1.3
Galle	1	1.3	-	-	-	-	-	-	-	-	1	1.3
A'pura	1	1.3	-	-	-	-	-	-	-	-	1	2.6
Jaffna	2	2.6	-	-	-	-	-	-	-	-	2	2.6
TOTAL	35	45.5	22	28.6	5	6.5	4	5.2	11	14.3	77	100.0

Source : Survey data

It appears from our data that those allottees who are resident in distant districts and are in government service have fared poorly in their cultivation compared to those who reside closer to the colonisation scheme and are engaged in business. For example, out of the 27 allotments in our

sample of middle class and lower middle class allotments that have never been cultivated, a large number belong to those resident in Colombo and are in government service (Appendix Tables 5 & 6). Further as is evident from Table 2.6, the majority of the allotments whose level of maintenance is categorized as 'poor' belong to those in government service. Conversely, a majority of those allotments whose level of maintenance is categorized as 'good' belong to those in business.

Table 2.6

STATE OF MAINTENANCE OF MIDDLE CLASS AND LOWER MIDDLE CLASS ALLOTMENTS CLASSIFIED BY PRIMARY OCCUPATION OF ALLOTTEES

PRIMARY OCCUPATION OF ALLOTTEE	LEVEL OF MAINTENANCE OF ALLOTMENT						TOTAL	
	Good		Average		Poor			
	No.	%	No.	%	No.	%	No.	%
Govt. Service	3	6.0	7	14.0	7	14.0	17	34.0
Business	8	16.0	5	10.0	5	10.0	18	36.0
Propertied landowner	2	4.0	1	2.0	1	2.0	4	8.0
Professional	1	2.0	-		-		1	2.0
Not known	-		3	6.0	7	14.0	10	20.0
TOTAL	14	28.0	16	32.0	20	40.0	50	100.0

Source : Survey data

Chapter 3

THE PUMP IRRIGATION PROJECT

3.1 HISTORY

The most striking aspect of the history of ground water development in Vanathavillu is the absence of a plan. Not that there was no plan at all, but rather there were too many. The various plans have been subject to vicissitudes of political parties, interest groups and administrative personal in such a way that the final outcome does not to conform to any single plan. As a result the confusion surrounding the history of the project is so confounding that it is difficult to say much with any certainty. What emerges when the bits and pieces of our information are put together is the following.

At the time of establishment of the Colonisation Scheme there was no plan for developing groundwater. The subsequent quest in the early 1960s for the exploitation of groundwater was a direct result of representations made by some middle class allottees to the then Minister of Lands, on account of difficulties experienced by them in obtaining water for drinking and cultivation purposes. Upon a subsequent request by the Minister, the Department of Irrigation undertook a program of geological investigations, including the test drilling of deep wells. The investigations reveated result that there was a large basin of fresh grounowater in the region beneath an area of about 5000 ha. of cultivable soil. However, no development work was done until after the mid

sixties, presumably for want of funds and because a project to develop groundwater for agriculture was not feasible under the prevailing economic circumstances. It was in the latter half of the sixties that the necessary funds became available and certain changes in the economic circumstances of the country increased the viability of such a project.

The changed economic circumstances were that the incumbent government, faced with a severe shortage of foreign exchange, was persuing a policy of import substitution in subsidiary food crops - particularly chillies, onions and potatoes. Since it was found that Vanathavillu was suitable for the cultivation of these crops provided that there was irrigation, it appeared feasible to start a project to exploit the groundwater by means of tubewells to provide irrigation for the cultivation of these subsidiary food crops. Funds for such a project came in the form of financial and technical assistance from the Israeli Government.

The initial plan was to develop 1620 ha. (4,000 acres) distributed among 2,000 families at the rate of 0.81 (2 acres) each. But this plan was never put into effect apparently due to pressure from the middle class allottees. However, a project to provide irrigation for the middle class allotments was soon begun. The latter project envisaged the provision of irrigation by means of underground pipes to each of the middle class allotments in those areas where there was fresh underground water. The amount of water used by each allottee was to be measured by a guage at each allotment and a levy was to be charged on the basis of the amount consumed. The test drillings of the early sixties had continued in the meantime and out of the 29 wells that had been drilled so far 12 were found to be suitable for pump installations for cultivation purposes. It was decided to install pumps for these wells and provide irrigation for the middle class allotments. As an initial

step, tubewells designated W2 and W7 were installed with pumps and the laying of conveyance pipes began.

At this stage, work was brought to a standstill by the coming into power of a new government consequent to the General Election of 1970 and the discontinuation of Israeli assistance owing to the latters war efforts with the Arabs. The project could have probably continued, despite the termination of Israeli assistance, if the new government had so desired. But the pressures brought on by interest groups and the ideological leanings of the new government appear to have been such that, irrespective of the economic implications, the continuation of a capital intensive project that would primarily benefit a handful of 'middle class' persons was no longer possible. The result was that the project was abandoned, the conveyance piping dismantled, and a project to utilise the groundwater and develop agriculture on a more equitable basis was launched.

The new project envisaged the cultivation of subsidiary food crops by 'peasant' farmers selected from within the colony and by landless people brought from outside. As a first stage, tubewell W4 was installed with a pump and some peasant allotments in the vicinity were reallocated to 15 farmers. The farmers selected from Vijayapura, the adjoining section of the colony were given 0.41 ha. (one acre) each, with specifications that 0.30 ha. (¾ acre) would be cultivated with chillies and the remainder with onions. Watering the plants was to be done manually by means of pots and containers with water carried from the four cement tanks that were situated in each plot. Each cement tank had a capacity of 1136 - 1364 litres (250 - 300 gallons); water was pumped into these tanks every day for 3 hours in the morning. The selected farmers were also provided with several inputs such as seeds, fertiliser and agro-chemicals, free of charge. Probably due to such free supplies and the encouragement provided by the then District Land Officer,

who was in charge of the project, the first cultivation (*Maha* 1970/71) turned out to be a success. The project was subsequently expanded by taking in 5 more farmers for the next season. In the meantime, tube-well W5 was also installed with a pump and cultivation begun with 10 farmers selected from the area.

In 1972, two more cultivations were started under tube-wells p9 and W6. These were to be administered by the newly-constituted Divisional Development Council as a separate proejct. The plan was to bring about 75 ha. under chillies with land allocations and water distribution as in the existing tubewell cultivations. But this latter project never got into proper functioning.

Those cultivations administered by the Land Commssioner's Dept., (W4 and W5) did not function properly for very long either. The problems confronting all these cultivations were connected mainly with administration. Firstly, in the selection of allottees, there has never been any clear cut criteria as to whom to select. As a result, those who got selected were a mixed bag of people with different backgrounds and different interests. Some of those who came into these lands came in only because they wanted a place to live while employed in government and other jobs. Some others were only interested in obtaining the financial and otherbenefits provided by the project. It was only a few that were really interested in cultivation and therefore it is no wonder that the cultivations were a failure. By the mid 1970s, most of the allotments under all four tubewells had been abandoned; only about 7 or 8 farmers remained as cultivators in each of the cultivations.

In 1976 there was a revival of cultivation under tube-well P9. This was mainly due to the arrival of a new Assistant Government Agent, who was interested in promoting cultivation under the DDC projects on a cooperative farm basis. Upon AGA's initiative, new farmers - generally

unemployed youth of the area who were interested in cultivation - were selected to fill the vacancies created by those farmers who had abandoned their plots. The new group was formed into a cooperative through which bank loans and other services could be obtained from different departments. For the first cultivation season, a bank loan of Rs. 40,000 was obtained to meet the cultivation and living cost of the members. A 2-wheeled tractor and a sprayer were also obtained for the co-operative. The irrigation infrastructure, including the pump that was in a state of disrepair were brought up to date.

The first season's cultivation was a great success. On chillies alone the cooperative made a profit of Rs. 250,000, giving each farmer a share of about Rs. 6,000. The success of this season was due to several reasons; the most important of which being the strong leadership and the coordination provided by the AGA. The AGA was able to obtain for the farmers all the requirements connected with the cultivation as and when they were needed. This was possible because the AGA took a personal interest in making this enterprise a success and because he had a close relationship with other officials connected with the project. Particularly important was his ability to ensure a regular supply of water by keeping the pump in good order and regulating the distribution of water. Also important was the fact that the farmers who were selected for the cooperative were young people who were interested in cultivation and were free of other involvements in terms of employment.

Unfortunately, the example set by this cooperative farm project was a short lived one. The AGA concerned was soon transferred out of Vanathavillu and the functioning of the farm fell back to the old state of disorder.

In the latter part of the 1970s there have been several further changes in all four tube well cultivations. Several of the original allottees, particularly those originating from outside Vanathavillu, moved out of their plots and more Vanathavillu residents moved in to fill the vacancies so created.

At the time of our investigations the situation with regard to the distribution and the extent of allotments under each of the tube wells is shown in Table 3.1.

TABLE 3.1

THE DISTRIBUTION OF ALLOTMENTS IN THE PUMP IRRIGATION PROJECT, MAHA 1980/81

TUBE WELL DESIGNATION	NO. OF ALLOTMENTS	OPERATIONAL EXTENT (HA.)
P 9	46	14.18
W 4	42	17.01
W 5	41	16.61
W 6	31	12.15
TOTAL	160	59.95

Source : Survey Data

There are about 59.95 hectares under irrigation from the 4 tube wells distributed among 160 allotments. The extent of each allotment is 0.41 hectares (one acre) with the exception of P9 where the allotment size is 0.30 hectare (3/4 acre).

Most of the allotees in the pump-irrigation project were those who had come to Vanathavillu to work on some other allotment under the peasant scheme or the middle class scheme. However, the majority of them lived on their pump-irrigated allotment and hence paid more attention to its

cultivation than to that of their other plot. Table 3.2 shows the residential location of all the allottees and the number of allottees who retained a peasant allotment in addition to the pump-irrigated one.

TABLE 3.2

RESIDENCE PATTERN AND OWNERSHIP OF 'PEASANT' ALLOTMENTS AMONG PUMP IRRIGATION ALLOTTEES

TUBE WELL	NO. OF ALLOTTEES	NO. OF ALLOTTEES WHO ALSO HAD A PEASANT ALLOTMENT	PLACE OF RESIDENCE	
			TUBE-WELL	PEASANT ALLOTMENT
P 9	46	9	39	7
W 4	42	30	38	4
W 5	41	20	25	16
W 6	31	14	27	4
TOTAL	160	73	129	31

Source : Survey data

3.2 CROPS AND CROPPING PATTERN

The initial impetus for the development of the pump irrigation project, as has already been mentioned, came from the need to cultivate import substitutive food crops- particularly chillies, onions and potatoes. In the early stages, the regulations were enforced so that the crops grown on these farms were limited to those specified by the authorities concerned. However, in the longer term these specifications appear to have been relaxed and the farmers have practised their own combination of crops and cropping patterns to suit their requirements and convenience. The general pattern at the time of our investigations was that

each plot had about 0.10 hectare under plantains and the remaining area was cultivated with a range of other crops. The latter can be categorised into 3 groups - pulses, vegetables and cash crops - on the basis of a distinguishable pattern in the process of their production and distribution discussed below.

Plantains were the most popular crop among the farmers for the simple reason that they yielded the most benefit for the least effort. They stay on the plot year-round yielding a regular income, often acting as a sort of buffer to fall back on in times of emergency. Unlike most other crops on the plot, they do not perish under minor drought conditions or a failure in water supply. Also, they are amenable to a wide margin of variability in other inputs. The better farmers could profitably interplant plantains with sweet-potatoes that enhanced the utility of the land and provided a useful supplement to the main diet of the farmers.

Cash crops (chillies, onions and potatoes) on the other hand require more labour than most others. Also, inputs such as water, fertilizer and pesticides and the proper timing of these are essential to obtain any significant yield. In other words there is a higher degree of risk involved in the cultivation of these crops. These cash crops aimed primarily for the external market were also beset with the problem of inadequacies in the market. As a result, a bumper harvest did not necessarily bring a bumper income. Inspite of these risks it was the cash crops that yielded the best income for a specified extent of land. Therefore those farmers who are keen on agriculture and who could afford the requirements, opted for their maximum possible under these crops. Onions and potatoes were cultivated both during *maha* (Sept.-Nov.) and during *yala* (March-May). Chillies planted in *maha* stayed through *yala*.

In our sample of pump-irrigated lots cash crops were cultivated in 2.88 hecatres out of a total of 10.84 hectares under cultivation during *maha* 1980/81 (Table 3.3).

Vegetables (long beans, brinjals, tomatoes, ladies fingers, winged beans, snake gourd, bitter gourd, capsicum) and pulses (cowpea, green gram and black gram) are somewhere in the middle in terms of effort required for cultivation and in terms of the returns they yielded. Most farmers had a few vegetable crops around their homesteads for domestic consumption purposes but there were also a few farmers who cultivated vegetables for commercial purposes. In our sample, 1.07 hectares out of the total of 10.84 hectares were under vegetables. Pulses were quite popular among the farmers because the returns obtained from them in relation to the costs were high. In the sample, about 3.18 hectares were under pulses. Most of the farmers cultivated pulses during the *maha* season but some farmers also cultivated them during *yala*. Vegetables for commercial purposes were mainly cultivated during the *maha* , but some vegetables were retained throughout the year on the home consumption plots.

TABLE 3.3

CROPS AND EXTENT CULTIVATED DURING MAHA 1980-81
IN THE SAMPLE PUMP-IRRIGATED LOTS

TUBE-WELL DESIGNATION	EXTENT OF ALLOTMENTS	EXTENT CULTIVATED (IN HECTARE)				
		TOTAL	PLANTAINS	PULSES	VEGETABLES	CASH CROPS
P 9	2.84	2.48	0.96	0.70	0.18	0.64
W 4	2.43	2.04	0.61	0.20	0.32	0.91
W 5	2.84	2.88	0.65	1.06	0.48	0.69
W 6	2.73	2.41	0.46	1.22	0.09	0.64
TOTAL	10.84	9.81	2.68	3.18	1.07	2.88

Note: Pulses = Cowpea, green gram and black gram
Vegetables = Long beans, brinjals, tomatoes, ladies finger and winged beans

Cash Crops = Chillies, onions and potatoes

Source : Survey data.

3.3 ASSESSMENT

We catagorised the sample allotments into 3 groups as 'good', 'average' and 'poor', on the basis of the state of maintenance of cultivation on these plots (Table 3.4). According to this categorisation about 39% of the plots were in a poor state of maintenance and only about 36% of the plots were well maintained, the rest were somewhere in the middle in terms of maintenance.

TABLE 3.4

STATE OF MAINTENANCE OF CULTIVATION IN THE SAMPLE PUMP-IRRIGATED LOTS*

LEVEL OF MAINTENANCE OF CULTIVATION	NO. OF PLOTS	%
Good	10	35.7
Average	7	25.0
Poor	11	39.3
TOTAL	28	100.0

* Source: See notes on Table 2.4 on page 14

The plots in 'poor' and 'average' categories are underutilised because their output is poor compared to the well maintained ones. The reasons for such underutilization of land may be discussed in terms of two inter-related factors- the 'human factor' and the 'organisational factor'. As for the human factor, one may identify the motivation for cultivation as the prime variable in determining the efficiency with which cultivation is done. Unfortunately, we do not have a direct measure of such motivation. Instead, what we have are some indirect indications of the preoccupations of the farmers concerned. Table 3.5 shows the primary occupation of all the heads of the households in the pump irrigation project. Whereas only about 23% of the farmers identify working on their farm as their primary occupation, a majority (52.5%) of the farmers stated that their primary occupation is working as wage labourers either in the agricultural or the non-agricultural sectors. The rest are primarily employed in white collar jobs, business and crafts.

TABLE 3.5

PRIMARY OCCUPATION OF THE HEAD OF HOUSEHOLDS IN THE PUMP IRRIGATED LOTS

PRIMARY OCCUPATION OF HEAD OF HOUSEHOLD	TUBE WELL				No.	TOTAL %
	P 9	W 4	W 5	W 6		
Cultivator	5	16	8	8	37	23.1
Agric. labourer	21	9	14	13	57	35.6
Non-agric. labourer	11	6	4	6	27	16.9
White collar jobs	3	4	10	-	17	10.6
Crafts	2	2	2	2	8	5.0
Business	4	5	3	2	14	8.8
TOTAL	46	62	41	31	160	100.0

Source: Survey data.

It is to be expected that those who are primarily engaged in off-farm activities would generally have less time to devote to their pump irrigated lots and that their cultivation would consequently suffer. Our data appear to support such an assumption in that it is those farmers who are primarily engaged in the cultivation of their own plots who maintained their plots in a good condition. As shown in Table 3.6, about 80% of the farmers whose primary occupation is the cultivation of their pump-irrigated plots maintained their lots in a 'good' condition whereas only about 43% of the agricultural labourers and none of the others maintained their cultivations in a good condition.

TABLE 3.6

PRIMARY OCCUPATION OF HEAD OF THE HOUSEHOLDS CLASSIFIED BY STATE OF MAINTENANCE OF CULTIVATION IN THE PUMP IRRIGATED LOTS

LEVEL OF MAINTENANCE OF CULTIVATION	PRIMARY OCCUPATION OF HEAD OF THE HOUSEHOLD													
	AGRIC. OPERATOR		AGRIC. LABOUR		NON-AGRIC. LABOUR		CRAFTS (MASON, CARPENTER, ETC).		BUSINESS		WHITE COLLAR JOBS		TOTAL	
	NO.	%	NO.	%	NO.	%	NO.	%	NO.	%	NO.	%	NO.	%
Good	7	50.0	3	40.9	-	-	-	-	-	-	-	-	10	35.7
Average	2	14.3	1	14.3	2	50.0	1	100.0	-	-	1	100.0	7	25.0
Poor	5	35.7	3	42.9	2	50.0	-	-	1	100.0	-	-	11	39.3
TOTAL	14	100.0	7	100.0	4	100.0	1	100.0	1	100.0	1	100.0	28	100.0

Source: Survey data

However, the above is not conclusive evidence to the effect that those who are engaged in off-farm activities are necessarily the ones that do 'poor' farming. As a matter of fact about two-thirds of the farmers in the sample have a secondary occupation either in agriculture or in non-agricultural activities. This is mainly because the income derived from the irrigated plot is not sufficient to sustain their families. Further, those who have some external sources of income are in a better position to do good cultivation in that they can afford fertilizer, agrochemicals and other necessary inputs for which money is required. For example, those farmers who have other lands in Vanathavillu in addition to their irrigated plots appear to be doing better cultivation than those who do not. This is shown in Table 3.7; 45.5% of those who have other lands are maintaining their cultivations in 'good' condition as opposed to the 33.3% of those who do not have other lands. Conversely, only about 27% of the pump-irrigated allotments of those who own other lands are classified as poorly maintained as opposed to the 40% of those who do not have other land.

TABLE 3.7

STATE OF MAINTENANCE OF PUMP IRRIGATED LOT CLASSIFIED BY OWNERSHIP OF OTHER LAND IN VANATHAVILLU

LEVEL OF MAINTENANCE OF PUMP IRRIGATED LOT	EXTENT OF OTHER LANDS IN VANATHAVILLU							
	NO OTHER LAND		2.03 HA.		2.04 - 2.43 HA.		TOTAL	
	NO.	%	NO.	%	NO.	%	NO.	%
Good	5	33.3	5	45.5	-		10	35.7
Average	4	26.7	3	27.3	-		7	25.0
Poor	6	40.0	3	27.3	2	100.0	11	39.3
TOTAL	15	100.0	11	100.0	2	100.0	28	100.0

Source: Survey data

Another factor that effects cultivations is the simple economics of costs and returns relating to the farm. We made estimates of costs and returns pertaining to each group of crops in relation to their level of maintenance (Table 3.8). It will be seen that plantains yielded the highest ratio of nett income in relation to the costs involved at all levels of maintenance. Pulses come next in the ratio of returns to costs. Cash crops, which call for a higher capital outlay, yielded relatively low ratios of returns.

It is to be expected that the farmers with the meinimum of resources would prefer such crops as plantains and pulses for the reason that they yield a high income for low costs. This indeed is the case in our sample as has already been discussed. Another noteworthy feature is that those who invested more in their cultivations did not necessarily obtain a higher income compared to those who invested less. As a matter of fact the ratio of income to costs is higher in the 'average" and 'poor' categories. Therefore, it would seem that those farmers who appear to be doing less than efficient cultivation have a rational reason for doing so, namely, maximising profits.

TABLE 3.8

COSTS* & RETURNS PER HECTARE OF PUMP IRRIGATED LAND CLASSIFIED BY STATE OF MAINTENANCE OF CULTIVATION MAHA 1980/81

LEVEL OF MAINTENANCE OF CULTIVATION	TYPE OF CROPS									
	PLANTAINS		PULSES		VEGETABLES		CASH CROPS		AVERAGE	
	COST PER HA. (RS.)	NET INCOME PER HA. (RS.)	COST PER HA. (RS.)	NET INCOME PER HA. (RS.)	COST PER HA. (RS.)	NET INCOME PER HA. (RS.)	COST PER HA. (RS.)	NET INCOME PER HA. (RS.)	COST PER HA. (RS.)	NET INCOME PER HA. (RS.)
Good	788	14671	294	3281	2380	4000	9595	7007	4546	7763
Average	516	13573	210	2304	790	1104	3644	2931	1464	6608
Poor	94	9943	272	2511	884	34	2017	1561	575	4121
TOTAL	457	12627	269	2867	1768	2672	6560	4961	2375	6102

* Excluding family labour

Source: Survey data

The explanation for such discrepancies in cost benefit ratios appear to be in the organisational factor. By the organisational factor is meant both the physical arrangement of plots, irrigation and transport, on the one hand and the institutional infrastructure such as the administration of the project, agricultural extension and marketing facilities on the other. These organisational factors can be discussed by referring to responses of heads of households in the sample to our question as to 'why some pump-irrigated plots were underutilised' (Table 3.9).

TABLE 3.9

SAMPLE FARMERS RESPONSES TO THE QUESTION 'WHY SOME PUMP-IRRIGATED LOTS WERE UNDERUTILISED' *

REASONS FOR UNDERUTILISATION	NO. AND % OF RESPONSES	
Insufficient capital	15	93.8
High cost of inputs	13	81.3
Low returns on produce	15	93.5
Uncertainty & insufficiency in water supply	10	62.5
Inadequate extension	5	31.3

* Number reported as underutilised 16 = 57.2% of total, sample percentages based on number reported.

Source: Survey data

The reasons often cited, as can be seen from the Table, were lack of capital, high cost of inputs, low returns on produce and uncertainty in the supply of water. Lack of capital (or credit facilities) is a serious problem affecting the farmers of this project. Except on the rare occasion where some bank loan was obtained by a temporarily

formed co-operative, farmers have not been able to obtain institutional credit for their cultivations. One of the reasons for this difficulty was that the farmers did not have any acknowledged claim to their irrigated plots. It is only from the last year that there is a system of issuing an annual permit for these allotments on payment of Rs. 10/=. This should hopefully, enable the farmers to obtain some institutional credit in the future. Insufficiency of capital in the above context also implies insufficient income from the cultivations. The nett income that could be derived from these allotments would not leave much for further investment after the day to day living expenses.

High cost of inputs is another factor affecting good cultivation. In the absence of sufficient capital the majority of the farmers were not able to afford such inputs as fertiliser and agrochemicals which were getting more and more expensive. But even for those who did have the capital it was not always easy to obtain the required inputs because of the absence of proper supply outlets. Although there is an Agrarian Service Centre supposed to handle such aspects as input supply, its services, according to our information, leave much to be desired. The Agricultural Research Station in Vanathavillu did much useful research on crops relevant to the region, but its services were not directly available to the farmers of the colony. The organisational set-up was such that for example, the seed varieties that were produced by the research station had to be obtained by farmers of the area from the headquarters in Peradeniya and not from the station.

Probably the most important and the determining factor pertaining to cultivation in the project was the water distribution system. There were several inadequacies and irregularities in the system that contributed to

inefficient cultivation in the project. These inadequacies relate mainly to the administration and the physical infrastructure of the system.

The administration of the water distribution system at the time of our investigations was under the Department of Irrigation. The people on location were four operator-cum-watchers each in charge of operating a pump; four water controllers each in charge of controlling distribution outlets under a pump and a supervisor who was in overall charge. In addition there were a Technical Assistant and an Irrigation Engineer both attached to the Irrigation Department Office in Puttalam who made periodic visits.

Operating the pump was done according to a predetermined schedule. Each pump had different times and durations of operations but, on the average, each allotment was allowed 1½ hours of water supply per day. However, in practice the water distribution was not quite as regular as the schedules show. Irregularities came in the form of breakdowns of the pumps and attempts on the part of operators to pilfer diesel fuel by cutting down on operation hours.

The details of water distribution pertaining to the year 1980, as shown in the official files are presented in Table 3.10.

TABLE 3.10

DETAILS OF WATER DISTRIBUTION IN THE PUMP IRRIGATION PROJECT - 1980

PUMP DESIGNATION	AVERAGE NO. OF HOURS OF WATER ISSUED	NO. OF LITRES ISSUED PER DAY PER AC.	NO. OF DAYS NOT ISSUED	REASONS FOR NOT ISSUING		
				NO DIESEL	BREAK-DOWN OF THE PUMP	RAIN
P 9	1.3	4241	38	7	31	-
W 4	1.7	5305	30	11	18	1
W 5	1.6	4895	63	7	54	2
W 6	1.8	3445	72	5	66	1

Source: Dept. of Irrigation, Groundwater Scheme, Vanathavillu.

It will be seen that there is much discrepancy among the different farms in terms of the number of hours of water issue and in terms of the amount of water issued. Also it is noteworthy that only a day or two is listed as not issued for the whole year on account of rain, and that the files do not show any cut-down on account of off-season. This obviously suggests much wastage of water. Wastage occured also due to faults in the infrastructure. While water was wasted on some plots that had little or no cultivation(because of the absence of proper controls on outlets), there were other plots that were fully cultivated and yet got little or no water due to faults in the levelling of pipes.

Chapter 4

SUGGESTIONS FOR IMPROVEMENT OF THE PUMP-IRRIGATION PROJECT

The most important factor that is missing in the case of the Pump Irrigation Project is proper planning and plan Implementation. Therefore, for any improvement to take place it is essential that there be clear plans with specified targets and a proper administrative set up to support and carry out such plans. Our investigations suggest that there is no clear division of labour or proper coordination among the various departments and officials involved. Therefore, it is suggested that the project be footed on a special project basis where all the facilities would be made available for the proper functioning of the project and, what is more, the necessary decisions will be taken on the spot as and when they are needed. It should be mentioned that there was hardly any official on site or in the Katchcheri in Puttalam that was fully informed of the workings of the project. The important reason for the absence of any official conversant with the project is the frequent transfers of officers concerned. Therefore, it is important that officials who would have major responsibilities in the project should be posted on a long term basis.

The result of the absence of proper administration was that the project has always been faced with a lack of supportive service. These include the fields of marketing, extension and credit. As for marketing, the only crop that has

usually had a reliable outlet is plantains. This is because there is an organised chain of private traders to purchase and transport plantains to Colombo. But the other crops have not had such reliable outlets. Often the farmers have to carry their produce to the city that is miles away and as often they do not get a resonable price. This is particularly so when there is a glut in the market due to a good harvest.

The extension service, inspite of the existence of an Agrarian Service Centre in the colony, leaves much to be desired. Also the Agricultural Research Station in the area, experimenting on crops and cropping systems suited to local conditions appears to be contributing very little to agriculture in the region. With a little more coordination the services of these existing institutions could be made available to the project in a more meaningful way.

Credit is another factor that has hindered good cultivation in the project. Because of the absence of any proper titles to the allotments the farmers had not been able to obtain credit from institutional sources. Although the recent introduction of annual permits should rectify this situation, some form of a long term permit is preferred by the farmers not only as a form of identity to obtain institutional service but also as a form of security. Security in the sense of a long term claim to the land that they work.

Out of all the services water distribution is probably the most important one in the case of this project. As has been pointed out, the regularity and the reliability with which the distribution of water is carried out are far from satisfactory. The reasons for uncertainty arise out of frequent break-downs of the pumps and the malpractices in operating them. With the recent installation of new pumps

it is to be hoped that the break-downs will be minimised. However, the new pumps are not immune to break-downs in the absence of proper maintenance. Also, the malpractices in operating them could still be there. The present watcher-cum-operators of the pumps do not have any idea of the mechanics involved in the machines that they look after. It is suggested that pump operators should have at least a minimum of knowledge and ability to maintain the pumps and to attend to minor disorders. Also there should be closer supervision of the operation and maintenance of the pumps by superior officials, preferably with farmers participation.

The amount of water distributed and the duration of supplies have to be decided on the spot according to the needs. The majority (75%) of the farmers that we interviewed stated the duration of water issue per day should be about 3 hours rather than the present 1½ hours. This in practice need not necessarily mean that the amount of water pumped out be increased but rather that it be more efficiently distributed. The distribution should take into account the weather and seasons. To economise the use of water it is suggested that a levy be charged from each farmer according to the amount of water consumed. This would obviously involve the installation of the necessary measuring equipment at each outlet. A way of economising the cost of operation and increasing the efficiency of distribution would be to electrify the pumps. Electricity is available within 8 km of Vanathavillu. A better system of distribution, which over 50% of the farmers recommended, is some kind of lined canals leading to and through each plot, as opposed to the existing pipe system.

As for the size of allotments a majority (64%) of the farmers expressed dissatisfaction over the existing pattern of 0.41 ha. (one acre) and 0.30 ha. (three quarter of an acre) Most of them suggested that the allotment be 0.61 ha. (one and a half acres) with 0.20 ha. (half and acre) set apart for

homestead and perennial crops, the remainder having reserved for irrigated subsidiary food crop cultivation. It appears to us, from a close look at the best cultivated lots that even 0.41 ha. (one acre) of land is quite sufficient for the average farm family. This of course would apply only if many of the missing factors in terms of supportive services are eliminated. If the services are to be maintained at an average that is lower than the optimum it is to be recommended that the allotments be larger than the present ones in order that there would be at least a bare minimum of income for the average family.

As for the allottees, the existing ones in the project are from diverse backgrounds. Out of all the different types the ones that do the best cultivation are those who have (a) the intention and (b) the means to do good cultivation. This would imply that those to be preferred from the point of view of good cultivation are not necessarily the ones that are generally preferred on social grounds, such as the educated unemployed youth and the landless poor. Therefore, it is suggested that if the aim of the project is successful cultivation and maximum production the allottees should be those with some agricultural background who have an interest in agriculture and should have the means to afford the necessary inputs for proper cultivation.

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APPENDIX

TABLE 1 DISTRIBUTION OF THE SAMPLE POPULATION BY AGE AND SEX IN THE VANATHAVILLU COLONISATION SCHEME

AGE GROUPS	MALE NO.	MALE %	FEMALE NO.	FEMALE %	TOTAL NO.	TOTAL %
0 - 5	71	16.3	63	14.9	134	15.6
6 - 14	108	24.8	119	28.1	227	26.4
15 - 21	66	15.1	67	15.8	133	15.5
22 - 30	52	11.9	61	14.4	113	13.2
31 - 40	55	12.6	55	13.0	110	12.8
41 - 50	34	7.8	34	8.0	68	7.9
51 - 60	35	8.0	17	4.0	52	6.1
60	15	3.4	7	1.7	22	2.6
TOTAL :	436	100.0	423	100.0	859	100.0

No. of households interviewed = 180
Average No. of members of the household = 4.8

Source : Survey data

TABLE 2 DISTRIBUTION OF THE SAMPLE POPULATION BY LEVELS OF FORMAL EDUCATION IN THE VANATHAVILLU COLONISATION SCHEME

LEVEL OF EDUCATION	MALE NO.	MALE %	FEMALE NO.	FEMALE %	TOTAL NO.	TOTAL %
No schooling	90	20.6	89	21.0	179	20.8
Grade 1 - 5	183	42.0	176	41.6	359	41.8
Grade 6 - 8	116	26.6	111	26.2	227	26.4
Grade 9 - GCE (O.L)	44	10.1	46	10.9	90	10.5
Passed GCE (O.L)	3	0.7	1	0.2	4	0.5
TOTAL :	436	100.0	423	100.0	859	100.0

Source : Survey data

TABLE 3

DISTRICT OF ORIGIN AND YEAR OF MIGRATION OF HEAD OF HOUSEHOLDS IN THE VANATHAVILLU COLONISATION SCHEME

DISTRICT OF ORIGIN	YEAR OF MIGRATION									
	1958-65		1966-70		1971-75		1976-81		TOTAL	
	NO.	%	NO.	%	NO.	%	NO.	%	NO.	%
Colombo	11	17.5	6	15.8	10	32.8	10	20.8	37	20.6
Puttalam	33	52.4	14	36.8	9	29.0	16	33.3	72	40.0
Kurunegala	4	6.3	11	28.9	6	19.4	13	27.1	34	18.9
Kalutara	1	1.6	1	2.6	-		4	8.3	6	3.3
Kandy	1	1.6	-		2	6.5	1	2.1	4	2.2
Galle	8	12.7	2	5.3	-		1	2.1	11	6.1
Anuradhapura	1	1.6	-		-		-		1	0.6
Vavuniya	-		1	2.6	-		-		1	0.6
Ratnapura	1	1.6	-		1	3.2	-		2	1.1
Kegalle	1	1.6	1	2.6	1	3.2	2	4.2	5	2.8
Matara	2	3.2	1	2.6	-		-		3	1.7
Matale	-		1	2.6	1	3.2	-		2	1.1
Badulla	-		-		1	3.2	-		1	0.6
Nuwara Eliya	-		-		-		1	2.1	1	0.6
TOTAL	63	100.0	38	100.0	31	100.0	48	100.0	180	100.0

Source : Survey data

TABLE 4 PRIMARY OCCUPATION OF THE SAMPLE POPULATION IN THE VANATHAVILLU COLONISATION SCHEME

PRIMARY OCCUPATION	MALE		FEMALE		TOTAL	
	NO.	%	NO.	%	NO.	%
Agric. Operator	70	16.1	12	2.8	82	9.5
Housewife	-		141	33.3	141	16.4
Student	109	25.0	125	29.6	234	27.2
Household and farm Assistant	39	8.9	51	12.1	90	10.5
Labour (agric. sector)	76	17.4	15	3.5	91	10.6
Labour (non-agric. sector)	27	6.2	7	1.7	34	4.0
White collar jobs	13	3.0	5	1.2	18	2.1
Crafts	5	1.1	-		5	0.6
Business	10	2.3	1	-	10	1.2
Unemployed	5	1.1	3	0.7	8	0.9
Too young and disabled	82	18.8	64	15.1	146	17.0
T O T A L	436	100.0	423	100.0	859	100.0

Source : Survey data

TABLE 5 PRIMARY OCCUPATION AND DISTRICT OF RESIDENCE OF MIDDLE CLASS AND LOWER MIDDLE CLASS ALLOTTEES WHO ABANDONED THE ALLOTMENTS

DISTRICT OF RESIDENCE OF ALLOTTEES	OCCUPATION											
	Govt. Servants		Business		Propertied landowner		Profes-sional		Not known		TOTAL	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Colombo	9	33.3	2	7.4	-		1	3.7	4		12	44.4
Puttalam	3	11.1	2	7.4	1	3.7	1	3.7	1	3.7	8	29.6
Kurunegala	1	7.4	-		-		-		-		2	7.4
Kandy	-		-		-		1	3.7	-		1	3.7
Galle	1	3.7	-		-		-		-		1	3.7
Anuradhapura	1	3.7	-		-		-		-		1	3.7
Jaffna	2	7.4	-		-		-		-		2	7.4
TOTAL :	17	66.6	4	14.8	1	3.7	1	11.1	5	3.7	27	100.0

Source : Survey data

TABLE 6

EXTENT OF CULTIVATION IN MIDDLE CLASS AND LOWER MIDDLE CLASS ALLOTMENTS CLASSIFIED BY PLACE OF RESIDENCE OF ALLOTTEE

DISTRICT OF RESIDENCE OF ALLOTTEES	EXTENT OF CULTIVATION AS A PERCENTAGE OF THE TOTAL EXTENT OF CULTIVATION											
	Not Cultivated		1-25%		26-50%		51-75%		76-100%		TOTAL	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Colombo	12	15.6	6	7.8	2	2.6	6	7.8	12	15.6	38	49.4
Puttalam	8	10.4	2	2.6	3	3.9	2	2.6	13	16.9	28	36.4
Kurunegala	2	2.6	-		-		1	1.3	1	1.3	4	5.2
Kalutara	-		1	1.3	-		1	1.3	-		2	2.6
Kandy	1	1.3	-		-		-		-		1	1.3
Galle	1	1.3	-		-		-		-		1	1.3
Anuradhapura	1	1.3	-		-		-		-		1	1.3
Jaffna	2	2.6	-		-		-		-		2	2.6
TOTAL :	27	35.1	9	11.7	5	6.5	10	13.0	26	33.8	77	100.0

Source : Survey data

TABLE 7

DISTRICT OF ORIGIN AND YEAR OF MIGRATION OF HEAD OF THE HOUSEHOLDS IN THE PUMP IRRIGATION PROJECT

DISTRICT OF ORIGIN	YEAR OF MIGRATION									
	1958-65		1966-70		1971-75		1976-81		TOTAL	
	NO.	%	NO.	%	NO.	%	NO.	%	NO.	%
Colombo	2	20.0	1	14.3	1	11.1	1	16.7	5	15.6
Puttalam	4	40.0	2	28.6	3	33.3	4	66.7	13	40.6
Kurunegala	2	20.0	2	28.6	2	22.2	1	16.7	7	25.9
Kalutara	-		1	14.3	-		-		1	3.1
Kandy	-		-		2	22.2	-		2	6.3
Galle	-		1	14.3	-		-		1	3.1
Kegalle	1	10.0	-		1	11.1	-		2	6.3
Matara	1	10.0	-		-		-		1	3.1
TOTAL	10	100.0	7	100.0	9	100.0	6	100.0	32	100.0

Source : Survey data