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Executive Summary

THE VILLAGE TANK Rehabilitation Program of the National Freedom From Hunger Campaign (FFHC) Board is assessed in this paper as a parallel study to the Anuradhapura Dry-Zone Agriculture Project (ADZAP) which was carried out by the International Irrigation Management Institute (IIMI) in 1988. Following a nongovernmental approach, the FFHC Board has implemented tank rehabilitation programs in several districts in the island. The Thanthirimale cluster in Anuradhapura District is the largest tank rehabilitation project implemented by the Board. In this study, the Board's program in Thanthirimale was assessed through a sample survey, following a similar survey methodology used to assess the Tank Rehabilitation Program of ADZAP (see Ekanayake et al. 1990).

The governing factor contributing to the stabilization of Thanthirimale tank communities is the importance of upland cultivation, which holds true for ADZAP tank communities too. The difference between ADZAP and the FFHC program is the high rate of settlement of farm families in the latter which has resulted in higher cropping intensities in homestead areas (100% for maha [wet season] and 60% for yala [dry season]) and equal cropping intensities (75% and 50%) in market gardens. The cropping intensity in irrigated cultivation in the command area of the FFHC program is very low (22% for maha); an apparent result of the unscientific demarcation of irrigable areas in most of the FFHC tank areas. This is similar to irrigated agriculture under the ADZAP tank areas.

The outstanding feature of the FFHC Tank Rehabilitation Program is the comparatively high degree of settlement which is 75 percent of the total number of selectees, excluding unmarried or single allottees who live with their parents. The main reason for this is that the FFHC Board has made attempts to legally settle some groups of *chena* (swidden) cultivators who were already based in abandoned or semi-abandoned tanks. Although the Board has a selection program, it has deviated from it to include a large number of small tanks each benefiting less than ten families. This deviation depends on the number of families under one tank who are, in most cases, the members of one extended family; this in turn has a positive impact on system management.

The FFHC Board's Tank Rehabilitation Program could be appreciated as an attempt to rally farmers around a common goal, as a solution to landlessness and encroachment problems, as an approach to maximizing the use of local resources, and as a package program aimed at helping *chena* cultivators to become settler farmers.

The following negative features were found in the FFHC Tank Rehabilitation Program: the *wew-sabha* (reservoir council) system of farmer organization which has been introduced as a top-down imposition is not effective; nonadherence to the accepted selection process resulting in the construction of nonfeasible tanks; delay in and incompleteness of construction work; absence of a clear-cut crop management plan; and the lack of a strong monitoring and accounting system.

As the FFHC Board has as yet (after 8-10 years) not fully withdrawn its assistance, the sustainability of the introduced developments could not be assessed, even though this is a crucial aspect of any kind of assistance program.

Acknowledgements

WE CARRIED OUT this study as a component of IIMI's research on Farmer-Marlaged Irrigation Systems in Sri Lanka, beginning in the latter part of 1987. The field survey for this study was completed late in 1989; and this report was completed in time due to the invaluable assistance we received from a number of people, especially from IIMI and the Freedom From Hunger Campaign (FFHC) Board.

We wish to express our appreciation to Dr. David Groenfeldt, former FMIS coordinator of IIMI, who initiated the idea of a study parallel to the ADZAP study. We appreciate very much the continuous encouragement and support extended by Dr. Douglas J. Merrey, in his capacity as Head, Sri Lanka Field Operations; he not only gave his fullest support but made constructive comments on the first draft of this report. We owe a special word of thanks to Dr. Shaul Manor, the present FMIS coordinator of IIMI, who gave the necessary support to the field survey.

We are deeply indebted to the staff of the FFHC Board for the positive assistance rendered in carrying out the field survey on which this report is based. The key persons of the Board we acknowledge in this regard are the Chairman, Mr. B.D.S. Siriratne, the General Manager, Mr. Rajendra Alwis, the Project Director, Mr. Dunstan Fernando, the Assistant Project Director, Mr. K. Wickremasinghe, and Project Officers, Messrs. A. G. Jayasinghe, T. M. Wickremadasa, and H. K. Gunasena who assisted in the field work and also made transport arrangements. We appreciate the comments made on the first draft of this report by the FFHC Board's Project Director and his field staff. We also acknowledge the cooperation of all the farmers in the Thanthirimale tank cluster and their friendly response to the sample survey. Special thanks are due to Mr. Nimal A. Fernando and Mr. Kingsley Kurukulasuriya for editing the final draft of this paper.

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Finally, we alone take the responsibility for the contents of this report.

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Introduction

UNDER THE FARMER-MANAGED Irrigation Systems (FMIS) Project of the International Irrigation Management Institute (IIMI), recent research has focused on the assistance strategy of the Anuradhapura Dry-Zone Agriculture Project (ADZAP), which was one of the largest investments in the small-scale irrigation sector in Sri Lanka. A rapid-assessment survey was carried out during the latter part of 1988 and the resultant research report has been published as Working Paper No.16. Toward the end of this ADZAP study another similar research area was identified. It is the nongovernmental organization-type assistance strategy of the National Freedom From Hunger Campaign (FFHC) Board, considered an alternative approach to state intervention as in ADZAP. The ADZAP research report states: "The participatory manual-labor approach of FFHC is well-known in the country, but the suitability of the approach has not been directly assessed in relation to government approaches" (Ekanayake et al. 1990).

Consequently, IIMI in collaboration with the FFHC Board conducted an assessment study of the Tank Rehabilitation Program in the Thanthirimale cluster in Anuradhapura District. This study was another exercise of IIMI's ongoing research program to document alternative strategies for assisting the minor irrigation sector. This paper is a report overviewing the findings of the study which took place during the latter part of 1989, exactly one year after the ADZAP study was completed. The study covered the Thanthirimale cluster (70 tanks) in general and a sample of 14 selected tanks in particular.

The FFHC Board's Tank Rehabilitation Program

The Sri Lanka National Freedom From Hunger Campaign Board was established as a Statutory Board in 1973 under the Ministry of Agriculture and Lands, and presently it functions under the auspices of the Ministry of Agricultural Development and Research. The FFHC follows a nongovernmental approach in carrying out its rural development assistance program. The two main functions of the Board are: i) the coordination of and support to various nongovernmental organizations; and ii) the implementation of its own projects. Since 1979, however, it has given top priority to the second item (Fernando 1990).

"The Small-Reservoir-Village Community Rehabilitation Programme" is the largest undertaking by FFHC and continues to be implemented from 1979. This program is also known as Village Tank Rehabilitation (VTR). Although FFHC has its VTR programs in seven districts, the highest concentrations of village tanks are in Anuradhapura and Monaragala districts which are the largest and second largest districts in Sri Lanka, respectively.

The Board's development philosophy Aims at : a) people's participation and rural poverty alleviation; b) promoting and encouraging labor-intensive projects; c) helping chena cultivators to become settled farmers by providing them with permanent land with facilities for irrigation; and d) assisting the poor people to improve their living standards. The primary objective of the Board is, thus, not the mere restoration of the small tanks but the improvement of the quality of life of the people living in the tank area.

The Small Tank Rehabilitation Program has been the subject of studies done by various authorities during the recent past. Among them are reviews done by the FFHC Board's officials and independent researchers, and studies carried out by research organizations like the Agrarian Research and Training Institute (ARTI) and IIMI. The participatory aspects of the Board's Tank Rehabilitation Program have also been reviewed by its project director at an initial IIMI workshop (Wijetunge 1986). At a recent workshop, the FFHC Board's assistance strategy was presented (Fernando 1989) and was critically assessed in comparison with other assistance strategies (Vimaladharmasiri 1989). A study on limited tank communities in comparison with other NGO strategies has been done earlier by ARTI researchers (Perera, Jayanthi 1987).

The Rural Development Program of the FFHC Board focused mainly on village tank restoration. The strategy adopted by the Board in achieving its objectives is twofold.

1. Restoration of abandoned tanks, which have been neglected over the years.
2. Renovation of Purana Wewas (working tanks which are still supporting the traditional communities in the dry zone, but which are in a state of disrepair).

The continuation and expansion of chena cultivation all over the dry zone, resulting from the export-oriented, commercial agriculture has upset the ecological balance of the environment and has impoverished the land. The FFHC Board's strategy is to get farmers themselves to reverse this adverse trend with a little guidance, technical training, and financial assistance in matters that are beyond their present capacity (Wijetunge 1986).

The Board does not intend to implement a small wewa renovation programme of its own. Instead it enters into a partnership with the farmers living in and around the abandoned wewas by using the means of storing water as a focal point of rallying them into a wewa-sabha (Reservoir Councils [sic]) and then helping these wewa-sabhās to plan and implement their own development programmes. The Board set out in January 1979 to ascertain the magnitude of this programme and to build a fact-finding system which would permit people to plan such programmes and to organize the continued monitoring of their progress and achievements. As a first step the Board numbered all the wewas (reservoirs) which had been shown on the one-inch-to-one-mile (1:63,360) scale topographical map of the country.

Over 18,000 wewas have been numbered almost all of which are in the dry zone. It was noticed that many abandoned wewas had escaped the notice of the topographical surveyor because they were covered in scrub jungle and were located in country infested with wild animals. When these are included, the total number of wewas and reservoirs will exceed 30,000. Of this number about 7,000 or nearly a quarter are still in working order and supporting wewa-village communities (Wijetunge 1986).

This report deals with the FFHC Board's Tank Rehabilitation Program covering mainly the components of irrigated agriculture, rain-fed agriculture, settlement and organizational setup, with special reference to the Thanthirimale tank settlement cluster located in the northwest region of Anuradhapura District. The Thanthirimale Project is funded jointly by Community Aid Abroad and Welthungerhilfe of West Germany.

IIMI's Links to the Study

IIMI's research interest in the Tank Rehabilitation Program is linked to its mandate to "strengthen national efforts to improve and sustain the performance of irrigation systems, through the development and dissemination of management innovations." The earlier IIMI studies of FMIS were basically concentrated on assessment methodologies and innovative management strategies. State interventions like Integrated Rural Development Programs (IRDPs) and ADZAP were assessed to identify their strategies, performances, and managerial capacities in the context of irrigated agriculture. The findings of these assessment studies have shown the importance of a participatory approach in order to solve a variety of problems and to prevent falling into pitfalls that have been encountered in the management of state-sponsored, assistance strategies.

During the ADZAP study in particular, it was felt important to learn whether the participatory manual-labor approach of FFHC would be suitable to overcome the problems in the implementation of ADZAP since a series of FFHC tanks was also located in the same area northwest of Anuradhapura. The FFHC approach is similar to ADZAP in terms of its multicomponent nature, especially the land consolidation component. The main contrast between the two approaches is that FFHC tends to settle communities already living around an abandoned tank or around a tank in a state of disrepair while the majority of the farmers under ADZAP have been brought in from outside the tank area.

The fact that the FFHC approach solely depends upon the manual labor of the beneficiary families for system improvement makes it quite different from the construction-oriented ADZAP approach which was based mainly on heavy machinery and contractors. According to FFHC literature, the farmers rally around the *wew-sabha* for the implementation of the Tank Rehabilitation-Cum-Settlement Program.

By assessing this beneficiary-oriented participatory approach of the FFHC Board, its implementation process, and results of the rehabilitation program, it is anticipated to learn lessons and gain insights in the following areas:

- a) Appropriateness of the planning process with the participation of the beneficiary farmer;
- b) Effectiveness of manual labor in the tank rehabilitation process.
- c) Status of irrigated agriculture and land-settlement components of the program.
- d) Effectiveness of tank committees (*wew-sabhas*) in overall system management.
- e) Importance of the FFHC approach as an alternative to state intervention as in ADZAP.

Research Methodology

1

THE PRESENT STUDY is based mainly on a field survey carried out in the Thanthirimale cluster of the FFHC Board's Tank Rehabilitation Program during the latter half of 1989. The survey focused primarily on the tank rehabilitation process and also covered the land development and other components like upland farming and settler facilities. The survey consisted of two major parts: one was the general survey on 70 tanks in the Thanthirimale cluster which was a rapid assessment of the physical progress of the systems improved under the Board's program; the other was the detailed sample survey on 14 selected tanks where fairly detailed socioeconomic data were collected.

The sample of 14 tanks out of the total 70 (i.e., 20% of the total) in the Thanthirimale cluster was selected following a random sampling technique. Whilst a quick one-day visit was devoted to the general physical assessment survey, two- to three-day visits were made to the sample tanks. Each of the farmers in the tanks was interviewed by an IIMI Research Officer who carried out the field survey.

The survey was carried out using a questionnaire designed in line with IIMI's previous assessment guidelines (prepared for Badulla IRDP and ADZAP), with appropriate modifications to suit the conditions of the FFHC Board's Tank Rehabilitation Program. The questionnaire comprised two parts; the first was a physical assessment of the project and tank construction for the general survey done with the assistance of the FFHC Board's officials and by field visits; the second, for the sample survey directed to all the farmers in the sample tank areas, covered settlement, farmers' knowledge of the project, agriculture, irrigation, and social cohesion.

The information relevant to part one of the survey was collected mainly from the Board's files on tanks, with the assistance of the Project Officer who was the supervisor for development activities. The field survey was also carried out with the help of the FFHC Board's officials who provided assistance as and when it was possible and appropriate for them to do so.

Apart from the survey, the Board's publications, previous studies on the FFHC Board's Tank Rehabilitation Program (e.g., Perera, Jayantha 1987), and direct information from the Board officials were also used in this study.

The Study

OF ALL THE tank systems identified in the survey conducted by the FFHC Board, some 7,000 systems are still in operation, but they are in various stages of disrepair. Their renovation, according to the FFHC Board, would result in improving the quality of life of the people who live in these tank areas. Furthermore, the FFHC Board believes that this can be done by the farmers themselves with a little guidance and financial assistance.

According to the Board's strategy, the farmers undertook to do all the earthwork and to provide locally available material. At the same time farmers were encouraged to manage their own affairs through wew-sabhas and each village organized its own wew-sabha. It is reported that the number of village reservoir communities supported by the Board was 135 as at the end of March 1989. These village irrigation systems are located in 12 village clusters mainly within 7 administrative districts of Sri Lanka as indicated in Table 1 (see also Figure 1).

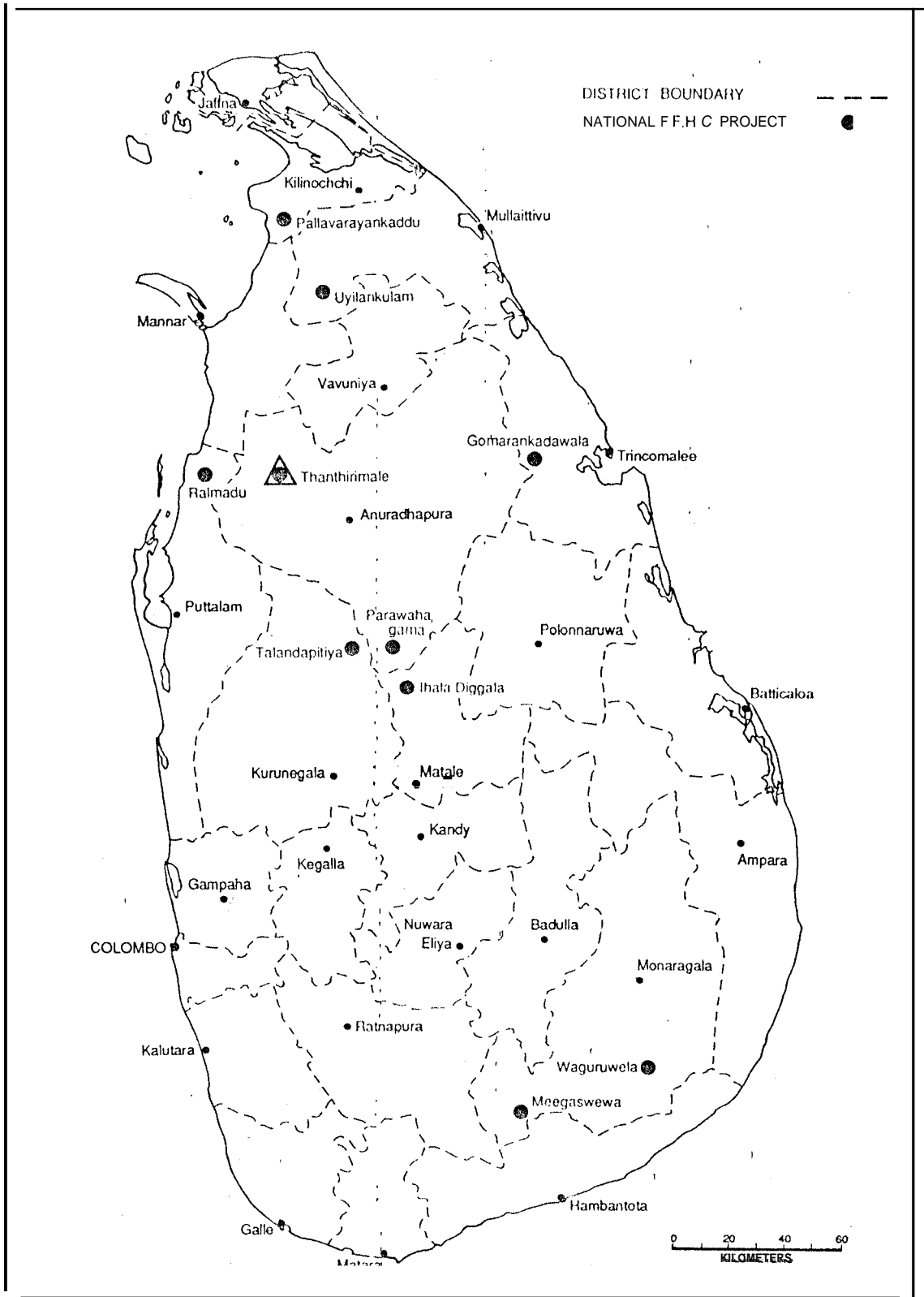
Table 1. Distribution of tanks under FFHC Board's Village Tank Rehabilitation Program.

District	Village	No. of tanks	No. of tanks completed	No. of families
Anuradhapura	Thanthirimale	77*	54	965
	Parawahagama	07	07	-
Matale	Ihala Wiggola	07	02	-
Monaragala	Waguruwela	35	33	576
	Meeyaswewa	15	11	208
	Siyambalanduwa	15	05	235
Puttalam	Knruwalagaswewa	19	-	325
Trincomalee	Kumbukwewa	06	06	138
	Gomarankadawala	19	-	454
	Morawewa	08	-	188
Mullaattivu	Uyilankulam	01	-	-
Jaffna	Pallawarayankaddu	01	-	-
Scattered	-	17	17	-
Total		272	135	3,089

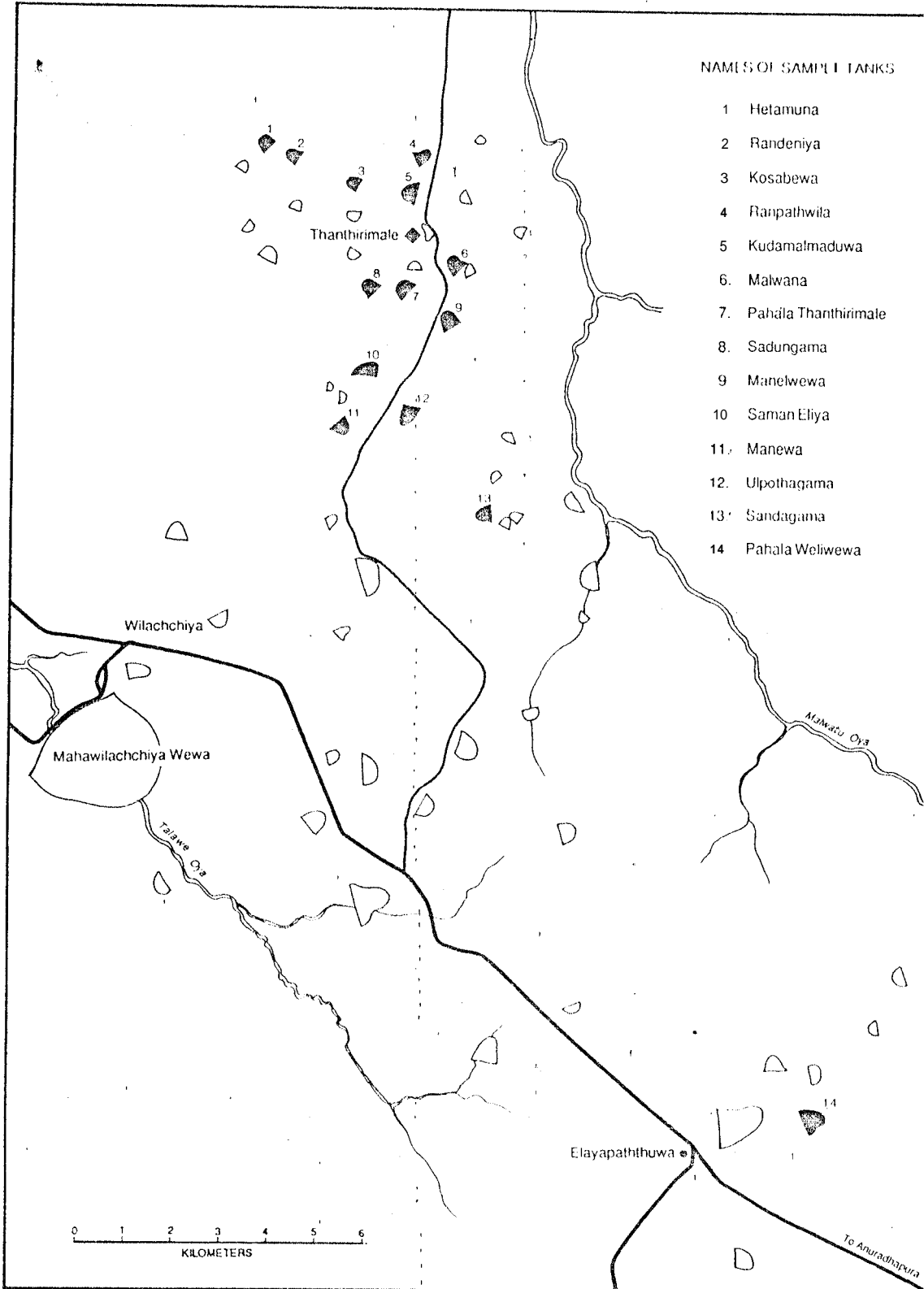
*Originally identified total number was reduced to 70 by March 1989.

Source: Fernando, Dunstan 1990.

Figure 1. Map of Sri Lanka showing FFHC projects.



The study location was Thanthirimale iri Anuradhapura District, with one of the biggest tank renovation projects, undertaken by the FFHC Board (Figure 2). It has a total of 70 small tanks and 678 settler-families (according to the March 1989 estimates). Each family was provided with two acres (0.8 ha) of irrigated rice land and one-and-a-half acres (0.6 ha) of highland as homestead and market garden, respectively. Besides land, these farmers received financial assistance to develop their Land. The program assumed that rural farmers could be self-sufficient in food throughout the year.



Pre-Project Status of the FFHC Tanks

PRIOR TO THE development of the project area by the FFHC Board, most of the tank areas were occupied by the local farmers and migrants from densely populated areas. The study revealed that over 75 percent of these settlers had come to the project area before development started in that area; also 75 percent of the settlers had learnt about the area through the relatives of the Chief Incumbent of the Thanthirimale vihara. After this monk's arrival at the vihara, his relatives and people known to him had begun to settle down in the project area. Table 2 indicates how farmers came to know of the tanks. Although the tanks were not in a working state, villagers settled around the tanks which thus became the nuclei for their settlement. Most of the tanks were breached and temporary dams were built by the villagers to accumulate water for their use and for the use of their cattle. Only a very few tanks supplied water - and that to a very limited command area of each tank - after improvements under various schemes. Therefore, rice contributed very little to the annual income of the families during the past. Chena cultivation was the major practice throughout the tank area. Some of the tank beds were used for a limited rain-fed rice cultivation but the produce was not sufficient under the uncertain rain conditions in the area. Table 3 shows the land use pattern under pre-project, conditions.

Table 2. Farmers' responses to the question: "How did you come to know of the tank area?" (N=105).

Source	Number of farmers	Percent of farmers
The Chief Incumbent of the vihara	14	13.3
The Chief Incumbent's relatives	79	75.2
Farmers doing chena	10	9.5
Other	02	2.0
Total	105	100.0

Source: Sample survey 1989.

Pre-project land tenure arrangement in the tank area was dominated by one or two families who had first settled in each tank area. Although the settlers have been occupying the land for several years it has remained the property of the state. Very few farmers, however, had permits for cultivation.

Prior to the development of the project area for settlement, all the development activities of the study area were carried out by the Rural Development Society of Thanthirimale. The Chief Incumbent of the Thanthirimale vihara was the Chairman of the Rural Development Society whose leadership was acceptable to all the farmers who were either his relatives or people known to him.

Table 3. *Pre-project pattern of land use by farmers (N=105).*

Land use	Number of farmers	Percent of farmers
Chena	14	13.3
Chena and highland	28	26.7
Chena, highland and rice	47	44.8
None	16	15.2

Source: Sample survey 1989.

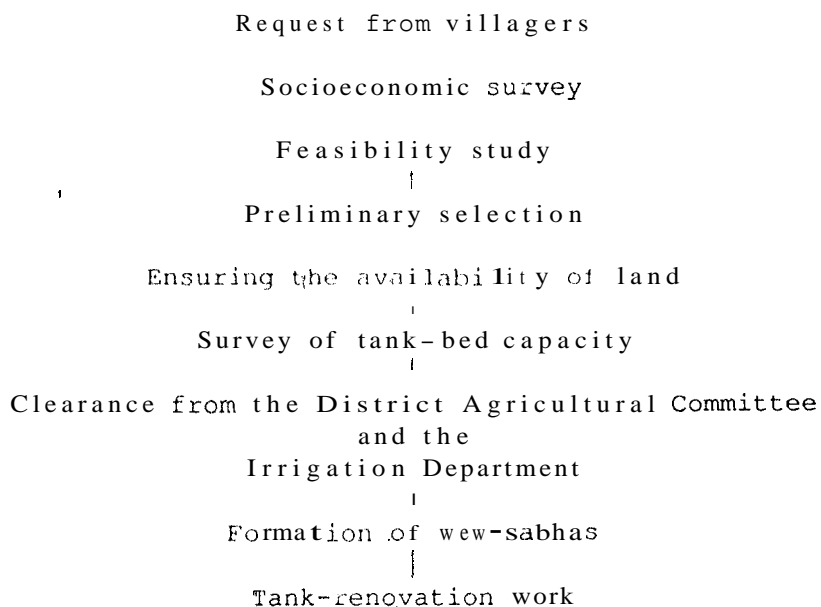
The Planning and Selection Process

TANK RENOVATION ACTIVITIES of the FFHC Board can be divided into four stages: the selection of tanks for renovation, the selection of settlers, the establishment of settlements under the renovated tanks, and the formation of the wew-sabha.

Tank Selection

The selection of tanks for renovation is usually done at the request of the beneficiaries. Although there is no clear policy in selecting the tanks, the Board gives preference to small reservoirs, especially those which irrigate less than 20 ha (50 acres) of command area. Preference is also given to the less-privileged people of the dry zone.

The formal selection process undertaken by the Board is as follows:



¹ The FFHC has very recently developed a set of more acceptable and practical criteria which will be used for future projects.

Selected tanks can be divided into two categories:

1. *Tanks in the Purana Villages.* These tanks are still supporting traditional communities, but are in a state of disrepair.
2. *Abandoned Tanks.* These tanks have been abandoned for years due to various physical and demographic reasons.

Theoretically, the initial request for assistance should come from the villagers. But, in practice, the tank selection in the Thanthirimale study area has been done by the Chief Incumbent of the vihara at the early stages, because of his position both as the Chief Incumbent and as the Chairman of the Rural Development Society. At the beginning of the project, the Incumbent had informed the villagers of the FFHC Board's assistance for tank renovation and had also asked assistance from the Board on behalf of the farmers. Two specific questions were asked from the settlers and project officers, and the data show two different scenarios. Table 4 shows the farmers' response to the question of who requested the FFHC assistance and Table 5 shows the project officers' response to the question of who selected the tanks for renovation.

Table 4. Farmers' responses to the question: "Who requested the FFHC assistance?" (N=105).

Requested by	Number of farmers	Percent of farmers
Chief Incumbent	47	14.8
Villagers	38	36.2
Village headman	18	17.1
Not known	2	1.9
Total	105	100.0

Source: Sample survey 1989.

Table 5.

Selectee	Number of tanks	Percent of tanks
Farmers	40	57.1
FFHC officers	6	8.6
Political leaders	13	18.6
Chief Incumbent	11	15.1
Total	70	100.0

Source: Project officers of the IFHC district office, Anuradhapura.

It was found that project officers were rather reluctant to accept the fact that the Chief Incumbent of the vihara of the area had played a dominant role in tank selection and were careful to emphasize the importance of farmers! Toward the latter part of the project however, farmers who were based in the tank areas had written to the project officers asking their assistance; they had also sought support from political leaders to get their tanks selected for renovation.

Settler Selection

The selection of legitimate settlers for the FFHC tanks was quite different from that of other tank rehabilitation programs like ADZAP because in the former case no settlers were brought in from outside a given tank area. In the Thanthirimale Project, 678 families have been "settled" within the last 10 years. Two Land Kachcheris were held within these 10 years, to select all the settlers. The word "resettle" is used instead of the word "settle" since most of the FFHC tank areas in Thanthirimale were occupied before renovation work began. According to this study, 78 percent of the settlers had occupied the area prior to the development work. Before starting the development work farmers had to express their willingness to hand over all the land they occupied to the state in order to decide the procedure that would suit development. This procedure helped the Board ensure that every family would own a viable farm unit, and that it would result in the Preparation of a desirable development plan.

Establishment of Settlements

After the selection of eligible settlers by the Land Commissioner's Department, the FFHC Board was responsible for settling them in each tank area. Although the Board was not involved in the selection process it sent the list of wew-sabha members to the Kachcheri. Land Kachcheris were usually held for these wew-sabha members. The criteria considered in settler selection included landlessness, age, marital status, knowledge and experience in farm activities, and proof of residence within the area. But these criteria have not been seriously adhered to in some instances where some old people, boys, and girls too have become owners of land in these tank areas.

In almost all these tank areas the adults of a family had shown their eligibility for land where they had settled down some years before. The leader, who was the adult male of an extended family had made sure that each of his children, whether married or unmarried, would be entitled to a unit of land.

Once selected, the land was distributed among the settlers by the Project Officer of the Board. Each of these settlers was given 0.8 hectare (ha) (2 acres) of rice land, and 0.6 ha (1.5 acres) of highland. A highland block constituted 0.2 ha (0.5 acre) for a homestead and 0.4 ha (1 acre) for a market garden. When allocating the alienated land to the selectees the Board gave priority to the wew-sabha members who had participated in the earthwork. Table 6 gives farmers' responses to the question, "When did you first move in?" Table 7 gives reasons given by farmers for the nonsettlement of some farmers in the tank-village.

According to the Board's development methods the total land area was divided into different blocks as follows: the irrigated area was divided into two tracts and each family given an allotment of 0.4 ha (1 acre) in each tract. The highland area too was divided into two as 0.4 ha (1 acre) of market garden and 0.2 ha (0.5 acre) of homestead. However, some of the settlers under some tanks had not agreed to the new land development method. Therefore, sometimes the Board had to exclude them from the project and in some cases the Board had to temporarily stop all development work until settlers' arrived at a consensus. The development work

² A Kachcheri is a Government Agent's secretariat. A Land Kachcheri is a government office where matters pertaining to land are handled.

Table 6. Farmers' responses to the question: "When did you first move in?" (N=105).

Time period	Number of farmers	Percent of farmers
Before the project started	78	74.3
After the project started	13	12.4
Not yet moved	14	13.3
Total	105	100.0

Table 7. Reasons given by farmers for the nonsettlement of some farmers in the tank-village (N=105).

Reason	Number of farmers	Percent, of farmers
Own outside land	20	19.0
Not yet married to be settled separately	43	41.0
Live in the spouse's village	23	21.9
Other/Not relevant	19	18.1
Total	105	100.0

Source: Sample survey 1989.

at Nindagama Tank and Mahabilleva Tank was disrupted for some time due to a dispute over preoccupancy of land. Farmers around these two tanks had shown an interest at the initial stage of the project in accepting this land development project. But after renovation, they were reluctant to give up their lands as agreed. One reason for this type of disagreement afterwards is that settlers did not like to give other their cultivated land and to receive in return undeveloped land. According to this new development method, each of the settlers had to accept 0.4 ha (1 acre) from the upper part of the tank area and 0.4 ha (1 acre) from the lower part. Some of these settlers claimed that they had bravely faced many hardships for many years to develop the land and that they had to bring the fields up to a cultivable state by struggling against frontiers of the jungle with its wild animals. One new-sabha leader said that he had spent half his life to develop the land he occupied and now he had neither the time nor the strength to develop some other land. The group attitude and collective feelings have not been developed among settlers under some of the rehabilitated tanks, even though the new-sabha was supposed to achieve these goals.

Formation of the Wew Sabha

Originally, the tank rehabilitation work was supposed to be organized through the participation of Rural Development Societies, which are village-level grass-roots organizations for rural development. The Rural Development Societies normally represent more than one tank area or one hamlet. The Board found that

the poorest of poor farmers who were the target group of its Tank Rehabilitation Program were not adequately represented in Rural Development Societies since the local elite, the office-bearers of Rural Development Societies, were not generally interested in the upliftment of the poorest group. As such, for the purpose of direct participation of the poorest farmers, the wew-sabha was established in 1986, making the tank the focal point of activity to harness the resources of all farmers. In theory, this wew-sabha is similar to the council that existed in ancient times with modifications to suit the project context (Wijetunge 1986).

The wew-sabha system was designed to motivate the village communities to discuss their problems and to solve them by themselves. According to the FFHC wew-sabha system, each small reservoir village was treated as a separate unit. All the farmers who cultivated rice land under each of the small tanks were members of the wew-sabha. The wew-sabha usually had a membership between 20 to 40 farm families. Also, the wew-sabha was supposed to have sufficient funds to look after the reservoir and its irrigation system. To meet this requirement the Board suggested an arrangement where cultivators agreed to contribute to the wew-sabha at the rate of 143 kg of rice per ha (2 bushels per acre) from their harvests. The main functions of the wew-sabha were as follows:

- 1) To function as a catalytic organization within the village.
- 2) To restore the abandoned tank and its irrigation system.
- 3) To repair and maintain the tank and its irrigation system according to a regular maintenance schedule.
- 4) To regulate and control the issue of water.
- 5) To plan and regulate the cultivation pattern under the irrigable area of the tank.
- 6) To plan and organize the village agricultural development activities.
- 7) To plan and participate in community-development and social-welfare work.

In the study location, Thanthirimale, 70 wew-sabhas were formed under all the tanks coming under the project. Although the FFHC Board introduced a "maintenance fund" for each wew-sabha, there was no evidence of its effective use in tank maintenance work. It was also found that the farmers expected the Board to continue helping them repair the damages caused to the tank by cattle and wild elephants. Many settlers had problems pertaining to land demarcation and sought the Project Officers' assistance to solve these problems.

Project Implementation

THE TANK REHABILITATION Program of the FFHC Board has developed into a package program involving three major components; 1) physical rehabilitation of the tank including upstream and downstream development; 2) upland development inclusive of homestead and market garden; and 3) settlement development including facilities for farm families. Tank construction is the major part of the physical rehabilitation process, which in turn includes three major activities:

1. Reservoir dam reconstruction up to a height of nine feet above the spill level.
2. Reconstruction of sluice for controlled release of water (replacing village-type sluice with a step-type sluice).
3. Reconstruction of the water distribution system to ensure equal distribution of water.

At the implementation stage, it was found that the construction process was much slower than expected, owing to the fact that continuous work could not be undertaken in tanks with a limited number of farmers around them. On average, it has taken one to three years to complete the head works; and work on canals was even slower. The channel system had not been constructed in a third of the completed tanks in the Thanthirimale tank area, whilst some other tanks had the old channel system for part of the command area which covered only the old field (purana wela). The progress of tank construction is shown in Table 8.

Table 8. Progress of the Thanthirimale Tank Rehabilitation Program.

Aspect	Number of tanks	Percent of tanks
Initial approval for construction	77	100.0
Fund allocation	74	96.0
Construction started (revised)	65	84.4
Construction work started	70	90.9
Abandoned halfway	07	9.9
Fully completed (except canals)	54	70.0
Partially completed	16	20.7

Note: Total no. of families = 965 , 1

Source: FFHC district office project Files and the total survey.

Role of the Wew-sabha

It was assumed that all maintenance work was to be done through the wew-sabha, but this was not what happened in the field. Some of the settlers did not listen to the leaders of the wew-sabha and they did not attend to the maintenance work. The sample survey showed that 68 percent of the settlers claimed they cleared the tank bunds and irrigation systems annually as a group or individually. Tables 9 and 10 show the frequency of clearing of the tank bund and the distribution pattern of the wew-sabha membership in tank areas, respectively.

Table 9. Clearing of tank bunds by farmers (N = 105).

Frequency	Number of farmers	Percent of farmers
Once a year	71	67.6
Twice a year	21	20.0
No regular clearing	13	12.4
Total	105	100.0

However, according to field observations, 79 percent of the settlers have not cleared their portion of the bund or have not attended to the clearing of the tank bund during the current year (1989). Apparently some of the tanks have not been cleared for a long time. Only a few tanks having the tank bund as link roads were regularly cleared by the settlers. The rationale for this was indicated by some settlers as: "There is no water in the tank for cultivation; so what is the use of cleaning the tank bund?"

Another reason given for not maintaining the tank bund and the irrigation system was the insufficiency of wew-sabha members in small tank areas. Although it was said that wew-sabhas had a membership of 20 to 40 farm families, only 5 tanks out of the 70 had 20 settlers or more.

Table 10. Number of wew-sabha members settled in the tank areas.

Number of members	Number of tanks	Percent of tanks
3 - 5	13	18.6
6 - 10	18	25.7
11 - 15	16	22.8
16 - 20	9	12.9
21 - 25	5	07.1
No information	9	12.9
Total	70	100

Source: FFHC project files.

The labor of the wew-sabha members was insufficient and this insufficiency has created difficulties in clearing the tank bunds. The tank bunds and the structures of some tanks are presently covered with thick grass and bushes.

Role of the FFHC Board

The FFHC Board, being the sole implementing agency of the Village Tank Rehabilitation Program, has a top-down administrative setup operating at three levels (*see* Figure 3):

1. National level - Project Director
2. District level - Assistant Project Directors
3. Project level - Project Officers and Field Assistants

The overall manager of the Tank Rehabilitation Program was the Project Director who managed, coordinated, and monitored the project activities at the national level.

Thanthirimale, being the largest Village Tank Rehabilitation Program in the island, was managed by an Assistant Project Director at the district level. He was responsible for the tank selection process and planning, formation of wew-sabhas, implementation of the construction program, and fund-disbursement for different assistance programs. In shouldering these responsibilities he was assisted by three Project Officers who were the project-level implementation officers.

Project Officers played a key role in the implementation of the Tank Rehabilitation Program. They were the "contact persons" for the project activities. The main functions of the Project Officers in the Thanthirimale project could be summarized as follows:

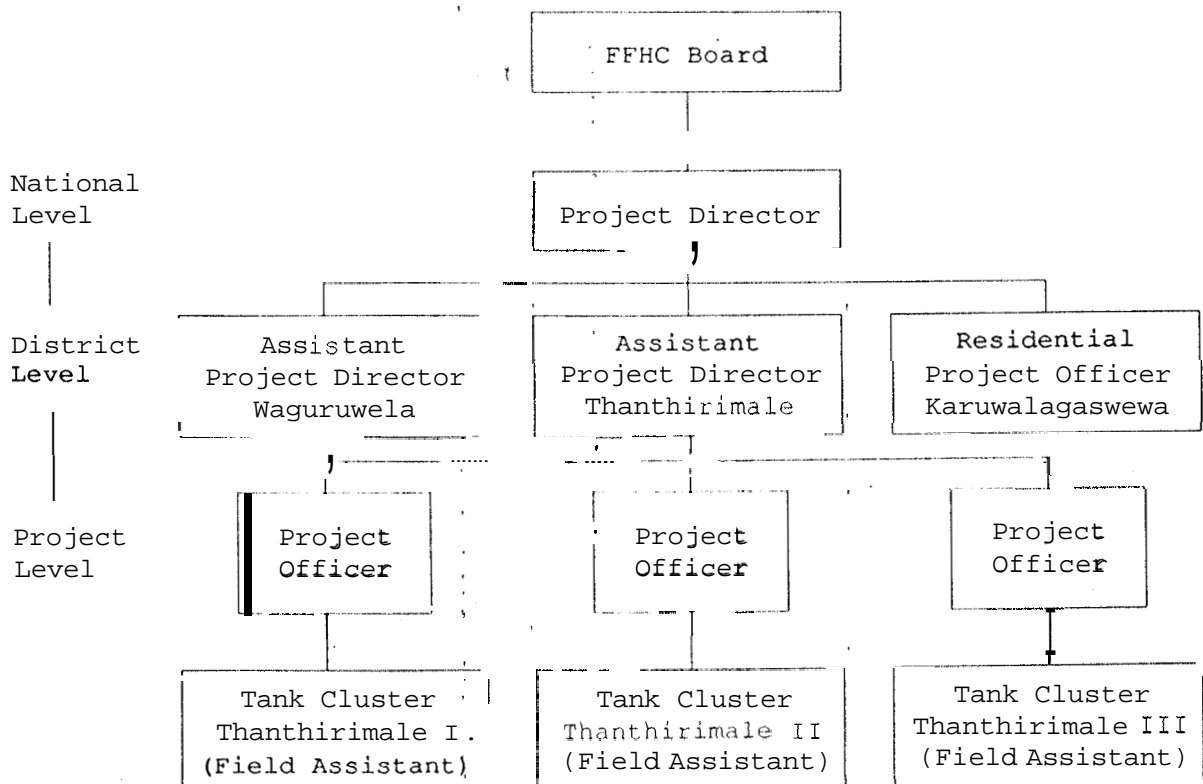
1. "Selection" of tanks and prospective settlers through existing Rural Development Societies or other such organizations.
2. Organizing farmers under each tank area into a wew-sabha and holding regular meetings to plan and carry out the construction work.
3. Carrying out the construction work through wew-sabhas; construction work included dam filling by farmers, provision of materials for sluices and spills, and organizing both skilled and unskilled labor with the assistance of the wew-sabha chairman who functioned as the works supervisor.
4. Making payments for i) farmers' labor (50% of the payment is deducted as farmers' donation for construction work), ii) other construction work, iii) land development (lowland and highland), iv) construction of dug-wells, and v) seed paddy (unhusked rice for planting) and plant subsidies.
5. Coordinating the land alienation process to consolidate settlers' land in cooperation with the Land Commissioner's Department, and showing the blocked-out land units to the respective farmers.
6. Organizing agricultural extension and crop development work and credit for cultivation, water pumps, housing, etc.

The Project Officer in charge of a cluster of tanks was assisted by a Field Assistant who was selected from the local community and appointed as the regular worker at the field level. He was expected to continue as the catalyst in the village community, even after the FFHC assistance was withdrawn. It was found that the Project Officers' individualism, duty consciousness, and efficiency have mattered a lot in project implementation and settlement establishment.

There were two Technical Assistants attached to the Thanthirimale project to look after the technical aspects of the project which included design planning, preparation of estimates, and supervision of construction work. There was also another Project Officer who was a professional agriculturist to look after the agricultural aspects of the entire project area. His assigned duties included crop development, farmer training, and agricultural extension.

The FFHC Board's role in implementing the Tank Rehabilitation-Cum-Settlement Program was an independent one, without involving line agencies like the Department of Agrarian Services or the Department of Agriculture. It has recruited its own technical staff (Technical Assistants and Agricultural Project Officers) to look into these aspects. The only Department they dealt with was the Land Commissioner's Department, which implemented the land alienation program through the Government Agent, Anuradhapura.

Figure 3. Administrative setup of the FFHC Board.



Project-Induced Benefits

THE PROJECT WAS designed to assist rural communities to restore their tanks and develop the irrigation systems, and thereby increase their food supply. With this purpose in mind, each settler was provided with 0.8 ha (2 acres) of irrigable land and 0.6 ha (1.5 acres) of upland for homestead and market garden, respectively. Officially, most of these farmers had been landless in the past. Therefore, the project was a major step forward in agrarian reform through a program of land consolidation. It was also anticipated to increase the food supply and to achieve an ecological balance through permanent cultivation on their own land. The extent alienated to farmers under sample tanks, by land use type, is shown in Table 11.

Table 11. The extent alienated to farmers under sample tanks.

Name of the tank	No. of families		Rice land (area) (ha)	Homestead (area) (ha)	Market garden (area) (ha)	Total (area) (ha)
	Total ¹	Settled ²				
Pahala Thanthirimale	06	05	4.9	1.2	2.4	8.5
Hetamuna wewa	09	08	7.3	1.8	3.6	12.7
Kuda Malmaduwa	07	06	5.7	1.4	2.8	9.9
Manel wewa	10	08	8.1	2.0	4.0	14.2
Malwana wewa	10	10	8.1	2.0	4.0	14.2
Manewa wewa	15	14	12.1	3.0	6.1	21.2
Sandagama wewa	04	04	3.2	0.8	3.6	5.7
Ranpathwila	05	02	4.0	1.0	2.0	7.1
Saman eliya	03	03	2.4	0.6	1.2	4.2
Ulpathgama	07	05	5.7	1.4	2.8	9.9
Randeniya	08	07	6.5	1.6	3.2	11.3
Sadungama	07	01	5.7	1.4	2.8	9.9
Pahala-weliwewa	17	12	13.8	3.4	6.9	24.1
Kosabewa	14	14	11.3	2.8	5.7	19.8
Total	122	105	98.8	24.4	49.1	172.7

¹Total number selected including, married and unmarried allottees

²Number actually settled and/or interviewed.

Source: Sample survey 1989.

Status of Irrigated Agriculture

Irrigated agriculture has performed very poorly in the designed command areas of the 14 sample tanks. During the eight years (1981-1988) of project implementation in Thanthirimale, maha season had been successful only for two years, 1983 and 1987, and the rest of the period had been reported as drought years. The irrigated agriculture, even in the successful years, was limited to a few tank areas of the sample. It was also found that only a limited extent of the total command area under these tanks could be cultivated during the successful years. Table 12 shows the extent cultivated at least for one season after rehabilitation in the sample tank areas.

Table 12. Status of irrigated agriculture (rice) in the sample tanks.

Name of the Tank	No. of farmers		Rice land (area) (ha)	No. of seasons	Cultivated extent (area) (ha)	Percent
	Total	Settled				
Pahala Thanthirimale	06	05	4.9	02	2.0	42
Hetamuna wewa	09	08	7.3	03	1.6	22
Kuda Malmaduwa	07	06	5.7	03	2.0	36
Manel wewa	10	08	8.1	02	2.4	30
Malwana wewa	10	10	8.1	02	2.0	25
Manewa wewa	15	14	12.1	01*	0.4*	03
Sandagama wewa	04	04	3.2	01	0.6	19
Ranpathwila	05	07	4.0	01	0.8	20
Saman eliya	03	03	2.4	-	0.0	00
Ulpathgama	07	05	5.7	03	1.2	21
Randeniya	08	07	6.5	03	1.6	25
Sadungama	07	07	5.7	03	2.4	43
Pahala-weliwewa	17	12	13.8	02	2.0	15
Kosabewa	14	14	11.3	02	2.0	18
Total	122	105	98.8	-	21.0	
Average						22.8

*Cultivated by a single farmer.

Source: FFHC files and sample survey.

Irrigated agriculture was not possible in some tank areas even during the rainy years, owing to the incompleteness of the rehabilitation work or defects in the completed tanks. Of the total 70 tanks in the Thanthirimale cluster, work on different components was not 100 percent completed as indicated in Table 13. Therefore, in real terms, no tank was complete according to the findings of the general survey conducted in the Thanthirimale cluster.

Table 13. Status of different components of tanks in Thanthirimale (total number of tanks = 70).

Component.	Number of tanks	Percent of total
1. Step-type sluice (completed)	48	68.6
Village-type sluice	04	5.7
No sluice (or incomplete)	18	25.7
2. Spill (completed)	53	75.7
Natural spill and/or incomplete spill	17	24.3
3. Channel system available	45	64.3
No channel system or incomplete	25	35.7

Source: Total survey 1989.

Other than problems encountered during dry spells in some years, irrigated agriculture in the sample tanks was constrained by a few problems as summarized below:

- a) The limited catchment areas of most of the tanks were not surveyed to estimate capacity.
- b) Command area of most of the tanks was increased based on the number of farm families "available" and not on the tank capacity.
- c) The critical components like sluices, spill and channel systems of over 50 percent of the tanks were not completed, making water distribution difficult: only the old channel was available for cultivation while the new channel and command area were yet to be cleared in some tank areas.
- d) The limited cultivated area of successful tanks was in the traditional command area which was the head-end portion of the newly designed command area, (this was in most cases, about 50-60 percent of the new command areas).
- e) The step-type sluice of the FFHC Board was not effective for a sound water management practice as it had a few in-built defects.
- f) Delay of three to six years in most cases, of rehabilitating work.

Rice cultivation during the good years was limited to the head-end 0.4-ha (1-acre) blocks of each farmer. There was no evidence whatsoever that the total command area of any tank was cultivated even in rainy years. Therefore, the increase in actual cultivable area and thus the cropping intensity after rehabilitation was very negligible.³ The average area cultivated to rice varied from 1.2 to 2.4 ha (3 to 6 acres), or 40-50 percent of the earmarked command area.

³ Recent field observations made by the authors (October-November 1990), suggest that in 1989 maha and 1990 yala (for the first time) a considerable area of many sample tanks has been cultivated which may change some of the findings in regard to irrigated agriculture.

However, there was a considerable increase in yield per hectare in a number of tank areas according to the FFHC Board's cultivation data collected during 1982/83 and 1985/86 under 48 tanks; the average yield had increased by over 80 percent from 1,576 kg/ha (22 bushels per acre) in 1982/83 to 2,866 kg/ha (40 bushels per acre) in 1985/86.

Status of Upland Development

Upland cultivation has played a dominant role in the project area before and after the tank rehabilitation. Chena cultivation was the traditional, livelihood of the farmers in the area. With the FFHC Board's land consolidation program, farmers became owners of 0.6 ha (1.5 acre;) of upland plots in addition to the 0.8 ha (2 acres) of rice land.'

In most of the sample tank areas the 0.2 ha (0.5 acre) homestead plot and the 0.4 ha (1 acre) market garden comprised one unbroken plot of land and people had cultivated subsidiary food crops in the upland area without separating this plot into homestead and market garden. In a few tank areas where two units of upland area were physically separated, farmers usually cultivated homestead and moved to the market garden when there was sufficient rain for extensive cultivation. Farmers were entitled to a payment of Rs 250 for the development of each market garden.

The crops grown in the upland area included both food crops and cash crops such as black gram, cowpea, green gram, maize, chili, sesame, and vegetables. In Thanthirimale, the widespread major upland crop was black gram which is more resistant to drought and diseases. Sesame is mainly a yala crop while chili and maize are also common crops grown in the area.

The newly allotted upland area of a few tanks of the sample was not fully developed as a result of nonsettlement by farmers. Farmers who had already settled along the main road close to tank areas did cultivation similar to chena, without moving in to their legal allotments. This practice, however, was not as harmful as in ADZAP tanks where some farmer families lived far away from the tank country.

The most striking feature found in the survey was the significance of upland farming which was mostly supplemented by well-irrigation. The project-assisted (Rs 6,000 per domestic well, per family) dug wells have been effectively used by about 60-75 percent of the farmers who have settled permanently on their respective land blocks. The extent cultivated during each maha ranged from 0.4 to 1.0 ha (1 to 2.5 acres) depending on the water availability in the tank which controlled the water table of the cultivation-wells as, these wells were located in upland plots at the level of the tank beds in most cases. There are cases where two farmers pooled their allowances for 'dug wells (Rs. '6,000 each) and constructed one big cultivation well. In each of the sample tank's, 25-40 percent of the farmers, individually or jointly, possessed water pumps for well-irrigation. The income from the upland cultivation and/or credit from banks has been used to purchase these water pumps: It was also observed that most of the farmers who had done serious well-irrigated upland cultivation had obtained higher yields.

The farmers who have been settled have developed their homesteads into home gardens, which are crowded with perennials like coconut, mango, jack fruit, orange, lime and banana. The most striking example was the home gardens developed

by farmers in the Pahala Thanthirimale tank where farmers were continuously dependent upon the upland in the event of a prolonged drought. In almost all the sample tanks, the common crop grown in the homestead area was banana.

Status of Settlements

As indicated in the section under settler selection, the FFHC Board's Tank Rehabilitation Program is quite different from the usual tank settlement programs because legal rights have been given to a set of already settled families or individuals to own their land which is a kind of "re-settlement." People were not brought in from far away places to be settled in. Out of a total of 122 families in the sample tank areas, 105 (86%) were reported as settled families and they were interviewed. But the actual number settled in these allotted blocks was 91 families or 75 percent of the total allottees because the people who have not moved in live either in their previously settled highland blocks close to the tank and main road or with their parents as they are not married or separated. These unmarried individuals of the extended family (whether male or female) got titles to a land block, as "exchange" for their contribution to tank rehabilitation and for their stay in the "tank country" for years even prior to tank rehabilitation. With the practice of the adult male member of the extended family being elected as the farmer-lender (chairman of wew-sabha), it was very easy for all the members (including younger unmarried and old members) to get entitlements to the land under the rehabilitated tank.

Unlike in the ADZAP settlements, people here are permanently settled and do not move for "cultivation" only. The families who are settled in the permanent residences along the main road (Anuradhapura-Thanthirimale road near Elayapatthuwa, Thambiyawa and Thanthirimale) have not taken over their allotted plots for residences, mainly because of the short distance, from these plots to the present residences built earlier on encroached land. The tendency is for the second generation of these farmers to take residence in their legal homesteads in the near future. When the unmarried allottees are married or engaged to get married they will take charge of their legal homesteads presently used only for cultivation.

Project Facilities

The land development package of the Board comprised the following assistance components which can be considered as the main project benefits:

1. An allowance of Rs 1,000 for homestead, Rs 250 for market land and Rs 200 for rice land.
2. An allowance of Rs 6,000 for constructing a homestead well.

In addition to these fixed amounts of money as assistance, most of the villages were given a community hall for community activities, with an adjoining room to store fertilizer, agrochemicals, agricultural equipment, and the harvest. Besides these facilities a mobile unit sponsored by the Board was set up to look after the medical needs of the settlers in the project area. In recruiting labor during the tank construction period, priority was given to the farmers belonging to the wew-sabha. On average, a laborer was paid Rs 30 for the delivery of one cube (100 cubic feet) of earth for dam filling and an extra payment was made to the wew-sabha leader or any other person designated as a supervisor of the dam

filling. It was found that one of the young settlers at Pahala Thanthirimale had worked in over 30 tanks as a laborer. Such payments collected by farmers were used by them for their food needs during the restoration period. All the earthwork required for tank construction was done manually by the farmers. The Board provided only materials such as cement and iron, which were not locally available.

The Board's assistance does not cease after the restoration of tanks and resettlement under restored tanks. There is always a follow-up program to ensure the supply of adequate inputs such as seeds and fertilizer, for farmers to make full use of the improved resources. In several instances, the Board has provided some farmers in the Thanthirimale project area with interest-free loans to obtain their agricultural inputs, whilst it has provided some other wed-sabhas with free sprayers. Furthermore, the Board has assisted some farmers to obtain loans from the local banks for the purchase of water pumps to irrigate the uplands.

Other facilities included benefits for women in the project area: the Board has purchased three sewing machines for the women in the Thanthirimale project area.

In general, settlers in the Thanthirimale project area reported they were happy at the way the resources have been used and benefits distributed. Most of the settlers stated that there was a noticeable improvement in agricultural activities as a result of the project. Homestead cultivation has been improved significantly and some farmers have purchased water pumps with the help of the Board. During the past few years the Board has assisted people to construct over 500 wells. Although the water in most wells was reported to be adequate during the maha season some settlers had managed to obtain a small supply of water even during the yala season for cultivating a few crops like chili, cowpea, and vegetables for domestic use.

Although the settlers were generally happy about the project, a number of complaints have been received from them regarding unequal distribution of project benefits and delays in the distribution of such benefits. Some settlers felt they benefited least from the project. The most critical complaint received from the settlers was the delay in payment for the construction of wells. In order to facilitate the construction of wells the Board purchased the necessary equipment such as hoes, crowbars, and buckets, and deducted the cost from the total allowance, giving the balance to the settlers in cash, in installments corresponding to the progress of the work. This procedure has been designed to prevent misappropriation of the money. But the settlers reported that they did not receive this money as and when they needed it. Referring to the delay of payments, they further stated that they could not hire someone to help them in the construction of wells as they could not pay him as soon as the work was completed.

Other complaints included the noncompletion of rehabilitation work of the tanks and the demarcation of the land blocks, which was very critical for land consolidation, and a conflict-free cultivation process. Although the office data showed that 70 percent of the tanks were "complete" in the Thanthirimale project, the settlers have complained of much incomplete work in their tanks. Although the rehabilitation work of some tanks was completed, settlement was not yet completed. In some other tank areas settlement was completed but the restoration work was still incomplete. The project officers often complained that the settlers were not interested in completing the work, and the settlers in turn complained that the project officers were not interested in making the

necessary arrangements to finish the work. This suggests that the work was not sufficiently worthwhile for farmers to do themselves, or that they remained (psychologically) dependent on the FFHC.

The unclear demarcation of Land blocks has also posed another problem. There is much evidence that settlers have disputes among themselves over the land boundaries. Some settlers stated that they had less land than others due to arbitrary changes in the boundaries made by neighbors. And a few other settlers stated that they had problems from encroachers due to the unsolved problem of land demarcation.

The common complaints made by the settlers included the insufficiency of the allowance allocated for land development, well-construction, and earthwork of dam filling. Although farmers thought that the project was carried out by the Board in partnership with the villagers the assistance given to them was often not enough. For instance, they pointed out that they could not hire laborers at the rate allowed by the Board for dam filling, when the labor supplied by the wew-sabha members was not sufficient. They further stated that the allowance for construction of wells was not adequate especially due to the increase in prices of the required equipment.

Another point observed during the survey is that the construction of a wew-sabha building for each and every tank area (in some cases there are only three to six members for one tank area) appears to be a waste of funds, as over 40 percent of the wew-sabha buildings so built were not in use.

Conclusions

THE VILLAGE TANK Rehabilitation Program of the FFHC Board was assessed in this study as an alternative approach to ADZAP as mentioned in the introductory section of this paper. Therefore, the main conclusions made herein attempt to compare the results of this assessment, as far as possible, with those of the ADZAP assessment survey (Ekanayake et al. 1990). The negative and positive features of the FFHC approach will be presented in the order of their importance.

The factor that has contributed to the sustenance of the Thanthirimale tank communities is the importance of upland cultivation, as in the ADZAP tank areas. The striking variation here is that farm families under the FFHC tank areas were fully settled even before and during the rehabilitation process and were available for participatory construction work. Their dependency on their upland blocks, each of 0.6 ha (1.5 acres), was quite apparent and their involvement in chena has been reduced to a negligible minimum. Before the project, the dependency of farmers on chena was very high. It was reported that 14 percent of the surveyed farmers depended solely on chena while over 70 percent of the farmers were involved in chena as a part of their livelihood along with upland and rice cultivations. Now, chena is not a part of their livelihood and over 95 percent of the farm families claimed upland cultivation (including homestead) as their main source of income. With the advent of land consolidation, chena cultivators of these tank areas have given up chena cultivation and have become stabilized as settler families. The cropping intensity is greater than under ADZAP as far as homestead farming of the FFHC program is concerned (in ADZAP, instead of specified homesteads and market gardens, there is highland); in homesteads of the FFHC program it is over 100 percent during maha and 60 percent during yala as most of the farm families have established permanent perennials together with annual and biannual crops; in market-garden blocks, however, the average cropping intensity is 75 percent for maha and 50 percent for yala (corresponding ADZAP figures for upland being 74 percent for maha and 51 percent for yala) which appears to be more or less the same.

The cropping intensity in irrigated cultivation in the command area is 22 percent for maha, taking the one to three seasons cultivated between 1981 and 1988, where no yala cultivation has taken place.⁴ The command areas of the FFHC tanks (as was the case in ADZAP tank areas) too have been increased arbitrarily

⁴ During the recent visits by the authors (October 1990), however, it was found that some farmers have cultivated in the head-end portion under some of the sample tanks during yala 1990.

without carrying out the necessary irrigable area survey, catchment area survey, and so on, resulting in only one half of the command area (0.4-ha [1-acre] block for each farmer in the old field) being cultivated during the rainy maha Seasons, whilst the extended command areas remained "uncleared" or "undeveloped."

The actual number of settled farm families, 75 percent of the selectees under the FFHC tanks, is very high compared to the mere 20 percent of the selectees of ADZAP tanks. This figure will be 86 percent when the unmarried youths (who live with their parents at present) are also taken into account. Implementing the FFHC tank settlement process has been an easier task for the project authorities because the project has picked up tank areas with some settlers "occupying" them, and it has not selected any totally abandoned tanks for rehabilitation. Therefore it can be concluded, as far as the settlement aspect is concerned, that FFHC is a better alternative to ADZAP. The participatory-labor-contribution approach adhered to under the FFHC program has undoubtedly affected this positive achievement. The settlers have much appreciated the project facilities (e.g., dug wells, seed, and credit) provided for them despite the fact that the provision of some of them has been delayed.

Although the Board has spelled out a selection process for tanks, at the implementation stage it has not adhered to that process; having deviated from its criteria it has selected a large number of small tanks each benefiting less than 10 farm families, based primarily on the request of the Chief Incumbent of Thanthirimale vihara and/or farmers groups. However, there is a positive impact on these small tanks each with 3-10 farmers as the beneficiaries belong to one extended family or one clan of relatives known to each other. This is in contrast to ADZAP settlements where people from different social groups from far away places have been alienated land resulting in a very low degree of settlement and a high degree of social conflicts.

Through this assessment survey, a number of positive and negative features of the FFHC program could be identified, apart from the above conclusions. The positive features observed in the present study are:

- a) The program is an attempt to rally farmers around a common goal in the form of a wew-sabha, the council established to organize farmers, to implement the Tank Rehabilitation Program and the overall system management.
- b) It is a kind of solution to the "landlessness" or "encroachment" problem, by which ownership of 0.8 ha (2 acres) of rice land and 0.6 ha (1.5 acres) of highland per farm family was given to a target group through a process of land consolidation which is a step toward agrarian reform.
- c) It maximizes the use of local resources, particularly human resources, in the form of participatory manual labor in contrast to the use of heavy machinery by other interventions.
- d) The package program, which includes part payment for labor, a land block of 1.4 ha (3.5 acres), assistance to develop the land, construction of wells and provision of planting materials (saplings), and credit facilities for cultivation, has made a tremendous impact on a group of ex-chena cultivators; it has contributed to the abandoning of chena cultivation by these cultivators and their taking to fast resettlement.

In contrast to the above positive features there are also negative effects inherent in the program, as a result of its "blue-print" type approach. These factors are:

- a) The wew-sabha system of farmer organization has been introduced to the tank-based communities as a top-down imposition and as a "prototype" forum, rather than being the natural outcome of farmers' spontaneous efforts (bottom-up), resulting in inefficient and/or malfunctioning wew-sabhās comprising very small farmer groups (e.g., three to six farmers in one wew-sabha).
- b) Nonadherence to the stated "selection process" resulting in the construction of very small nonfeasible tanks with very small command areas and with few beneficiaries (e.g., of the total of 70 tanks 31 have less than 10 beneficiaries and 13 tanks have only 3-5 families).
- c) The participatory-labor-work plus the bureaucratic control of the project activities have caused unnecessary delays in the completion of different stages of construction. For instance, on average, the tank construction process has taken more than 3 years to complete 100 percent development work; furthermore, in a number of tanks, about 10-15 percent of the work is left unattended even 5-8 years after project commencement.
- d) Although "official" steps have been taken to promote aspects like agricultural extension and crop management they have not been reflected in an acceptable manner throughout the project area, as indicated by the rather irregular pattern of cropping systems particularly in upland farms; also other field crops have never been tried out in the lowland plots either for maha or yala.
- e) The project lacks a strong monitoring and accounting system enabling timely receipt of project inputs. While the monitoring and accounting systems of other "blue-print" type projects are quite strong (e.g., IRDPs, VIRP), the FFHC Board's program is very weak. This has caused delays in providing benefits and other inputs to the farmers and has possibly led to a certain degree of corruption at the district level, according to the field-level sources.

The Thanthirimale Tank Rehabilitation Project is the first project of its nature implemented by the FFHC Board, beginning as early as 1979, and thus it is liable to have shortcomings. Subsequently, the Board, having gathered much experience over the past 10 years, has modified its assistance strategy into a more dynamic one for future projects.

All in all, the Tank Rehabilitation Program implemented by FFHC in Thanthirimale appears to be a better alternative to ADZAP. Although the FFHC program has a number of negative features, the positive results can be made use of in other assistance programs (governmental organizations or nongovernmental organizations) with certain modifications. However, system sustainability through farmer-management after FFHC assistance is withdrawn is something yet to be proved.

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Annex

SURVEY QUESTIONNAIRE

Assessment Survey on the Freedom From Hunger Campaign (FFHC) Board's Tank Rehabilitation Program

Date:-

Team:- 1.
2.

Part I - (Source: FFNC project officers/files)

A) Background Information'

1. Name of the project: _____

2. Location: _____
Electorate _____
A.G.A. Division _____
G.S. Division _____

3. Command Area: _____

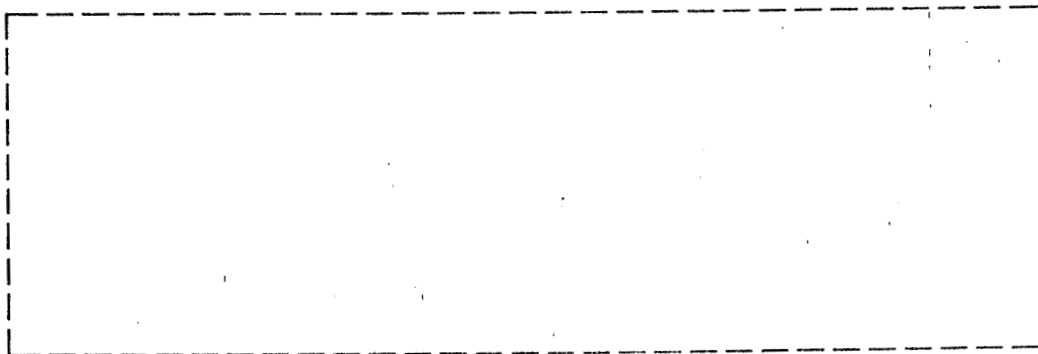
a) Pre-project _____ acres
b) Post-project _____ acres

4. Year started _____ Year completed _____

i. Bund _____
ii. Land allocation _____

5. NO. of families settled: _____

6. Sketch map of the tank area (tank including structures, command area and catchment area).



B) Tank Construction

1. Who selected the tank for renovation?

- a) Farmers
- b) FFHC office
- c) Political leaders
- d) Other

2. How did you contact the prospective farmers?

- a) Directly
- b) Through the Grama Sevaka
- c) Other

3. Did you have any meetings with farmers before starting the project? Yes/No

a) If yes, when and where?

Date: _____ Place: _____

b) Who attended these meetings?

c) Topics discussed:

4. What are the problems you encountered in contacting farmers?

- a)
- b)
- c)

5. Tank situation (before project)

Bund	Conditions	_____	_____
		Right	Left
Sluice	Type/Size	_____	_____
Spill	Type/Size	_____	_____
Catchment area			
Size	_____		
Vegetation	_____		

6. Tank situation (after project)

Bund	Length	_____	_____
		Left	Right
Sluice	Type/size	_____	_____
	Level of operation	_____	_____
Spill	Type/size	_____	_____
Catchment area			
Size	_____		
Vegetation	_____		

	Cons		Major items constructed	Amount of earthwork (in cubic feet)
	Began	stition		
Manual labor of farmers		Ended		
FFHC field workers				
workers				

i). Assistance to land development:

	Acreage		Assistance given		Plants received	
	Planned		Planned	Actual	Planned	Actual
Rice						
Homestead						
Market land						

i). Cultivation well:

Assistance given

In kind
In cash
Total

iii). Other assistance:

Value in rupees

Water pump
Seeds

iv). Community facilities:

Value in rupees

Community hall
Other

Part II - Source: Fanners

A. Background Information

1. Name of the farmer:
2. Total no. in the family:
3. Total no. employee:
4. No. employed in off-farm sector:

B. Settlement

1. How did you come to know about the tank?
2. When did you first move here?
3. Reason/s for migration
 - i). Land for cultivation
 - ii). Land for settling
 - iii). Land for both cultivation and settling
 - iv). As a refugee
4. What is your place of origin?
 - i). Same village
 - ii). Same G.S. division
 - iii). Same electorate
 - iv). Same district
 - v). Adjacent district
 - vi). Other
5. What happened to your properties (land, house) in the original village?
6. How many families are living in the village at present?
7. Have all of these families settled in the village at present? Yes/No
If not, why?
8. Did they come here with you at the same time? Yes/No
If not, when did they come?
9. Did you know them before you came here? Yes/No
If yes, how?
10. Are there any outsiders other than selected settlers in your village?
Yes/No
If yes, how did they come?
When?
11. Are all the families related to each other? Yes/No
If not, how do you feel about them staying here?

C. *Farmers' Knowledge of the Project*

1. How did farmers come to know about the FFHC project?

- i). From FFHC officers
- ii). From the Grama Sevaka
- iii). From the neighboring villagers
- iv). From the political leader
- v). Other

2. Who requested the FFHC assistance?

- i). The villagers
- ii). The Grama Sevaka
- iii). The political leader
- iv). Other

3. Were there any meetings held among farmers before starting the project?

Yes/No

If yes, who organized them?

Who attended?

What decisions made?

4. When was work started? Year: _____

5. When was work completed? Year: _____

6. What type of work did farmer3 do under the project?

7. Who attended the work?

- i). Settlers
- ii). Outsiders
- iii). Settlers and outsiders

8. What was the payment given for your labor?

Value in rupees

- a) Per cube - - - - -
- b) Per day - - - - -
- c) Total received - - - - -

9. Who organized the earthwork?

10. Who organized the construction work?

11. Did you have any assistance from FFHC other than tank renovation? Yes/No.

12. Other assistance

i). Assistance to land development:

	Acreage alienated		Assistance given		Plants received	
	Planned	Actual	Planned	Actual	Planned	Actual
Rice						
Homestead						
Market land						

ii). Cultivation well:

Assistance given

In kind

In cash

Total

iii). Other assistance:

Value in rupees

Water pump

Seeds

iv). Community facilities:

Value in rupees

Community hall

Other

D. Agriculture

1. Size of the landholding

Before project

After project

Rice

Highland

Other

2. Was there any disagreement among farmers when allocating land after the project? Yes/No

If yes, describe.

3. What was the cropping pattern on this land before the project?

i). Chena

ii). Chena and highland cultivation

iii). Chena, highland and rice

iv). None,

4. What is the present cropping pattern on this land?

i). Rice and highland

ii). Highland only

iii). Rice and homestead

iv). Highland including homestead

5. Do you still practice chena? Yes/No
If yes, extent: _____ acres
6. How many seasons have you cultivated since the project was started?
7. Have you lands outside the project? Yes/No
If yes,
 - i). How many acres do you have?
 - ii). Where is the land?
 - iii). Who cultivates it?

E. Irrigation

1. Who operates the sluice gate?
 - i). Who is supposed to do it?
 - ii). Who actually does it?
2. How is water shared among the farmers?
3. Is there any bethma cultivation? Yes/No
If yes, explain.
4. Is there a leader for your village? Yes/No
If yes,
 - i). What is the relationship with you?
 - ii). What does he do?
 - iii). How was he selected?
 - iv). Why was he selected?
 - v). Did he serve you as the farmer leader prior to the project?
5. Who does the tank/channel maintenance after the project?
 - i). How do they do it? Tank/ sluice canal
 - ii). Who organized it? Supposedly actually
 - iii). Adequacy of maintenance (sustainability)
6. Is there any difficulty to irrigate your allotment now?
Yes/No
If yes, explain.
7. Are you satisfied with the overall project design?

F. *Social Cohesion*

1. Do you have other meetings except wew-sabha? Yes/No
If yes, name them:

- i) .
- ii) .
- iii):

2. Where do you hold these meetings?
Who are the members?

3. Is the community hall being used for meetings? Yes/No
If not, why?

Comments :