

10.1.4 Scheme for Improvement of Agricultural Training System

(1) Background and Scheme Description

There exist in Gampaha district a Walpita District Training Center and an Ambepussa District Training Center under the jurisdiction of the Education and Training Division of the Agriculture Department. These centers provide one day, one week and one month courses for groups of 5~90 farmers and extension workers. At each center, 30~40 groups are trained per year for a total per institution of 1,100~1,500 graduates (see Tables 10.1.4.1~2).

However, during the Maha (April~May) and Yala (July~August) seasons, long-term trainee groups (1 month) and short-term trainee groups (1 day~1 week) coincide in timing and current center facilities, particularly classroom number, are inadequate to provide proper training.

Furthermore, overnight accommodations are limited to approximately 30 persons, placing severe restraint on enrollment capacity. Said present capacity is not sufficient to respond to current demand for the subject courses, particularly among youths from farm households.

Also, course timing and cropping season at the training farm often do not coincide, preventing enrollees from participating in practical farming exercises. Field grading and irrigation facility construction will be carried out for the training farm to permit practical application for all courses.

Farmer training at the centers is aimed primarily at youth groups. Under the previously discussed ATDT scheme, training, extension and observation opportunities will be offered to current farmers.

(2) Scheme Scale

Components to be strengthened consist of training farms and center facilities.

Table 10.1.4.1 1986 Training Accomplishment at
Walpita District Training Center

| Month | Subject | Gov. officer | | Seed Farmers | | Students | | Youths | | Total | | Remarks |
|-----------|---------------------------------|--------------|-----|--------------|-----|----------|-----|--------|-----|-------|-----|-----------|
| | | days | No. | days | No. | days | No. | days | No. | days | No. | |
| January | Home-gardening Dairy, Cattle | | | | | | | 12 | 14 | 12 | 14 | |
| | | | | | | | | 12 | 5 | 12 | 5 | |
| February | Pest control | 6 | 58 | | | | | | | | | KVSS |
| | Dairy, Cattle | | | | | | | 28 | 5 | 28 | 5 | |
| | Pre-seasonal Training | 3 | 26 | | | | | | | 3 | 26 | SNO/AJI |
| March | " | 2 | 289 | | | | | | | 2 | 289 | AJI/KVSS |
| | Family Planing | | | 3 | 90 | | | | | 3 | 90 | |
| April | Pest control | 14 | 25 | | | | | | | 14 | 25 | SNO/AJI |
| | Use of fertilizer | 1 | 35 | | | | | | | 1 | 35 | |
| May | Pest control | 4 | 116 | | | | | | | 4 | 116 | AJI/KVSS |
| | Nursery management | | | 4 | 29 | | | | | 4 | 29 | |
| June | General Agriculture | 7 | 36 | | | | | | | 7 | 36 | CO |
| | Home-gardening | | | | | | | 7 | 10 | 7 | 10 | |
| July | Pre-seasonal Training | 4 | 82 | | | | | | | 4 | 82 | SNO/AJI |
| | General Agri. | 7 | 36 | | | | | | | 7 | 36 | CO |
| | Home-gardening | | | | | | | 5 | 9 | 5 | 9 | |
| | Fruit cultivation | | | | | | | 5 | 12 | 5 | 12 | |
| August | Cooking | 2 | 275 | | | | | 7 | 18 | 7 | 18 | |
| | Pre-seasonal Training | 6 | 53 | | | | | | | 2 | 275 | AJI/KVSS |
| | General Agri. | | | | | | | | | 6 | 53 | Teachers |
| September | Pest control | 4 | 57 | | | | | | | 4 | 57 | SNO/AJI |
| | Home-gardening | | | | | | | 3 | 22 | 3 | 22 | |
| | Dairy, Cattle | | | | | | | 3 | 22 | 3 | 22 | |
| October | Fruit cultivation | 3 | 48 | | | | | | | 3 | 48 | SNO/AJI |
| | Home-gardening | | | | | | | 4 | 38 | 4 | 38 | |
| | Soya food preparation | | | | | | | 1 | 23 | 1 | 23 | |
| November | Pest control | 6 | 38 | | | | | | | 6 | 38 | KVSS/AJI |
| | General Agri. | | | | | | | 110 | 17 | 110 | 17 | (Nov~Jan) |
| | Home-gardening | | | 2 | 15 | | | | | 2 | 15 | Women |
| December | General Agri. | | | | | | | | | | | |

Table 10.1.4.2 1986 Training Accomplishment at
Ambepussa District Training Center

| Month | Subject | Gov. officer | | Seed Farmers | | Students | | Youths | | Total | | Remarks |
|-----------|-------------------------------------|--------------|-----|--------------|-----|----------|-----|--------|-----|-------|-----|-------------------|
| | | days | No. | days | No. | days | No. | days | No. | days | No. | |
| January | Pest control | | | 1 | 7 | | | | | 1 | 7 | |
| | Bee keeping | | | | | | | 5 | 10 | 2 | 10 | |
| February | Bee keeping | | | | | 1 | 40 | | | 1 | 40 | |
| | Home-gardening | | | | | | | 1 | 10 | 1 | 10 | |
| March | Mechanizing | | | 3 | 31 | | | | | 3 | 31 | |
| April | Mechanizing | 1 | 14 | | | | | | | 1 | 14 | KVSS Bujjagoda |
| | Home-gardening | | | | | | | 3 | 25 | 3 | 25 | |
| May | General Agriculture | | | | | 7 | 19 | | | 7 | 19 | boys |
| | Bee keeping | | | | | 3 | 10 | | | 2 | 10 | boys |
| June | General Agri. | | | | | 30 | 20 | | | 30 | 20 | girls |
| | " | | | | | 1 | 32 | | | 1 | 32 | " |
| July | General Agri. | | | | | 30 | 19 | | | 30 | 19 | girls |
| | " | | | | | 1 | 50 | | | 1 | 50 | |
| | Use of Farm implement | | | | | 1 | 30 | | | 1 | 30 | |
| August | General Agri. | | | | | 9 | 19 | | | 9 | 19 | -SL |
| | " | 5 | 18 | | | | | | | 5 | 18 | Teachers |
| | " | 5 | 18 | | | | | | | 5 | 18 | " |
| September | Seed production | | | 1 | 23 | | | | | 1 | 21 | Gampaha/paddy |
| | " | | | 1 | 28 | | | | | 1 | 28 | " |
| | Bee keeping | | | | | | | 5 | 23 | 5 | 23 | -SL |
| October | General Agri. | | | | | | | 24 | 20 | 24 | 20 | Mirigama |
| | Seed production | | | 1 | 35 | | | | | 1 | 35 | Gampaha |
| | " | | | 1 | 23 | | | | | 1 | 23 | Walpita |
| | " | | | 1 | 27 | | | | | 1 | 27 | " |
| | General Agri. Nursery management | | | | | 1 | 105 | | | 1 | 105 | |
| November | General Agri. | | | | | | | 29 | 20 | 29 | 20 | girls |
| | Seed production | | | 1 | 22 | | | | | 1 | 22 | Walpita |
| | " | | | 1 | 25 | | | | | 1 | 25 | Gampaha |
| | " | | | 1 | 36 | | | | | 1 | 36 | Mahara |
| | " | | | 1 | 10 | | | | | 1 | 10 | " |
| | General Agri. | | | | | 1 | 47 | | | 1 | 47 | |
| | " Nursery management | | | | | 1 | 53 | | | 1 | 53 | |
| December | General Agri. | | | | | 29 | 20 | | | 29 | 20 | Girls |
| | " | | | | | 1 | 54 | | | 1 | 54 | |
| | Seed production | | | 1 | 26 | | | | | 1 | 26 | Mirigama |
| | Home stead development | | | 1 | 25 | | | | | 1 | 25 | wives |

Practical training will center on upland crops, including vegetables, fruits, and minor export crops. Vegetable fields and irrigation facilities will be prepared for training farms. Farm roads will also be necessary to facilitate training and demonstration activities.

Classroom, sleeping accommodation and workshop facilities will likewise be newly constructed or strengthened as required. Training equipment and materials to be provided include audio-visual and other educational equipment, farm equipment, audio-visual equipment, laboratory equipment, and copy machines, typewriters and other office equipment.

Vehicles will also be supplied.

Envisioned scheme scale is as follows:

Table 10.1.4.3 PROPOSED FACILITIES AND EQUIPMENT

| Scheme components | Walpita DTC | | Ambepussa DTC | |
|-------------------|---------------------|---------------------------|--------------------|--|
| | Present | Planned | Present | Planned |
| 1. Training farm | | | | |
| Cultivated area | 3.0ha | 3.2ha (vegetables) | 2.5ha | 0.9ha (new) and ATDTC farm (5.8ha) |
| Irrigated area | - | 2.2ha | - | 6.7ha |
| Pipeline length | - | 880m | - | - |
| Sprinkler | - | 1 set | - | 1 set |
| Water source | Shallow well (2) | Shallow well (1) (new) | Maha Oya | Maha Oya Shallow well (1) (new) |
| Conveyance pipe | 780m | 500m Ø50mm (new) | 540m | 550m Ø100mm 400m Ø50mm (new) |
| Storage tank | 80m ² | 48m ² (new) | 13.5m ² | 20m ² (new) |
| Farm road | - | 640m | - | - |

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| Scheme components | Walpita DTC | | Ambepussa DTC | |
|--------------------------------------|---------------------------------------|---|---------------------------------------|---|
| | Present | Planned | Present | Planned |
| 2. Training facilities | | | | |
| Classrooms | 300m ² (rehabilitation) | 450m ² (new) | 350m ² (rehabilitation) | 450m ² (new) |
| Accommodations (including kitchen) | 658m ² | 874m ² (new for 60 persons) | 400m ² | 874m ² (new for 60 persons) |
| Workshop | - | 225m ² (new) | - | 225m ² (new) |
| Farm equipment shed | - | 250m ² (new) | - | 250m ² (new) |
| 3. Training equipment | | | | |
| Home science equipment | - | 1 set | - | 1 set |
| Deep freezer (seed storage) | - | 1 set | - | 1 set |
| Refrigerator (animal drugs) | - | 1 set | - | 1 set |
| Audio-visual & teaching equipment | - | 1 set | - | 1 set |
| Field equipment (farm equipment) | - | 1 set | - | 1 set |
| Horticulture equipment | - | 1 set | - | 1 set |
| Work shop tools & wood working tools | - | 1 set | - | 1 set |
| Lab. equipment | - | 1 set | - | 1 set |
| Typewriter & copy machine | - | 1 set | - | 1 set |
| 4. Vehicles, others | | | | |
| Mini-bus (35 persons) | - | 1(0) | - | 1 (0) |
| Jeep | 1 | 1 (additional) | 1 | 1 (additional) |
| Motorcycle | - | 1 (90cc) | - | 3 (90cc) |
| Phone facilities | - | 1 set | - | 1 set |

Note: On the basis of consultations with MPI and requirements for integrated rural development, mini-buses deployed at Project Office will be utilized. Mini-buses will be accordingly not be stationed at DTC. In consideration of fuel cost and intended function, motorcycles are to be 90cc.

(3) Operation and Maintenance

The concerned district training centers under the Education and Training Division of the Agricultural Department will execute operation and maintenance under the scheme. However, given the imperatives of integrated rural development, said operation and maintenance activities should be carried out in close concert with the Project Office and agricultural technology demonstration and transfer scheme. Toward this end, close liaison should be maintained between the Project Office and the training centers, with the latter reporting regularly on operation and maintenance procedures. It is particularly important to incorporate the fruits of the demonstration and transfer scheme into the subject educational and training program.

10.1.5 Morenna Model Irrigation Scheme

(1) Background and Scheme Description

The Morenna area possesses a total catchment area of 195km², of which 4.53km² is irrigated. Water source is the Attanagalu oya, from which discharge is diverted at 3 anicuts. On-farm irrigation is performed in a haphazard manner by means of pipe holes (more than 80 locations) opened in the sides of earthen canals. Diversion and water conveyance facilities exhibit marked superannuation as they were constructed some 50 years ago. This superannuated condition places severe constraints on capacity for planned water management. (Scheme location is indicated in Design Drawings No. 1 and 2.)

This priority scheme envisages introduction of upland crops during the dry season (Jan. ~ Mar.). During this period rainfall is scarce and the discharge of the Attanagalu oya drops to its lowest level. In order to permit dry season cropping, irrigation facilities must permit effective control and management of diverted water. In addition to rehabilitation of said facilities, O/M roads along canals will be constructed to further ensure efficient operation and maintenance of the system.

Rehabilitated facilities will permit introduction of upland crop, and along with the demonstration farm to be constructed in the future in the

sector, will serve as a model to farmers regarding appropriate standards for irrigated agriculture.

A scheme description is presented in the table below.

**Table 10.1.5.1 Proposed Facilities for Moreenna
Model Irrigation Scheme**

| Type of facility | Works | Quantity | Remarks |
|------------------|---|------------------------------|---|
| Water source | Anicut rehabilitation | 2 locations | Moreenna, Paluoya Anicut. |
| | Embankment | L = 420m | B = 2.0m, Hmax = 1.0m |
| Irrigation | Main, branch canals | 9,392m | R.B.CH..4480m, M.CH..1,040m L.B.CH..3872m |
| | Appurtenant works: Division works Crossing structures | 29 locations 16 locations | Drainage canal crossing: 9 Road crossing: 7 |
| | Drops | 8 locations | |
| Drainage | Cross-section modification | 2,450m | 1900m + 550m |

(2) Scheme Scale

1) Irrigated Area

Irrigated area under the subject scheme is 392.3 ha. 61 ha of the total 453.3 ha under irrigation in the Moreenna area have not been included as this portion is not irrigated by anicut.

2) Anicut Rehabilitation

Of the 3 existing anicuts, the two at Moreenna and Paluoya will be torn down and reconstructed. The Pathakada anicut will remain as is. Design location for newly constructed anicuts is directly upstream of existing ones, and design water level and intake location will remain unchanged.

As the benefit area of the present Pathakada anicut may be served by extension of existing canal from the other anicuts, diversion from the Pathakada anicut is not envisioned under the

scheme. Operation and maintenance will accordingly be performed for the two newly constructed anicuts only.

3) Raising of Embankment

The left bank embankment on the upstream Morenna connects with the right bank embankment of the Paluoya for a total length of 660m. Of this total 420m of embankment lacks sufficient height by about 1m. In conjunction with anicut reconstruction, said embankment will also be raised to prevent flooding. Crest width is designed at $B = 2.0\text{m}$ to allow for crest functioning as an operation and maintenance road. This road will facilitate gate operation at Morenna and Paluoya anicuts.

4) Canal Rehabilitation

a) Guidelines and Extent of Rehabilitation

Existing canals are earthen and exhibit marked side collapse. As a result, canal width is greater than necessary, and much leakage occurs. Longitudinal profile is a gentle gradient.

Rehabilitation guidelines under the scheme are as follows:

- ① Canal route will follow existing route to the extent possible
- ② Canals will be lined. However, farm ditches will remain earthen. Pipeline will not be used in consideration of operation and maintenance factors.
- ③ Canal width will be reduced by lining, and bank crest of canal will function as an operation and maintenance road ($B = 2.0\text{m}$)
- ④ Only main canal will be rehabilitated. Secondary canal will not be included for rehabilitation under the scheme.

b) Longitudinal Profile

Present canal gradient is $1/1,000 \sim 1/6,000$. Field surface elevation is EL 10.0 ~ 14.10m. Design canal

water elevation is field surface elevation + 30cm. Longitudinal profile will be determined taking into consideration drops and division works locations, discharge velocity, etc.

c) Irrigation Plan

① Design unit discharge is based on the proposed cropping pattern and calculated at $q = 2.6 \text{ l/s/ha}$.

② Design discharge will take into consideration benefit area not presently serviced by canal.

③ Irrigation system and irrigation block:

The present 80 or more division works will be consolidated to 29 locations. Average irrigated area per block will be 13.5 ha. (This is illustrated in Fig. 10.1.5.2.)

d) Lining

Concrete, crushed stone and brick lining were compared and brick type lining determined as the most cost effective.

5) Appurtenant Structures

a) Division works

Division works located on main canals will be double orifice. The two gate structure will facilitate discharge regulation.

b) Water Level Regulating Works

Regulating works will be included at division works and drops to permit maintenance of a constant water level. They will also be situated at junctures of main and secondary canals. Said works will consist of manual sluice gates.

c) Washing and Bathing Area

Washing and bathing areas will be maintained at existing locations and newly established at drop sites.

Scale will be as permitted by canal structure dimensions. Structure is to be reinforced concrete.

d) Crossing Works

Pipe aqueduct is to be utilized at drainage canal crossing points. Abut and pier rehabilitation will be carried out. Nine locations will be subject to rehabilitation.

At road crossing points, structures with adequate cross-section will be utilized as is. Where cross-section is insufficient, structures will be removed and newly reconstructed.

e) Drops

Drops will be constructed where required in consideration of topography and division works sites. Drops will incorporate functions of water level control, and as washing/bathing area sites. On the basis of design discharge for the scheme, drops are to be of the perpendicular type.

6) Discharge

Many of the drainage canals within the Morenna area also function as irrigation canals as well. Drainage canals empty into the Attanagalu oya. Present water level of the Attanagalu oya is largely determined by gate operation. The Morenna area is furthermore within the back water of the Ketawala anicut downstream. The Morenna scheme is consequently affected by a catchment wide drainage problem.

Drainage works under the scheme will be directed at the following:

① As the scheme area is flat, drainage works will be carried out for those areas which are constantly inundated.

② Although adequate head is present at lower reaches of canals, upper reaches at some locations exhibit excessively narrow canal cross-section and reverse gradient preventing proper drainage. At these locations, cross-section and gradient will be appropriately modified.

③ Location and length of sections to be rehabilitated

R.B Branch Channel: downstream portion earthen farm ditch ($\ell = 1,900\text{m}$)

Mid. Channel: initial portion earthen farm ditch ($\ell = 550\text{m}$)

(3) Operation and Maintenance

The subject scheme proposes to establish a water management system through which may be provided guidance in farm management as well as on-farm level water management. This objectives will be implemented by the following entities:

| | |
|---|---------------------------------------|
| Establishment of a water management system: | Irrigation Office |
| Guidance in farm management: | Agrarian Service Extension Service |
| On-farm level water management: | Farmers' groups |

Operational guidelines will follow those of the ATDT scheme.

Fig. 10.1.5.1 Morenna Model Irrigation Scheme, Location Map

| Channel Length (m) | | Name of Channel | | Length | |
|----------------------|----------------|-----------------|--|----------|--|
| ANICUT BANK | | MAIN | | 3325.5 | |
| MORENNA | R. B. BRANCH-1 | MAIN | | 700 | |
| | " - 2 | MAIN | | 456.6 | |
| MIDDLE BRANCH | MAIN | | | 800 | |
| | MAIN | | | 3072 | |
| PALUYA | L. B. BRANCH | | | 800 | |
| | | | | 9321.1 | |
| Total Irrigable Area | | | | 453.3 ha | |
| | | | | 392.3 ha | |

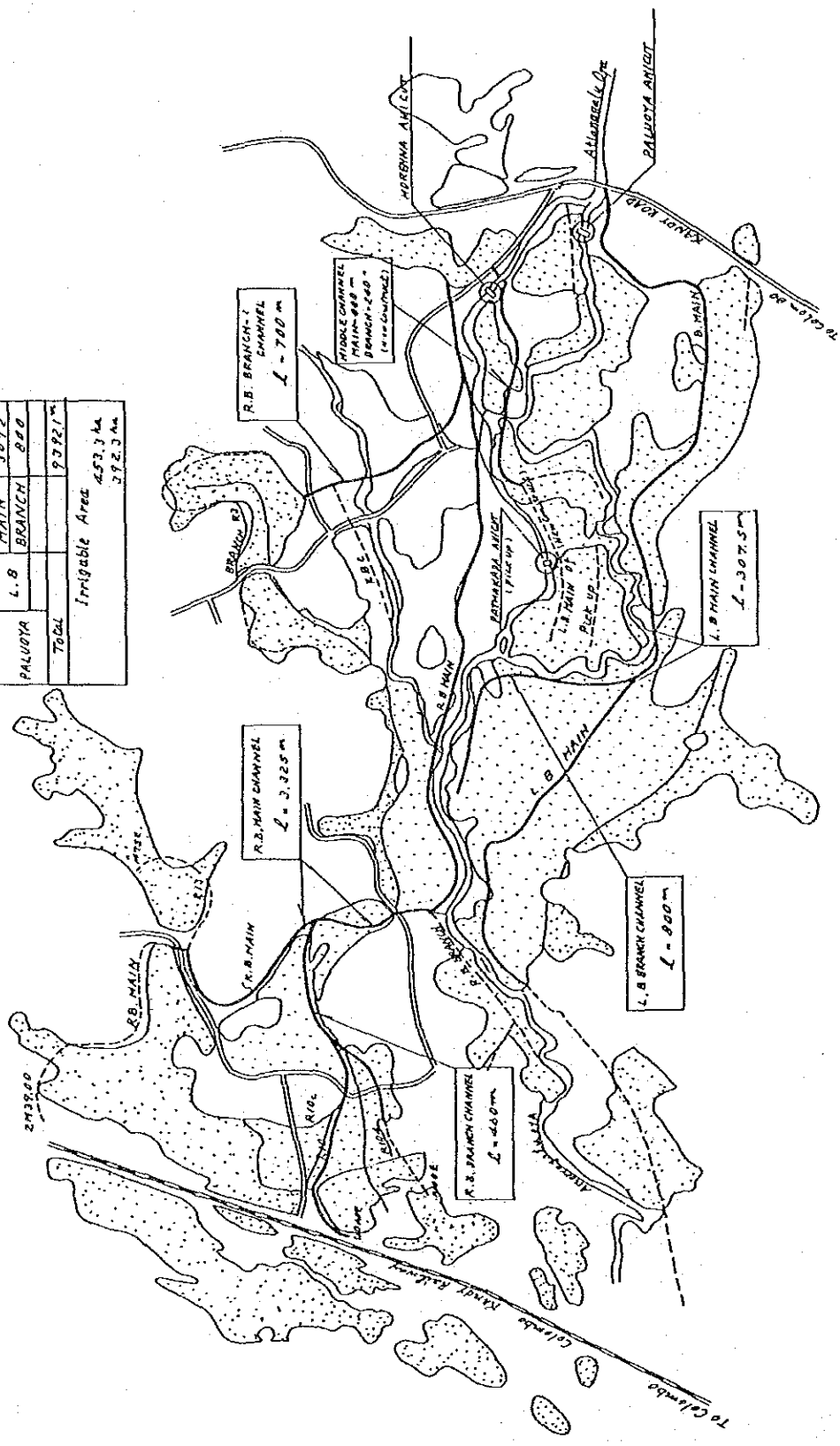
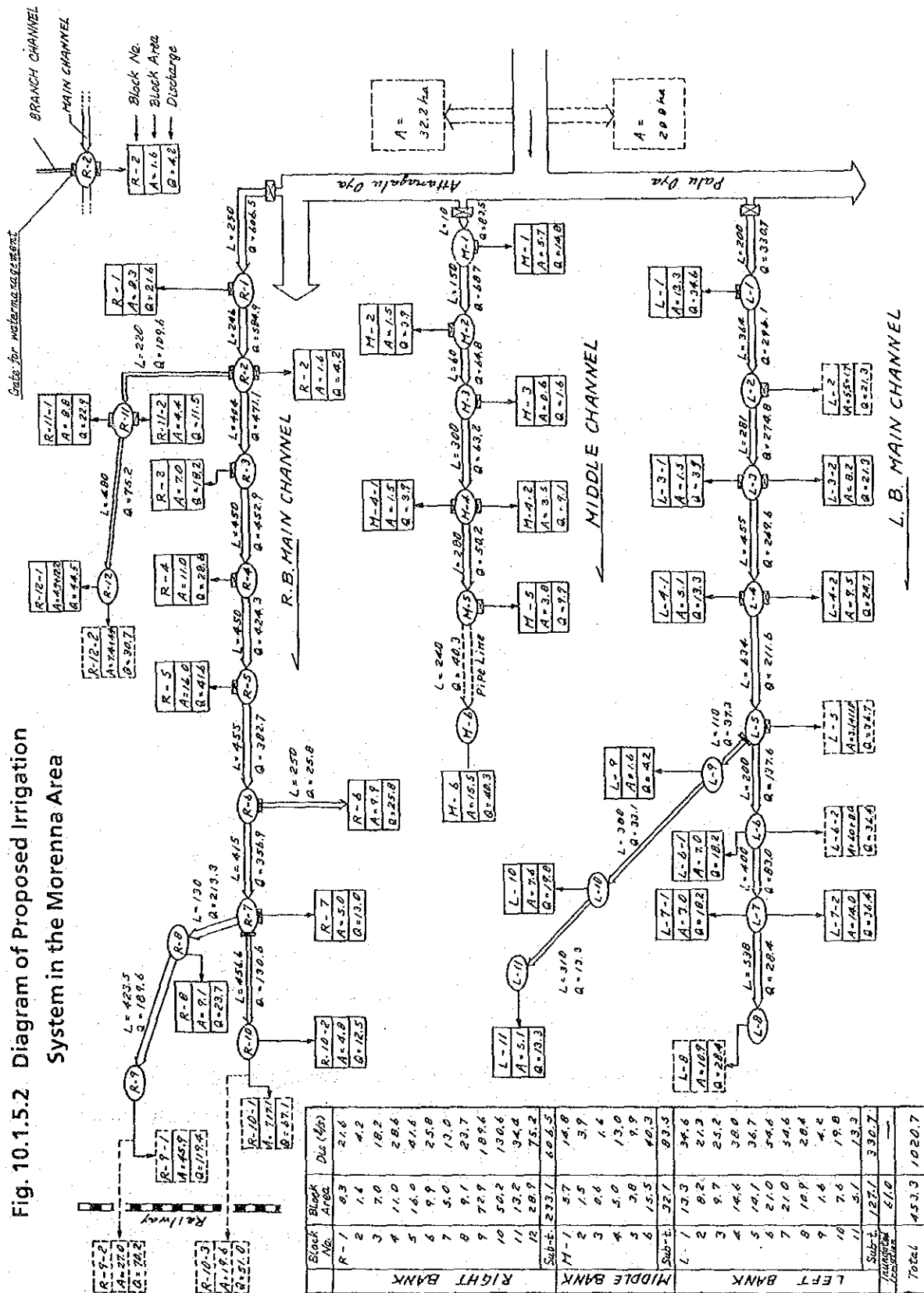


Fig. 10.1.5.2 Diagram of Proposed Irrigation System in the Morena Area



| Block No. | Block Area | Dis. (cfs) |
|------------|------------|------------|
| R-1 | 8.3 | 21.6 |
| 2 | 1.4 | 4.2 |
| 3 | 7.0 | 18.2 |
| 4 | 11.0 | 28.6 |
| 5 | 16.0 | 41.6 |
| 6 | 9.9 | 25.8 |
| 7 | 5.0 | 13.0 |
| 8 | 9.1 | 23.7 |
| 9 | 72.9 | 189.4 |
| 10 | 50.2 | 130.6 |
| 11 | 13.2 | 34.4 |
| 12 | 28.9 | 75.2 |
| Sub-t. | 233.7 | 602.5 |
| M-1 | 5.7 | 14.8 |
| 2 | 1.5 | 3.9 |
| 3 | 0.6 | 1.4 |
| 4 | 5.0 | 13.0 |
| 5 | 3.8 | 9.9 |
| 6 | 15.5 | 40.3 |
| Sub-t. | 32.1 | 83.3 |
| L-1 | 13.3 | 34.6 |
| 2 | 0.2 | 0.5 |
| 3 | 9.7 | 25.2 |
| 4 | 14.6 | 38.0 |
| 5 | 14.1 | 36.7 |
| 6 | 21.0 | 54.6 |
| 7 | 21.0 | 54.6 |
| 8 | 10.9 | 28.4 |
| 9 | 1.6 | 4.2 |
| 10 | 7.6 | 19.8 |
| 11 | 5.1 | 13.3 |
| Sub-t. | 127.1 | 330.7 |
| Transverse | 61.0 | — |
| Total | 453.9 | 1020.7 |

10.2 Development of Human Resources

The project for development of human resources entails strengthening of educational and vocational training facilities.

(1) Background and Project Description

Gampaha district has placed emphasis on the education of its population, and school enrollment and literacy rates are among the highest in the country. Nevertheless, drop-out of students from the school program is sizeable, with 70% reportedly failing to finish secondary school.

Despite the location of the GCEC area within the district and the district's proximity to Colombo, the unemployment rate is 26.9%, or twice the national average. The major portion of these unemployed fall into the 15 ~ 35 year old age bracket, 80% of which have attained an educational level equivalent to completion of secondary school. In order to provide said unemployed with job opportunities, it appears necessary to inculcate basic knowledge in sciences as preparation for employment in industry. Consequently, in order to so prepare the youth of Gampaha in particular, the science curriculum in the school system requires upgrading.

In accordance with the directives of the Government, Gampaha district has introduced the cluster system and establishment of centrally important core schools. Under the subject Project, facilities at these schools relevant to the science curriculum will be strengthened.

The location of the 26 core schools and facilities requiring strengthening are indicated in Design Drawing No. 31.

(2) Project Scale

Facility and equipment strengthening will be carried out with regard to the science (physics, chemistry, botany, zoology, etc.), agricultural and home science curricula.

Facility improvement will include construction where necessary of new school buildings and classrooms. Rooms where science and laboratory equipment are to be placed must be such that they may be secured after school hours (windows must have glass, etc.).

Standard school structures currently recommended by the Government are as follows:

- a) Science classroom building: 2 story with chemistry and zoology classrooms on the ground floor and physics and botany classrooms on the first floor; total area of 420m².
- b) Agriculture classroom building: 1 story; total area of 54m²
- c) Home science classroom building: 1 story; total area of 90m²

(3) Operation and Maintenance

The facilities to be constructed and equipment and materials provided under the project are such that they may be absorbed into the present school system organization without requiring expansion of current teaching staff. Said facilities and equipment will be operated and maintained by each individual core school in accordance with the determined curriculum requirements.

The Project Office for the Integrated Rural Development Project will solicit reports from the various core schools during the initial stage of the project to evaluate the effective utilization of facilities and materials provided.

10.3 Development of Social Infrastructure

Development of social infrastructure will comprise the following 2 schemes which address fundamental social needs for health and medical service and safe and stable water supply.

- 1) Scheme for improvement of base hospitals
- 2) Scheme for monitoring and improvement of shallow wells

10.3.1 Scheme for Improvement of Base Hospitals

(1) Background

The level of health and medical care services in Gampaha district is below the national average. Following the guidelines of the PHC Complex Program promoted by the Government, Gampaha district is currently pursuing strengthening of health and medical care facilities. Under the subject scheme, rehabilitation and strengthening of facilities and equipment will be performed for the 2 base hospitals at Gampaha and Wattupitiwala, which are in particular need of such measures.

(2) Scheme Components

1) Gampaha Base Hospital

Components of facility strengthening at Gampaha Base Hospital are as follows:

- a) Construction of medical examination facility:
consultation rooms (3), examination rooms (2), records and pharmaceutical storage room, etc.; 2 story structure; 320m²
- b) Construction of mortuary facility:
one wing; 70m²; includes refrigeration facilities.
- c) Construction of doctor accommodations:
8 person capacity; two story structure; 550m²
- d) Construction of ambulance garage: 50m²
- e) Construction of sewage disposal facility:
existing facility superannuated; new facility to have disposal capacity of 100m³/day

- f) Rehabilitation of one portion of water service system
- g) Provision of examination equipment: 1 set
- h) Provision of premature baby care unit: 1 set
- i) Provision of intensive care unit: 1 set
- j) Provision of mortuary refrigeration facility: 1 set

2) Wattupitiwala Base Hospital

Components of facility strengthening at Wattupitiwala Base Hospital are as follows:

- a) Construction of medical examination and blood bank facility: examination rooms (2), blood bank, ECG room, physiotherapy room, etc.; 160m²
- b) Construction of doctor accommodation: 8 person capacity; two story structure; 550m²
- c) Rehabilitation of sewage disposal facility: installation of sludge pumps (4), and rehabilitation of water tank, purifier, etc.
- d) Construction of water service facilities: 100m deep tubewell; lift pump; conveyance pipe (500m)
- e) Provision of medical examination equipment: 1 set
- f) Provision of premature baby care unit: 1 set
- g) Provision of intensive care unit: 1 set
- h) Provision of mortuary refrigeration facility: 1 set

(3) Operation and Maintenance

Facilities constructed and equipment provided will be operated and maintained at each hospital by the existing hospital staff organization. Required medical staff increase will be only that which is already necessary to fill current vacancies, and such necessary expansion of personnel is not seen as a direct result of the project.

Operation and maintenance costs may be met under the existing hospital budgets.

10.3.2 Scheme for Monitoring and Improvement of Shallow Wells

(1) Background and Scheme Description

In the course of field survey for the subject Integrated Rural Development Project, a water quality investigation was conducted for a limited number of shallow wells in Gampaha district. Said survey indicated that the major portion of shallow wells are located in rural area and pose no problem for utilization as a source of drinking water. However, shallow wells located in or near large towns exhibited organic content and turbidity. These wells evidence possible contamination from domestic waste and require urgent attention, from a health and sanitation standpoint.

Under the project, district-wide testing of well water quality will be performed and a well sanitation map drawn up which delineates wells with water suitable for drinking and those for which water treatment measures are necessary. For those wells which so require, rehabilitation will be performed. Simple chlorinators, in particular, will be installed at wells at public facilities.

The results of district-wide water analysis will permit identification of those areas where a piped water supply is necessary. Particularly with regard to the GCEC area and adjacent areas, the danger of chemical contamination has become of increasing concern recently, and water analysis survey would provide a data for study and formulation of appropriate countermeasures.

(2) Scheme Components

In order to implement the envisioned water analysis, a laboratory would be established at the Project Office, and a mobile water analysis unit deployed. The mobile unit will permit water analysis to be conducted at the well site.

Equipment to be provided will include various water analysis equipment and a constant temperature dryers.

The mobile water analysis unit will consist of a modified 4 ton, 4 wheel drive vehicle.

Simple chlorinators would be of the drip type, utilizing hypochloric soda or chloride of lime solution.

Priority for rehabilitation and placement of chlorinators would be given to shallow wells at public facilities (estimated 100 sites).

(3) Operation and Maintenance

Water quality testing would be supervised by the Water Quality/Shallow Well Section of the Project Office. A specific implementation plan for testing will be formulated following a general district-wide survey so as to focus firstly on those areas in the district where water contamination is most marked. Said plan would be drawn up in consultation with Kacheri and AGA offices. As no agency currently exists to administrate construction and operation of shallow wells, such will be initially performed by the Project Office. This jurisdiction would be later transferred to the Water Supply and Drainage Board of the Ministry of Local Government, Housing and Construction, or the DDC.

10.4 Preliminary Project Cost Estimate

Preliminary cost estimate for priority projects was calculated in rupees. Calculations apply prices and exchange rates as of September 1986. (US\$ = Rs 28.0 = ¥ 160; Rs 1 = ¥ 5.7).

Project cost is not broken down into foreign portion and local portion.

A breakdown of costs per priority project are given in the table below:

Table 10.4.1 COST FOR PRIORITY PROJECTS

| Project | Preliminary cost estimate (Rs) |
|---|--------------------------------|
| 1. Agricultural Production Improvement Model Project | |
| Agricultural Technology Demonstration and Transfer Scheme | 42,275,000 |
| Minor Export Crop Promotion Scheme | 53,683,000 |
| Scheme for Improvement of Farmer Support System | 19,044,000 |
| Scheme for Improvement of Agricultural Training System | 63,516,000 |
| Morenna Model Irrigation Scheme | 39,214,000 |
| 2. Human Resources Development Project | |
| Scheme for Improvement of Educational Facilities | 28,356,000 |
| 3. Social Infrastructure Development Project | |
| Scheme for Monitoring and Improvement of Shallow wells | 19,600,000 |
| Scheme for Improvement of Base Hospitals | 34,237,000 |
| 4. Total project cost | 299,925,000 |

Note: Construction cost for Project Office is estimated at Rs 6,062,000

10.5 Project Implementation

10.5.1 Implementing Agencies

As discussed in Chapter 7, the Ministry of Plan Implementation will function as the chief implementing agency for the envisioned Integrated Rural Development Project. A Project Office, Gampaha IRDP will be established under the Regional Development Division of MPI at the Gampaha Kacheri.

As with other integrated rural development projects, a National Project Steering Committee (NPSC) will be formed at the national government level, and a District Coordinating Committee (DCC) at the district level. These committees will consist of representatives from the various agencies concerned with the priority projects formulated under the Master Plan. An NPSC sub-committee at the national level and an operation committee at the district level will be established for each individual priority project, to be composed of representatives from agencies concerned with that specific project.

Members of the NPSC sub-committee for the Agricultural Development Model Project will be from the following agencies:

- ① Regional Development Division of Ministry of Plan Implementation, and Project Office
- ② Gampaha Kacheri (District Minister, Government Agent)
- ③ Department of Agriculture (Ministry of Agriculture)
- ④ Agrarian Services Department (Ministry of Agriculture)
- ⑤ Minor Crop Export Department (Ministry of Agriculture)
- ⑥ Education and Training Department (Ministry of Agriculture)
- ⑦ Irrigation Department of Ministry of Land and Land Development
- ⑧ Agricultural Development Authority
- ⑨ Agrarian Research and Training Institute

Members of the NPSC sub-committee for the Human Resources Development Project will be from the following agencies:

- ① Regional Development Division of Ministry of Plan Implementation, and Project Office
- ② Gampaha Kacheri
- ③ Ministry of Education
- ④ Ministry of Education Service

Members of the NPSC sub-committee for the Social Infrastructure Development Project will be from the following agencies:

- ① Regional Development Division of Ministry of Plan Implementation, and Project Office
- ② Gampaha Kacheri
- ③ Ministry of Health
- ④ Ministry of Women's Affairs and Teaching Hospitals
- ⑤ Industry of Indigenous Medicine
- ⑥ Water Supply and Drainage Board of Ministry of Local Government, Housing and Construction

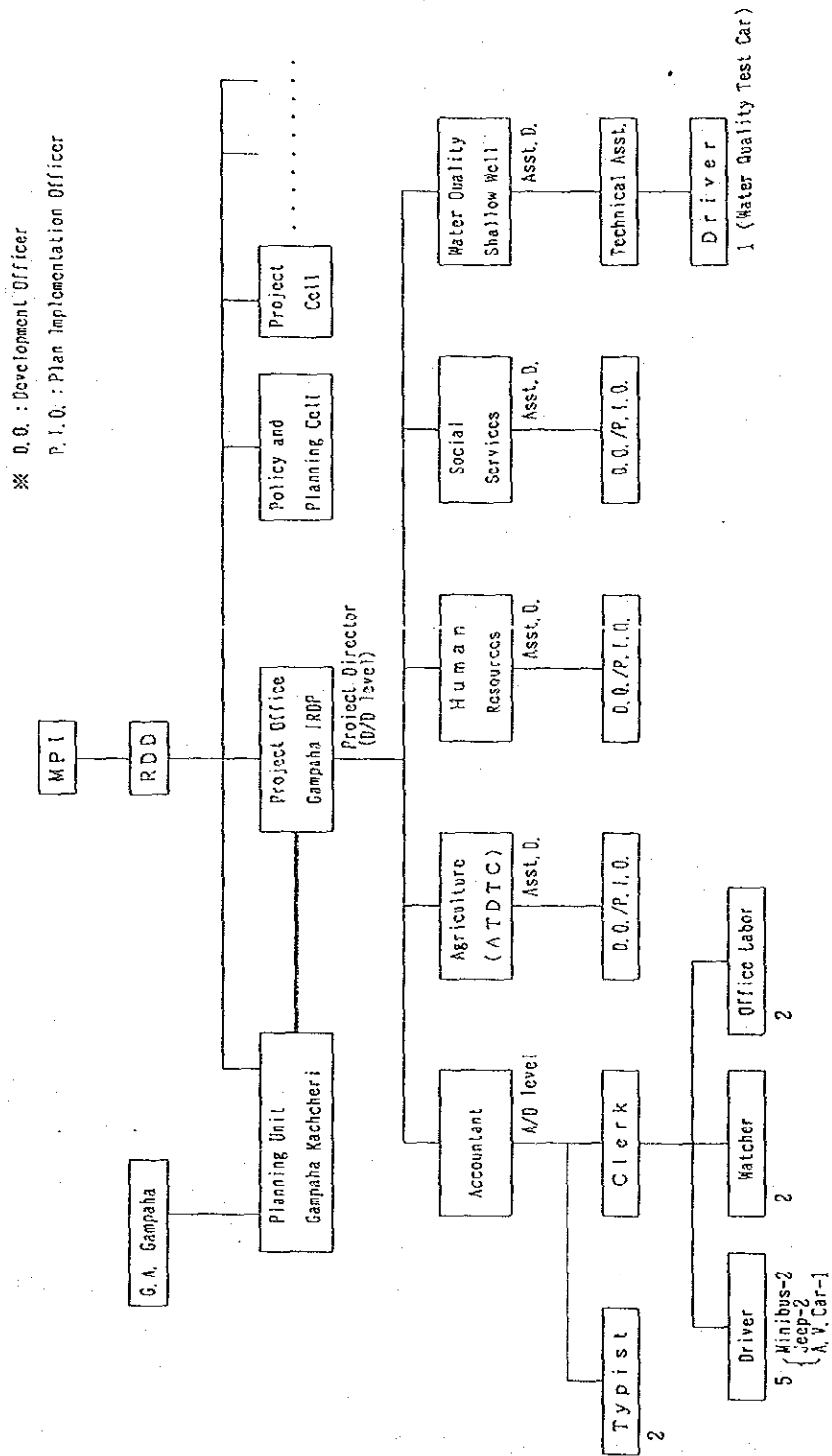
10.5.2 Project Office

In order to ensure smooth implementation of the envisioned Integrated Rural Development Project, a Project Office will be established to provide liaison between concerned government agencies, check on the progress of the various priority projects, oversee preparations for smooth transition to subsequent project phases, etc.

The Project Office will comprise five sections, i.e., Accountant, Agriculture (ATDTC), Human Resources, Social Services and Water Quality/Shallow Well. Project Office organization is depicted in Fig. 10.5.1.

The Project Office is to be located at the Gampaha Kacheri. As there is currently no extra room available, new office space is planned to be constructed. Construction cost is estimated at Rs 6,062,000.

Fig. 10.5.2.1 Project Office Organization and Staffing



A number of vehicles will be necessary to effectively carry out extension activities aimed at farmers and land holders under the Model Project for Agricultural Production Improvement with regard to new agricultural technology and cultivation techniques. In view of agency commitments in other districts, as well as fuel and driver costs, 2 mini-buses and 1 audio-visual vehicle will be maintained at the Project Office in order to augment the transportation capacity of the concerned agencies under the Project.

As there is presently no agency responsible for water quality testing at shallow wells, this activity will be supervised during project implementation by the Project Officer. Jurisdiction will then subsequently be shifted to either the Water Supply and Drainage Board or the District Development Council.

Table 10.5.2.1 PROJECT OFFICE CONSTRUCTION COST

| | | |
|---|-------------------|----------------------------------|
| 1. Structure construction cost | | |
| Main office | 700m ² | 2,100,000 Rs |
| Garage | 200m ² | 200,000 |
| Electricity, water, telephone, sewerage facilities | 1 set | 230,000 |
| Sub total | | 2,530,000 |
| 2. Office equipment | 1 set | 732,000 |
| 3. Vehicles | | |
| Mini-bus | 2 sets | 1,800,000 |
| A-V Car | 1 set | 1,000,000 |
| Jeep | 2 sets | (already provided by JICA) |
| Sub total | | 2,800,000 |
| 4. Total | | 6,062,000 Rs |

10.5.3 Project Implementation

The central role in project implementation will be played by the Regional Development Division of the Ministry of Plan Implementation, and the Project

Office. However, as there will be only a limited number of technical experts in these entities, agencies concerned with the various project components must lend their active support to ensure successful project implementation. Technical capability may be further bolstered through employment of either local or foreign consultants.

Prior to commencement of project implementation, land ownership regarding facility sites must be clarified. This applies in particular to the intensive agriculture model farm of the ATDT scheme.

As it is anticipated that farmers will be desirous of cropping in both the Maha and Yala seasons during the construction period, their aspirations, understanding and consent should be solicited in formulation of the construction approach and method for rehabilitation of headwork, intake, canal, etc. facilities under the Agriculture Production Improvement Model Project.

It is further recommended that a labor intensive construction approach be considered which maximizes job opportunities for the unemployed in Gampaha district.

10.5.4 Implementation Schedule

It is recommended that financial commitment from the Government of Sri Lanka be promptly obtained and project implementation commenced as early as possible. Implementation schedule must be formulated so that construction may begin from December following termination of the Maha rainy season. A 1.5 year construction period is envisaged (assuming that all schemes are implemented simultaneously).

10.6 Operation and Maintenance

(1) Organization

Facilities to be newly constructed or rehabilitated and equipment to be supplied under the project fall under a wide range of sectors. However, the principal implementing agency, i.e., the Ministry of Plan Implementation, is not staffed with experts in all of the concerned sectors affected by the project. Accordingly, MPI will require the close cooperation of all concerned agencies in order to successfully implement the project. Responsibility for operation and maintenance of facilities and equipment provided under the various priority projects will be transferred to the concerned agencies upon project completion.

However, as various agencies are involved with regards to the activities of the Agricultural Technology Demonstration and Transfer Scheme, the Project Office under the Regional Development Division of the MPI will be the principal operation and maintenance entity. The Project Office will also directly supervise the water quality testing program and well rehabilitation as no agency currently exists to assume this responsibility.

As discussed in the sections on operation and maintenance for individual schemes, said O/M will be carried out by a variety of agencies. However, in order to ensure coordinated and effective achievement of the goals of integrated rural development, the various concerned agencies should consult closely with the Project Office regarding their O/M programs, and report regularly to the Project Office on the performance thereof.

(2) Operation and Maintenance Costs

Operation and maintenance cost for facilities and equipment to be provided under the Project was calculated solely in terms of supplemental costs necessitated by increased numbers of personnel, vehicles, etc., specifically as a result of the Project as it is impossible to accurately estimate at this stage the total number of existing personnel, vehicles, etc. that will be directly or indirectly involved in all the concerned agencies in order to carry out the objectives of the Project. Said supplemental cost for operation and maintenance is calculated at Rs 2,050,000 per annum.

Educational and hospital facilities were not included within the estimate as these facilities may be operated within existing organizational frameworks without additional expansion of personnel.

Required personnel, vehicle, etc. increases under the Project are indicated in tables 10.6.1 ~2.

Table 10.6.1 Staffing for the Project (Additional)

| | Project Director | Asst. Director | Manager | Asst. Manager | Clerk/D. O /Technical Assist | Publicity Officer | Typist | Mechanic /Operator | Driver | Laborer | Watchman |
|------------------------|------------------|----------------|----------|---------------|------------------------------|-------------------|----------|--------------------|-----------|-----------|----------|
| ATDTC | | | 1 | 1 | 1 | 1 | 2 | 4 | 3 | 10 | 2 |
| MEC | | | | | 3 | | 1 | | 3 + 1** | 9 + 2** | 2 |
| Extention S | | | | | | | | | 1 | | |
| Agrarian S | | | | | | | | | 1 | | |
| ADA | | | | | | | | | 1 | | |
| Walpita T. C. | | | | | | | | 1 | 1 | | |
| Ambeppussa T. C. | | | | | | | | 1 | 1 | | |
| Moreenna H. I. S (T P) | | | | | | | | | | 2 | |
| Project Office | 1 | 5 | | | 5 | | 2 | | 6 | 2 | 2 |
| Total | 1 | 5 | 1 | 1 | 9 | 1 | 5 | 6 | 19 | 25 | 6 |

* 1 : Nursery Asst. & Water Pump Operator - 2
 * 2 : Sanitary Labor & Lorry cleaner - 2

Total 79 persons

Table 10.6.2 Nos of Vehicle and Farm Machinery

| | Mini Bus | Jeep | Motor Cycle (90cc) | Bicycle | A-V Car | 4 H Tractor | 2 H Tiller | Power Sprayer | Manual Sprayer | Others |
|------------------------|----------|-----------|--------------------|------------|----------|-------------|------------|---------------|----------------|----------------------------|
| ATDTC | - | 3 | 2 | - | - | 1 | 1 | 2 | 2 | |
| MEC | - | 2 | 10 | - | - | 1 | 2 | 2 | 5 | 2ton Truck - 1 |
| Extention S | - | 1 | 7 | 85 | - | - | - | - | - | |
| Agrarian S | - | 1 | 13 | 436 | - | - | 26 | - | - | |
| ADA | - | 1 | 6 | - | - | - | - | - | - | |
| Walpita T. C. | - | 1 | 3 | - | - | 2 | 5 | 5 | 5 | |
| Ambeppussa T. C. | - | 1 | 3 | - | - | 2 | 5 | 5 | 5 | |
| Moreenna H. I. S (T P) | - | - | 2 | - | - | - | 1 | - | - | |
| Project Office | 2 | (2) | - | - | 1 | - | - | - | - | Water Quality Test Car - 1 |
| Total | 2 | 10 | 46 | 511 | 1 | 6 | 60 | 14 | 17 | |

**Table 10.6.3 Operation and Maintenance Cost
per Year (Additional Cost)**

| Project/Office | Salaries | Other Recurrent Expenditure | Total |
|-----------------------------|----------------|--------------------------------|------------------|
| | Rs | Rs | Rs |
| 1. Project Office | 368,400 | 228,000 | 596,400 |
| 2. ATDTC | 290,400 | 362,000 | 652,400 |
| 3. MEC Nursery Center | 220,800 | 310,000 | 530,800 |
| 4. Extension Services | 9,600 | 24,000 | 33,600 |
| 5. Agrarian Services | 9,600 | 36,000 | 45,600 |
| 6. ABA | 6,600 | 18,000 | 27,600 |
| 7. Walpita D.T.C | 21,600 | 48,000 | 69,600 |
| 8. Ambepussa D.T.C | 21,600 | 48,000 | 69,600 |
| 9. Morenna Model Irrigation | 19,200 | 6,000 | 25,200 |
| Total | 970,800 | 1,080,000 | 2,050,800 |

Note : Other Recurrent Expenditure : Fuel and lubricants, traveling expenses maintenance and repair, stationery, electricity, telephone, water supply, materials for MEC farm, miscellaneous.

10.7 Project Benefit

Priority projects comprise the following:

| | <u>Project cost (Rs)</u> |
|---|--------------------------|
| Agricultural production improvement project | 217,732 |
| Human resources development project | 28,356 |
| Social infrastructure development project | 53,837 |
| <hr/> | |
| Total | 299,925 |

The above projects have been formulated to directly contribute to i) raising farmer consciousness concerning modern agricultural techniques, ii) introduction of high yielding agriculture, iii) improvement of secondary education and iv) strengthening of social infrastructure.

Specifically the agricultural production improvement model project will generate direct output in terms of increased agricultural productivity and expanded minor export crop seedling cultivation within the Project area. However, in a broader sense, the Project will provide training, demonstration and extension activities available to all the farmers in Gampaha district and on a national scale provide a model for similar areas in other districts. The 5 component schemes of the model project are designed through mutual and complementary inter-action to yield multifaceted effects, and as such the evaluation of the benefit of individual schemes is difficult. However, effective promotion of high yield agriculture through the project would improve farm productivity and income, as well as having a beneficial ripple effect on other social and economic sectors in the district. Benefits would also include stimulation of export and diversification of agricultural products, both of which are important components of national agricultural policy.

10.7.1 Effect on Production Increase

Minor export crops

Under the Project, pepper and coffee would be cultivated in the available intercroppable area in the district of 16,000ha. Gross production of Rs 912 million, and net profit of Rs 566 million would be expected. Almost all of this agricultural product would be aimed for export.

Other upland crops

Other general upland crops (centering primarily on pineapple) would be likewise intercropped in coconut fields. Approximately 16,000ha of cultivation of this type of crop would be possible. Furthermore, upland crops (principally beans) would be introduced into paddy fields where irrigation and drainage facilities have been improved for cropping between the Maha and Yala seasons. The Morenna model irrigation area (450ha) will be able to accommodate 500 farm households through which triple cropping will be demonstrated and farmer consciousness deepened concerning the importance of irrigation, drainage and water management.

Paddy

The agriculture technology demonstration and transfer farm planned for the Morenna area will provide demonstration in cultivation technology to achieve 4.5t/ha yield, which is 1.5 times the present. Said technology is intended for extension to the typical farmer in the district, particularly the smaller scale farmer.

10.7.2 Effect on Improvement of Farm Income

Expansion of agricultural production as discussed above will result in three fold increase in farm income as set out below:

Table 10.7.2.1 FARM INCOME WITH AND WITHOUT PROJECT

| Farmer class (by acreage) | Without project (A) | | With project (B) | | B/A | |
|-------------------------------------|---------------------|------------|------------------|------------|------------|------------|
| | Gross production | Net Income | Gross production | Net Income | Production | Net Income |
| Large scale farmer (10) | 32,517 | 18,639 | 109,170 | 73,106 | 3.36 | 3.92 |
| Medium scale farmer (4) | 14,638 | 7,388 | 45,848 | 26,430 | 3.13 | 3.58 |
| Standard farmer(1.2) | 6,334 | 2,780 | 15,337 | 9,553 | 2.41 | 3.44 |
| Small scale farmer (0.5) | 2,885 | 1,097 | 8,082 | 4,124 | 2.80 | 3.76 |
| Extremely small scale farmer (0.25) | 400 | 265 | 3,040 | 1,820 | 7.60 | 6.87 |

Qualification for food stamp reciprocity is income of less than Rs 8,400 per annum (Rs 700 per month). At present, farmers with holdings of 4 acres fall within this category. With implementation of the project, farmers with holdings of 1.2 acres would achieve income of Rs 9,500 per year, making it unnecessary for them to avail themselves of food stamps.

10.7.3 Social Benefit

Improvement of diet and nutrition

Almost all farmers in Gampaha district are part-timers, relying to various extents on off-farm income. Of these, 110,000 farm households cultivate small areas of less than 1 acre. Most such households engage in home garden type farming simply for domestic consumption to off-set income deficiency of off-farm employment. Three fold increase of

production through introduction of intensive farming practices will directly benefit these impoverished households.

Increase of employment opportunities

On-farm labor demand generated by intercropping of export crops and other upland crops, and introduction of triple cropping of paddy field is anticipated to be 19,000 jobs for the former and 6,000 for the latter. This will provide absorption of unemployed and underemployed among the youth and females. Job opportunities will also expand in agricultural product distribution and processing sectors as a result of three fold increase in farm productivity. Expansion of personnel necessary for quality control in the case of farm products for export will be particularly important.

Correction of income disparity

The Project is directly targeted at the low productivity, impoverished segment of the agricultural sector in Gampaha district. A three fold increase of income among this segment will contribute greatly to reduction of income disparities of the district population. The upper threshold for food stamp reciprocity is a yearly income of Rs 8,400, which is roughly the current income of farmers who cultivate 4.6 acres. Successful implementation of the Project will enable farmers with holding of only 1 acre achieve earnings above the food stamp threshold. Approximately 45,000 households would no longer require such government food subsidization.

Education improvement

Upgrading of science, agriculture and home science curricula in all core schools of the district's 26 school clusters will be achieved under the Project. All segments of the secondary school system will be able to avail of these improved facilities. Improved educational levels will help the district respond to technical manpower demands as the most industrialized district in the nation. Desire among the district's population for such a scheme is high.

Strengthening of medical and health facilities

Contamination of shallow wells by domestic wastewater and pollution of surface flows by industrial waste have been steadily increasing in the district, and these are seen as potentially serious causes of water borne communicable diseases and chemical poisoning. In order to address

this problem, district-wide water quality testing of shallow wells and well rehabilitation are to be implemented under the Project. Water quality analysis will identify areal distribution of contaminated water sources and permit the formulation of countermeasures, i.e. antiseptics in the case of pathogens, and extraction in the case of chemical agents. In the process, consciousness regarding safe water supply will be deepened.

Improvement of base hospitals will not only upgrade the facilities thereat but provide a strengthened base whereby more effective administration of primary medical and health facilities throughout the district may be achieved.

The combined effect of the above two schemes from the aspects of safe water supply and preventive medicine will make a significant contribution to enhanced health levels of the rural population.

10.7.4 Ripple Effect

The model project for improvement of agricultural production will introduce and demonstrate high yield farming, and undertake extension of necessary technology and inputs (seedlings, fertilizer, etc.). The Project will provide a context for the cooperative and concerted efforts of all agriculture related government agencies towards the establishment of a model for suburban type agriculture. These agencies will principally include such as the Minor Export Crop Department, Agrarian Services Department, Extension Services Department, Agricultural Training Center, etc., all within the Ministry of Agriculture, as well as the Irrigation Department of the Ministry of Land and Land Development, etc. In this manner, horizontal liaison among governmental departments will be promoted.

The Project will make a large contribution to diversification of exports of agricultural products, which is an important component of national policy. If all minor export crop production (Rs 912 million) envisioned under the Project is exported, this would constitute 9% of the 1984 trade deficit of Rs 10.2 billion.

The three priority projects are selected to provide inter-complementary benefits towards creation of a balanced socio-economic environment in rural area of Gampaha district.

In conclusion, implementation of the Project will expand agricultural productivity, improve income and reinforce social infrastructure in rural area of

Gampaha district. Nutritional and health levels of rural population will be raised. Successful introduction of high yielding agriculture and accordant self-sufficiency of income will be difficult to measure but nevertheless extremely important uplifting effect on farmer psychology and sense of dignity. This will be anticipated to contribute significantly to social stability.

The Project is seen as a step towards establishing a sound foundation for long-term socio-economic development of Gampaha district.

CHAPTER 11

CONCLUSIONS AND RECOMMENDATIONS

Gampaha district is situated adjacent to Colombo, the national capital. The district also encompassed the GCEC industrial area. Despite this potentially advantageous geographic location, the unemployment rate in the district is at 26.9%, which is over twice the national average.

The principal agricultural product is coconuts. Food demand within the district cannot be met by the internal agricultural industry, the productivity of which is below the national average. Existing agricultural production and social infrastructures have been in place for long periods of time, and are markedly superannuated. Areal imbalances within the district with regard to such infrastructure are also evident. However, due to relatively advantageous natural and social conditions in comparison with other districts, development assistance to Gampaha district has been largely not forthcoming to the present.

In view of this situation, the subject Master Plan for Integrated Rural Development in Gampaha District has been formulated. The said Plan focuses on effective utilization of agricultural land to achieve the principal goals of integrated rural development of increased income for small and part-time farmers, and creation of employment opportunities through introduction of intensive agricultural practices.

Increased income of farm households is anticipated to stimulate the rural economy, spurring the development of industries outside the agricultural sector.

At this stage, under the subject Master Plan, focus could only be given increased employment opportunities in the agricultural sector, although it is evident that the said sector is not capable of absorbing all of the unemployed in the district. Consequently, in the future, it is proposed that further study be conducted towards formulation of strategy to promote rural industry. Such a study would examine availability of capital, types of product, product demand, technical skill levels, product marketability, etc.

Although superannuation of agricultural production infrastructure, particularly in the case of the Attanagalu oya irrigation project, is such that reconstruction rather than rehabilitation is necessary for highly effective results, such construction of new facilities was not included under the short-term projects for the subject integrated rural development given present conditions of financial

capability in the country. However, as the Attanagalu oya irrigation project is of crucial importance to agricultural production within the district, it is highly desirable that during the Project implementation, feasibility study be carried out to formulate an appropriate means to fully restore facilities under the said Project so that they may fulfill their intended function.

Social infrastructure in Gampaha district is relatively developed in comparison with other districts in the country. However, there exist imbalances between the GCEC area and rural areas. Furthermore, much of the said infrastructure is markedly superannuated. Consequently, the subject Plan focuses on addressing regional imbalances, and on improvement (rehabilitation and/or new construction) of existing facilities.

The Master Plan comprises both long-term targets and short-term schemes. Short-term schemes are formulated according to criteria of urgency, and rapid realization of project benefits. A specific implementation plan has been drawn up for those short-term schemes identified as priority projects. Remaining schemes require further feasibility study and detail design survey. During the implementation period for short-term projects, it is recommended that survey should be conducted on long-term targets of the Master Plan and specific projects formulated to achieve said objectives.

In particular, it is anticipated that the Agriculture Production Improvement Model Project of the priority projects will give orientation to future agricultural development in the district, and serve as a model as well for other districts in the execution of a project where cooperation and concert among the numerous agricultural related government entities must be maintained.

The principal implementing agency for the subject integrated rural development is the Regional Development Division of the Ministry of Plan Implementation. However, the Master Plan itself spans a range of sectors and the concerned government agencies are numerous. In order to effectively implement the Project, the full cooperation, particularly regarding technical aspects, of various concerned entities will be absolutely essential. In this regard, the smooth function of the National Project Steering Committee and District Coordination Committee will be particularly important.

As the schemes envisioned by the Project bear directly on the daily life of area residents, their direct participation and support from the initial stages of

project implementation is crucial. Farmer and other citizen groups should be promoted to facilitate the involvement of intended project beneficiaries.

The Agricultural Technology Demonstration and Transfer Scheme under the Agricultural Production Improvement Model Project is anticipated to provide demonstration and guidance in agricultural modernization in the district. As the scheme will entail the introduction of new agricultural technology and cultivation practices, it is recommended that technical support be provided in the form of experts from a country where said technology is at a highly developed level. This applies particularly to technical expertise in effective utilization of paddy field, especially in regard to its utilization for crops other than rice.

The envisioned schemes under the Master Plan affect a wide range of sectors, and consequently technical expertise in numerous fields will be necessary for successful implementation. As the Ministry of Plan Implementation has only a limited number of technical personnel, outside expert assistance and cooperation, particularly with regard to rural development planning and agricultural civil engineering, will be necessary.

Although envisioned projects under the Plan are low key in content, they will benefit a broad range of the district population and as such implementation of priority projects should commence as soon as practicable. The rural residents of the district likewise seek prompt realization of the Plan. Early implementation is further desirable from a national standpoint in that the Master Plan will function as a model for similar integrated rural development programs in other districts.

In closing, the Team wishes to express its gratitude for the assistance and cooperation so graciously extended to it by officials of the various concerned agencies within the national and district governments, as well as by the rural population of Gampaha district. It is the Team's firm hope that the envisaged Plan will be successfully implemented, thereby contributing to the prosperity and enhanced living environment of district residents.

添付報告書の英文版2冊は(Main/Annex)
表紙があべこべです。原課(現は林業
水産開発調査課)に問い合せたところ、
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