Volume I

# EVALUATION STUDY
# BARANGAY WATER PROJECT

US Agency for International Development

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ECONOMIC
DEVELOPMENT
FOUNDATION INC.

February 15, 1980

Mr. Charles Brady
Project Officer, Barangay Water
Project
United States Agency for
International Development
14th Floor Ramon Magsaysay Building
Roxas Boulevard, Metro Manila

Dear Mr. Brady:

We are submitting this report on our evaluation of the Barangay Water Project (Phase II of project implementation).

The report is presented into two volumes as follows:

Volume I - presents the results of the EDF's evaluation of the Project's organizational set-up mechanism, approach and strategy, and systems and procedures

Volume II - analyzes the jurisdictional status of the project as it is presently situated vis-a-vis other alternatives.

We consider this assignment especially significant not only in the light of the Projects' deep social relevance but also because of the fresh insights and experiences gained therefrom which will undoubtedly benefit the implementation of Barangay Water System, particularly the envisioned accelerated expansion of the Program.

Very truly yours,

CESAR N. SARINO
President

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# C O N T E N T S

# I. INTRODUCTION

## A. Background

This is the report on the evaluation study conducted by the Economic Development Foundation (EDF) on the USAID-assisted Barangay Water Project. The EDF study sought to determine the effectiveness and efficiency of the Project's approach, systems and procedures, and implementing organization. The study was also to draw up conclusions and recommendations for improving the Project's organizational effectiveness.

### The Project in Brief

The Barangay Water Project is an ongoing USAID-assisted program designed to provide safe and sufficient domestic water to small and medium size rural communities ranging in size from 300 to 5,000 people. The water systems consist of both deep well and gravity-fed spring development sources and range in cost from ₱100,000 to ₱500,000. The type and size of system varies from community to community in order to fit local requirements, but all systems share this feature: they are owned, amortized, managed, and maintained by an association made up of the users themselves.

The implementing arrangement is to work through local government units and establish within them the capacity to plan, design, finance, and construct small water systems. Concomitant to the construction of water systems is the organization and training of the recipient communities. Thus, organization, training, and construction are the key components of the Project.

The Project provides three levels of services as follows:

Level I - This type of water service consists of manually operated pitcher pumps. Each pitcher pump installed caters to households within a radius 250-500 meters.

Level II - This type of service utilizes a motor-driven pump to transfer water from underground source or from a treated surface water source to a storage tank. Water from storage tank or surface water is conveyed through pipes to the community with public standposts situated for each 10 households. A water meter is provided at each connection.

Level III - This type of service is similar to Level II except that this provides a direct connection to each household. A water meter is likewise required at each connection.

## Objectives of the Project

1. Long-Term. The ultimate aim of the Barangay Water Projec is to contribute to a higher quality of rural life through increased income, improved health, and enlarged social opportunities.

Such improved conditions of life are expected to result from behavioral changes effected by the presence of safe, abundant, and conveniently available water.

Water of the sort described will be delivered by water systems and water facilities constructed by local government units (provinces and cities) participating in the Barangay Water Program.

2. Medium-Term. The medium-term objective of the Project is to develop the capacity of local government units to plan, finance, design, organize and construct communal water systems and facilities which the government can afford and which recipient communities can successfully manage and operate.

3. Short-Term. The immediate objective of the Project is to develop an organization structure, with its attendant personnel and operating procedures, and evolve an approach befitting Philippine conditions and which leads to the realization of the Project's more distant goals.

## Strategy for Project Implementation

The implementation of the Project entails four distinct phases and a mixed GOP, USAID, and World Bank funding over a 10-year period. Each phase is briefly discussed.

### Phase I - Pilot, 1977

The objectives of the "pilot" year were to: 1) develop an institutional structure with its attendant operational procedures, policies, and personnel at the national and local government levels, and 2) test the responsiveness of the structure, and the adequacy of the policies and procedures by implementing a limited number of pilot systems. The "pilot" effort was funded entirely by the GOP with USAID providing only technical assistance.

### Phase II - BWPI (Refine and Expand), 1978-1979

The objectives for 1978-79 were to: 1) further refine the program and 2) expand operations to the remaining PDAP

provinces and RSC cities. It was anticipated that up to 200 water works systems would be constructed. Accordingly, up to 200 water user associations would be organized. Phase II would be jointly funded by USAID and the GOP, each contributing approximately 50 percent of the cost of the project.

Phase III - BWP II (Institutionalization)
1980-1982

The objectives in Phase III are to: 1) further expand the project to qualified non-PEAP provinces and non-RSC cities, 2) strengthen the institutional capacity of the structure at the various administrative levels, 3) refine the approach, and 4) develop sufficient local government absorptive capacity to attract follow-on funding by the World Bank. The World Bank has reviewed the program and has agreed to participate when the institutional and absorptive capacities exist. Phase III will be jointly funded by USAID and the GOP.

Phase IV - BWP III (Expansion and Intensification)

With the institutional capacity well established, Phase IV will emphasize:

-- water system construction
-- saturation of the established operational area
-- expansion to additional provinces and cities
-- initiation of the project in communities with up to 10,000 inhabitants.

Phase IV will be funded jointly by the GOP and the World Bank. It is expected that external funding to the project will end in 1986. Funding beyond 1986 should be shouldered solely by the GOP and should be limited to the newly participating local government units. The original local government units should be phased out of funding grants as adequate financing becomes available through increased tax revenues, waterworks loan repayments, and other schemes for local development financing, e.g., the Fund for Local Development.

## B. Objectives and Scope of the Study

### Objectives

The general objectives of the study are:

-- to undertake an evaluation study to determine the effectiveness and efficiency of

o implementing organization units

- o project approach
- o operating systems and procedures

to draw conclusions and make recommendations for project modifications or design on the follow-up loan for BWP II.

## Scope

The evaluation study covers the implementation of Phase II - BWP I of the project (1978-1979), specifically in terms of

- -- the extent to which immediate and intermediate objectives have been attained
- -- the adequacy, efficiency and appropriateness of
  - o the institutional structure, namely: the PMS, provincial government units and the barangay association
  - o the attendant personnel to include PMS, provincial government and barangay association
  - o the program approach and strategy including operational systems and procedures by major stage of project development and implementation
  - o training component in terms of approach, outputs, and other training elements in the total context of the BWP
  - o the sub-projects, to cover status, period of implementation and cost
- -- organizational hierarchy within which the program exists, determining the attendant advantages and disadvantages of the present locus at the national level
- -- the various factors in the situation that affect program implementation, including motivation and attitudes of local government officials and community dwellers. Based on the evaluation, recommendations are made in the specific project areas where improvements could be made.

## C. Methodology

The following basic procedures were observed in undertaking the study:

1. Briefing and orientation of the EDF Project Team on the project.

2. Study of all documents and materials pertinent to the Project, specifically manuals which have been developed for the implementation of each major stage of the Project.

3. Observation and ocular inspection of eight selected provinces and their sub-projects.

4. Interviews among specific groups, to include

   -- USAID personnel involved in the program

   -- National government agencies having to do, directly or indirectly, with the program, e.g., MLGCD, MPWTC, MOH, MHS, etc.

   -- Project Management Staff

   -- Local government officials, including members of the Provincial Water Resource Task Force of sampled areas

   -- Officers of Barangay Water Associations and community dwellers of selected sub-projects

   -- Other municipal and barangay personnel, such as social workers, sanitation officers, etc.

5. Analysis and evaluation of policies, procedures and other components of the project to determine their strengths and weaknesses.

6. Validation of findings with the beneficiaries concerned and with the AID-MLGCD.

7. Formulation of recommendations.

## D. Report Organization

This report is presented in two parts. The first part contains the results of the evaluation of Phase II (1978-1979) of Project implementation. The second part gives an analysis of the jurisdictional status of the Project as it is presently situated and assuming an alternative agency to administer it.

### VOLUME I - RESULTS OF PROJECT EVALUATION

| | | |
|---|---|---|
| I. | INTRODUCTION | - Describes briefly the Project, the objectives, scope and methodology of the study, and the organization of the report. |
| II. | THE PROJECT: A GENERAL PERSPECTIVE | - Describes the Project in terms of its outputs and actual accomplishments and initial impact to the recipient communities. |
| III. | PROJECT ORGANIZATION | - Discusses the Project's institutional linkages and organizational status at the national, provincial and barangay levels; gives recommendations on identified deficient areas. |
| IV. | PROJECT APPROACH, SYSTEMS AND PROCEDURES | - Discusses the Project approach and the various operating and management systems and procedures. |

### VOLUME II - ANALYSIS OF THE JURISDICTIONAL STATUS OF THE PROJECT

- Analyses the Project as it is presently situated and cites the implications on the Project of another agency administering its operation.

## II. THE PROJECT: A GENERAL PERSPECTIVE

The following section describes the Barangay Water Project notably its outputs and accomplishments during the second phase of implementation. It must be emphasized here that at this stage, besides constructing rural water systems, the BWP, being a trail-blazing effort, is in the process of simultaneously testing strategies, approaches, systems and procedures. The results of this study are therefore to be taken in this perspective, namely, that continuing improvements can be made as more experiences are gained in the project.

The Barangay Water Project as implemented by the Ministry of Local Government and Community Development with technical assistance from the USAID is a pioneer effort in providing domestic water to small and medium size communities ranging in size from 300-5000 people. A distinct feature of these barangay water systems is that these are owned, amortized, managed, and maintained by the beneficiaries themselves.

The Project has provided a model integrated approach to providing water at the barangay level for national agencies currently involved in water programs as well as non-PDAP local government units interested in launching water projects. The experiences of the project have been shared with such national agencies as the Ministry of Public Works (MPW), the Bureau of Water Supply (BWS) and the LWUA. Non-PDAP provinces, on the other hand, have manifested interest in the Project based on feedback from PDAP provices where the pilot projects have achieved a certain degree of success.

The Project's organization and institutional linkages have largely enabled it to achieve its short-term objectives. However, equal emphasis must be given its long-term organizational needs.

The existing administrative systems and procedures are comprehensive and unique to this type of project. Although certain deficiencies may have existed in some of these systems, on the whole, the systems have proven effective for purposes of project planning and implementation. Refinements to these systems and procedures are continually being made to make them more responsive to current needs.

## Project Outputs

The Project's various outputs may be categorized under: a) institutional development and b) physical infrastructure.

The institutional development outputs refer to the systems and procedures, training, research and development and organization aspects of the project. Infrastructure outputs, on the other hand, refer to such outputs as waterworks system, water repair shops constructed, including office facilities and other structures.

The more specific outputs are cited presently.

## A. INSTITUTIONAL DEVELOPMENT OUTPUTS

On the overall, institutional development targets have been adequately achieved during Phases I and II of the project. These outputs have, to a large extent, provided the required support for the operationalization of the barangay water service cooperatives within a reasonable time.

### 1. Systems and Procedures Designed

A complete set of manuals on procedures have been developed covering all major stages of the project from planning of sub-project operations of barangay water service cooperatives. These are presently used by personnel at the different levels of project implementation. Initial revisions have been made in these manuals to incorporate needed changes. These manuals are as follows:

a) Planning and Implementation Manual (Booklets Nos. I, Ia, Ib and Ic). This (recently revised manual details the policies and procedures governing sub-project planning and implementation at the following levels:

-- Level II and IIIA sub-projects (Booklet No. 1)

-- Level II sub-projects (Booklet No. 1a)

-- Organization and operation of the Province City Evaluation Team (Booklet No. IB)

-- Water Repair Shop (Booklet No. Ic).

The last three booklets are recent additions to this manual.

b) Methodology for Barangay Water Project Feasibility Study (Booklet No. 2). This manual describes in detail the procedures for undertaking project feasibility studies. These procedures have been revised for simplification.

c) Budget and Accounting Procedures (Booklet No. 3). This prescribes procedures for budgeting, accounting, and standard cost determination.

d) Contract Administration (Booklet No. 4). This contains guidelines and procedures for constructing projects under contract.

e) Design Policies and Design Criteria (Booklet No. 5). This prescribes the standards for the preparation of preliminary engineering reports and technical plans and specifications.

f) Barangay Financial Handbook (Booklet No. 6). This handbook contains the procedures for organizing the association/ service cooperatives in the beneficiary community. This likewise serves as a guide in handling the financial matters related to the management and operation of waterworks systems.

g) Organization and Training Manual (Booklet No. 7). This is the training guide for service cooperatives.

h) Local Government Participation, Planning and Requirements Handbook (Booklet No. 8). This prescribes the requirements and procedures for local government participation in the Project; likewise, the procedures in preparing the Provincial/City Water Resource Development Plan.

As of December 1979, all Administrative Procedures Manuals (Booklets 1-8) had been entirely re-written to facilitate accomplishment of these activities.

## 2. Training Programs Conducted

The specific outputs of the training effort are as follows:

a) Number of LGU's Trained. All told, there were 38 LGU's which have either began or completed the basic training package, broken down as follows, on a per batch classification:

| LGU's | Training Dates |
|---|---|
| 7 pilot provinces | January 1977 to September 1979 |
| 5 1978 provinces + 2 1979 provinces (Mindoro and Samar) | August 1977 to September 1979 |
| 6 1978 pilot cities and Sorsogon | November 1977 to September 1979 |
| 8 1979 provinces and Cities | February 1979 to September 1979 |
| 5 1980 provinces | October 1979 |
| 5 1980 cities | October 1979 |

Of the 38 LGU's there are 12 cities and 27 provinces.

b) Number of Training Programs. A total of 22 separate training programs, on the different topics of the training package have so far been conducted for participating LGU's.

| Year | No. |
|---|---|
| 1977 | 8 |
| 1978 | 7 |
| 1979 | 10 *as of December, 1979) |

Three additional training programs were conducted in October and December as follow:

1) Orientation Seminar - Legaspi City
October 24 - 26, 1979

2) Water Supply Design and Construction - Zamboanga City
December 17-21, 1979

3) Structural System - Zamboanga City
December 17-21, 1979

c) Number of Training Days. In terms of number of training days, the training effort accumulated a total of 112. training days.

| Year | Training Days |
|---|---|
| 1977 | 40 |
| 1978 | 36 |
| 1979 | 36 |

d) Number of Participants*. A total of 668 participants attended the training.

| Year | No. |
|---|---|
| 1977 | 276 |
| 1978 | 123 |
| 1979 | 378 |

3. Organizations Formed

a) Water Resource Task Force. This is the provincial inter-agency unit organized by the Provincial Governor to promote inter-agency cooperation and coordination in the implementation of the water project.

To date, a total of 17 provincial and 6 city task forces, corresponding to the number of provinces and cities presently involved in the barangay project, have been organized.

The planned and actual number of task forces organized is shown below.

| No. of Water Resource Task Forces organized at the Local level | 1977 | | 1978 | | 1979 | | Total | |
|---|---|---|---|---|---|---|---|---|
| | Plan | Actual | Plan | Actual | Plan | Actual | Plan | Actual |
| Provincial | 7 | 4 | 8 | 8 | 8 | 5 | 23 | 17 |
| City | 0 | - | - | - | 7 | 6 | 7 | 6 |
| TOTAL | 7 | 4 | 8 | 8 | 15 | 11 | 30 | 23 |

*Each participant is counted on after as he attends any number of training programs.

The 17 provinces and six cities presently involved in the Project are the following:

Provinces

I. Participated in 1977

-- Aklan
-- Bulacan
-- Batangas
-- Pangasinan

II. Participated in 1978

-- Misamis Oriental
-- Capiz
-- Bataan
-- Davao
-- Iloilo
-- La Union
-- Palawan
-- South Cotabato

III. Participated in 1979

-- Camarines Sur
-- Cebu
-- Pampanga
-- Samar
-- Zambales

Cities (Participated in 1979)

-- Butuan
-- Cagayan de Oro
-- Dagupan
-- Naga
-- Puerto Princesa
-- Roxas

Based on the 1979 plan, the provinces and cities which failed to participate on account of their inability to satisfy the project requirements particularly in the documentation aspect are: Provinces - 1) Agusan Sur, 2) Mindoro Oriental and 3) Quezon; for the cities it was General Santos only.

b) Barangay Water Service Cooperatives (BWSC). To date, there are 49 BWS's organized (see table below).

| No. of Barangay Water Service Cooperatives Organized at the Community Level | 1977 | | 1978 | | 1979 | | |
|---|---|---|---|---|---|---|---|
| | Plan | Actual | Plan | Actual | Plan | Actual | Actual |
| Level I sub-projects | -- | -- | -- | -- | -- | -- | -- |
| Level II sub-projects | 7 | 4 | 17 | 14 | 35 | 26 | 44 |
| Level III A sub-projects | -- | -- | -- | -- | 5 | 5 | 5 |
| TOTAL | 7 | 4 | 17 | 14 | 40 | 31 | 49 |

Of this number, however, only ten BWSCs are now actually operating their water systems. The rest, though organized already, have either not actually accepted the systems or are awaiting completion or turn over of the systems.

c) Project Management Staff. This is presently staffed with 20 people. The following table compares actual with planned complement.

| No. of Personnel Assigned at the Central Office | 1977 | 1978 | 1979 | |
|---|---|---|---|---|
| | Actual | Actual | Plan | Actual |
| Managerial | 1 | 1 | 1 | 1 |
| Supervisory | 1 | 4 | 3 | 2 |
| Technical | 6 | 11 | 29 | 11 |
| Clerical and Service | 7 | 10 | 9 | 6 |
| TOTAL | 15 | 26 | 42 | 20 |

As of October, 1979, the number of personnel at the Central Office had not been increased to the planned manpower strength of 42 due to budgetary contraints. However, the desired level is expected to be fully attained during the succeeding phase of the project or by the following year.

As of December, 1979, eleven additional personnel for the BWP Project Management Staff had been recruited since October 1979 as follows:

3 Research Engineers
1 Fiscal Analyst
2 Waterworks Researchers
1 Artist Illustrator

1 Junior Statistician
1 Training Assistant
1 Monitoring and Evaluation Management Consultant
1 Training and Organization Management Consultant

4. Research and Development

a) Level III A Service Connection. A research study has been conducted by the USAID technical staff to pinpoint what particular level of service can be provided for to the community at a minimum cost per household. This led to the introduction of the Level III A service. The features of this type of service are the following:

-- flow rate to each household limited to 1/10 gallons per minute (GPH)

-- each household provided with its own storage of at least 10 gallons

-- minimum production rate at 12.5 GPM per thousand persons to be served

-- storage capacity of 1,000 gallons to be provided for each thousand persons to be served

-- low water level of storage tank - about 20 feet

-- no meter required since wastage can not become exhorbitant

-- size of pipe individual connection: 3/8 diameter.

This type of service is currently being installed in five provinces for pilot testing. Although involving low installation cost, this type of service suffers from the disadvantage of regulated water flow to users.

b) Standardization of Engineering Designs and Procedures. A technical manual has been developed and is undergoing revisions with the objective of providing, where possible, standard criteria for engineering designs and methods for improvement of construction waterwork systems.

## B. PHYSICAL INFRASTRUCTURE OUTPUTS

To date, 10 level II and III waterworks systems have been constructed. All of these sub-projects are now operational and has been turned over to the community.

The 10 projects that are operational as of December, 1979 are as follows:

1. Lolomboy, Bulacan
2. Malvar, Batangas
3. Ibajay, Aklan
4. Maloco-Capilijan, Aklan
5. Talaga, Tanauan, Batangas
6. Matabungkay, Lian, Batangas
7. La Filipina, Tagum, Davao del Norte
8. Capitangan, Abucay, Bataan
9. Kimaya, Jasaan, Misamis Oriental
10. Asingan, Pangasinan

Six level I sub-projects (out of the on-going 72 and against planned 10 units for 1979) have just been completed though not yet operational.

The status of the Project vis-a-vis the plan during Phases I and II of the project is shown in Table 2.

In 1977 three sub-projects were abaondoned after pre-project selection for the following reasons:

1. Wrong site (a poblacion in the case of Palawan)

2. Water source is inadequate in the case of Capiz

3. No. source of electricity in the case of South Cotabato.

In 1978 three sub-projects were discontinued due to inadequate source of spring water.

In 1979, 109 of the planned 160 sub-projects were initiated. The remaining sub-projects failed to satisfy project documentation requirements. The status of the 109 sub-projects is shown in the following table.

1/Completed as of December 31, 1979.

| | Detailed Engineering Plans being finalized/reviewed | Under Bidding | Under Construction | Construction Completed | Total |
|---|---|---|---|---|---|
| A. Level I | 20 | 20 | 23 | 6 | 78 |
| B. Level II | 19 | 4 | 3 | -- | 26 |
| C. Level III A | 3 | -- | 2 | -- | 5 |
| TOTAL | 42 | 33 | 28 | 6 | 109 |

Beneficiaries

Based on BWSC in operation, a total of 5063 beneficiaries are being served. This is broken down as follows:

| | No. of Beneficiaries |
|---|---|
| Malvar, Batangas | 790 |
| Lolomboy, Bulacan | 1,547 |
| Ibajay, Aklan | 1,046 |
| Maloco-Capilijan, Aklan | 1,680 |

Table 2

STATUS OF SUB-PROJECTS

| | Phase I 1977 | | Phase II | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | 1978 | | | | | |
| | | Actual | | Actual | | | Actual | |
| | Plan | Completed and Operational | Plan | Completed Operational | Nearing Completion | Plan | On-going | Completed |
| 1. Level I - Wells | -- | -- | -- | -- | -- | 120 | 72 | 6 |
| 2. Level II | | | | | | | | |
| a. Springs | -- | -- | 3 | -- | -- | 10 | -- | -- |
| b. Communal Faucet Systems (CFS) | 7 | -- | 14 | 6 | 8 | 25 | 26 | -- |
| 3. Level III | -- | 4 | -- | -- | -- | -- | -- | -- |
| 4. Level IIIA A | -- | -- | -- | -- | -- | 5 | 5 | -- |
| TOTAL | 7 | 4 | 17 | 6 | 8 | 160 | 103 | 6 |

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## 2. Economic Benefits

As mentioned earlier, Lolomboy is a semi-industrial community with a number of factories operating in the area. Most of the residents are either employed in these factories or are self-employed in cottage industries like shoe-making, dressmaking, and manufacture of place mats and ladies bags. Average family consumption of water bought from people with water facilities installed by the Bocaue Water District is ₱45.000. This amount covers the fare for tricycles to transport the water. Maximum water consumption recorded so far among these families is ₱24.00 a month. This means a family savings of at least ₱21.00 per month. Net savings can be more if the time in fetching water which can otherwise be spent in productive endeavors is considered.

Because of lack of water in the home, families in San Pedro could not engage in backyard gardening even during the summer months. This was impossible to do before the construction of the system because of the climate. Seldom does it rain in this place from December to April. At least 70% of households now have backyard gardens. Families with lanzones trees in their yard claim that there has been a marked increase in their yield since they started watering regularly their trees. There are no available records, however, to quantity how much economic benefits in terms of additional income these families derived from backyard gardens and orchards. The system has been in operation for less than a year.

Piggery is another economic activity which the water system has generated in San Pedro and Maloco. School records in San Pedro show that about 60% of families in the Barangay are engaged in pig-raising which they usually sell during the opening of the school year to meet school expenses of the children Maloco-Capilihan has about 20% of families raising one to two pigs in their backyard

BWP has also provided minor employment opportunities to qualified residents of the Barangay. Present positions are few and salary rates very low but more positions are expected to be opened and salaries upgraded as the association grows.

## 3. Socio-Political Implications

Because of the need for potable water, the Barangay has become a more cohesive community. People forgot their personal differences and worked together to achieve a common aspiration. Local organizations joined forces and pulled together their resources to see the Project through. The Project has in fact developed an atmosphere of "oneness" within the Barangay.

The Program has provided the Barangay with the opportunity to manage its own project. The various training programs offered by the Project have strengthened the management capabilities of the officers of the water association. This is the feature that makes the Project different from other government programs. The only past program which may approximate it in concept is the Grant-in-Aid program of the PACD/MLGCD. That program required the people to determine their own projects, utilize available community resources and free labor, and manage the project themselves. The people, however, were not organized into a formal structure and given the necessary training in management which is the key to the success of the Project. The community, likewise, was not required to amortize a part of the project cost. The desire of the people for the project to succeed under the Grant-in-Aid Program was not as high as that in the present Project.

Furthermore, the Project has instilled a deeper sense of responsibility among the community leaders. In addition to their concern for the repayment of their loan, they also have to consider the provision of potable drinking water to the low-income groups in the barangay. Project officials serve the association free or for very minimal salaries just to get the organization going. Officials are free to plan and decide for themselves what is good for their community. This sense of responsibility compels them to better know and manage their community, its people and resources.

## III. PROJECT ORGANIZATION

This section presents the findings, conclusions and recommendations on the current organization system of the Barangay Water Project. The following areas are covered:

-- institutional linkages
-- organization at the national level
-- organization at the provincial level
-- structure at the barangay level.

The Project Management Staff (PMS) which is tasked with administering the Barangay Water Project is situated within the organization structure of the Ministry of Local Government and Community Development (MLGCD). It is a unit under the Provincial Development Assistance Program which is headed by an Executive Director who is concurrently the Deputy Minister for Local Government. Chart 1 illustrates how the PMS structure is situated within the general structure of the MLGCD.

FINDINGS AND CONCLUSIONS

### A. INSTITUTIONAL LINKAGES

The PMS presently maintains direct linkages with various organizational units at the different levels of the Project. (See Chart 2).

#### 1. National Level

At this level, the PMS relates itself with the USAID BWP staff and the Architecture and Engineering (A & E) Firm.

The USAID BWP staff provides consultative advice on the project in the areas of project management and engineering.

As part of the contract entered into with the MLGCD, the A & E firm assumes the task of providing technical services to local government units at all levels as well as assisting the PMS on all engineering activities.

#### 2. Provincial Level

At this level, the PMS relates itself with the Provincial Development Staff and the Provincial Engineer's Office which offices are both under the Provincial Governor, as well as with the Local MLGCD Office.

Chart 1

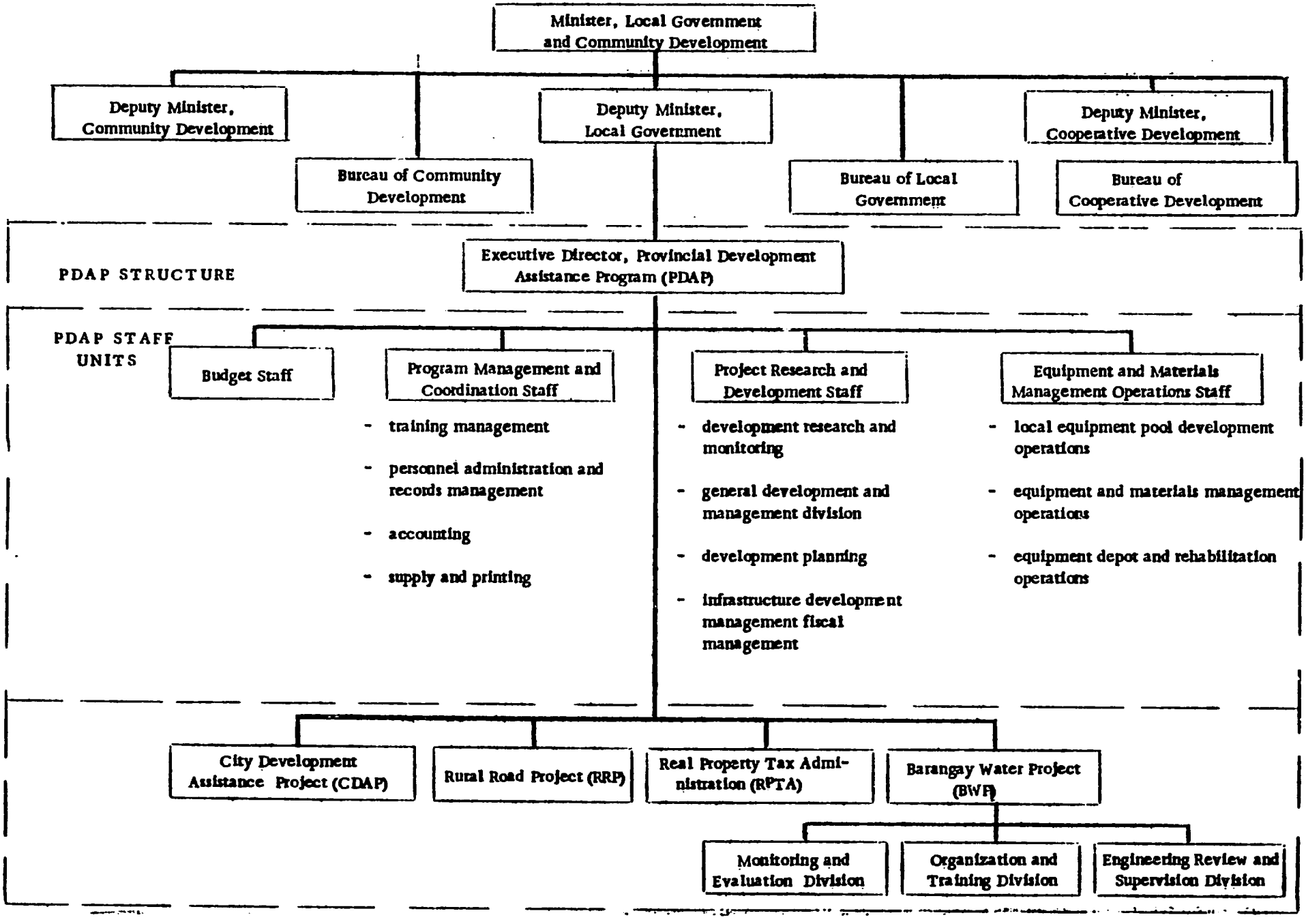
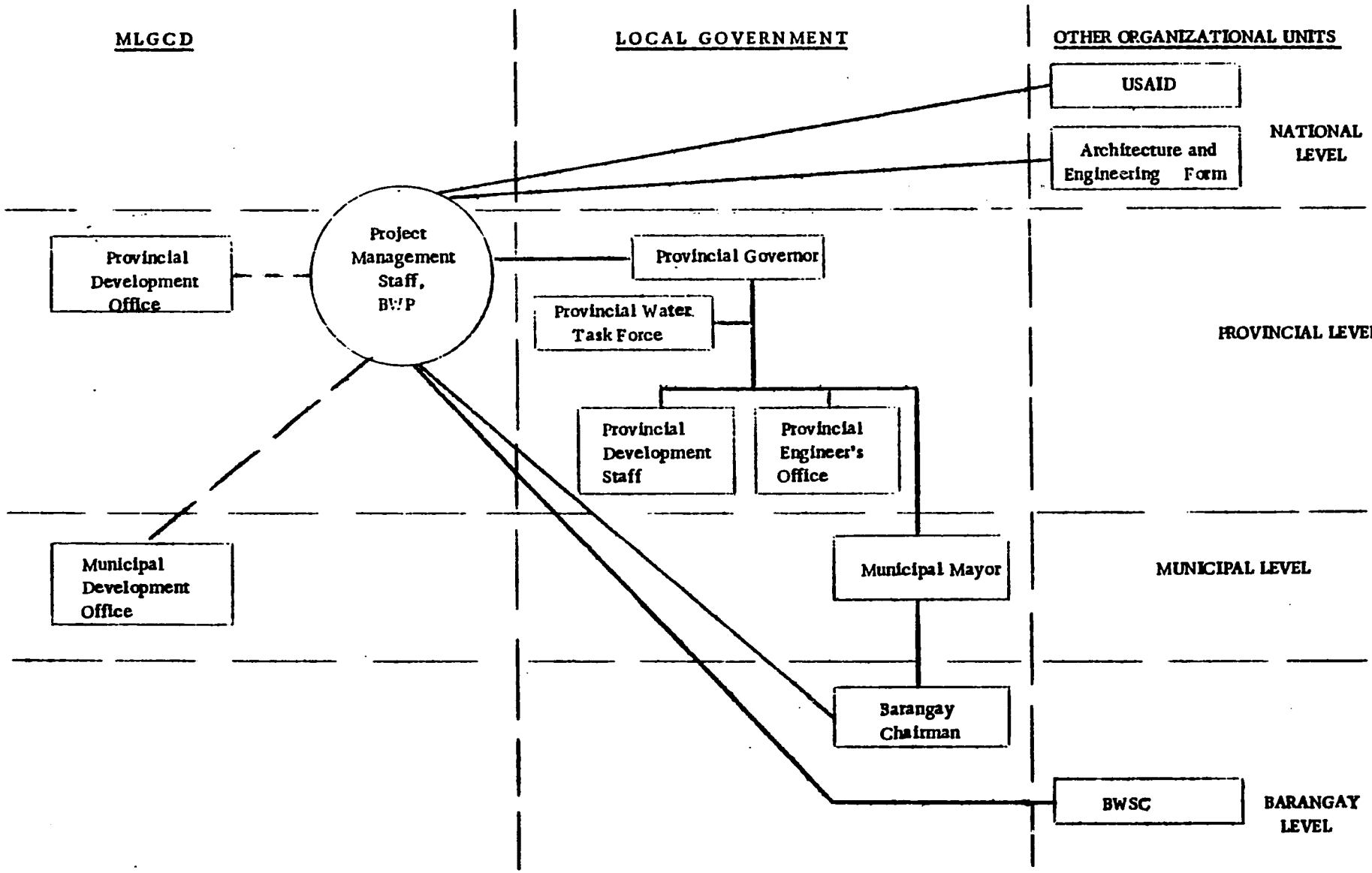

Minister, Local Government and Community Development
Deputy Minister, Community Development
Deputy Minister, Local Government
Deputy Minister, Cooperative Development
Bureau of Community Development
Bureau of Local Government
Bureau of Cooperative Development
PDAP STRUCTURE
Executive Director, Provincial Development Assistance Program (PDAP)
PDAP STAFF UNITS
Budget Staff
Program Management and Coordination Staff
- training management
- personnel administration and records management
- accounting
- supply and printing
Project Research and Development Staff
- development research and monitoring
- general development and management division
- development planning
- infrastructure development management fiscal management
Equipment and Materials Management Operations Staff
- local equipment pool development operations
- equipment and materials management operations
- equipment depot and rehabilitation operations
City Development Assistance Project (CDAP)
Rural Road Project (RRP)
Real Property Tax Administration (RPTA)
Barangay Water Project (BWP)
Monitoring and Evaluation Division
Organization and Training Division
Engineering Review and Supervision Division

Chart 2

INSTITUTIONAL LINKAGES OF THE BWP



The PMS coordinates closely with the PDS on all aspects of sub-project planning and implementation activities and with the PEO on all engineering aspects. Close relation is maintained considering that the local governments are the implementors of the project.

Likewise, at the Provincial Level, the Local Office of the MLGCD provides the required technical assistance in the area of community organization. The local MLGCD office maintains a community organization and cooperative development staff whom the project can tap when necessary.

3. Municipal Level

At this level, the linkage of the PMS with the local MLGCD office is likewise in terms of the latter's assistance in community organization and cooperative development activities. It is at this level where the MLGCD can provide the needed support in organizing informational meetings and cooperatives activities.

The PMS maintains a working relationship with the municipal government unit in the areas of sub-project planning and implementation.

4. Barangay Level

At this level, the PMS relates itself directly or indirectly through the Provincial Governor with the BWSC and the Barangay Chairman. Since the PMS exercises functional control over barangay cooperatives, the linkage can prove helpful in enhancing the planning process at the barangay level, apart from serving as a feedback mechanism on the activities of the cooperatives.

Status of Existing Organizational Linkages

The Project has established institutional linkages with local government units and outside agencies in the planning and implementation aspects. At the same time, administrative procedures are currently being adopted for the entire project framework.

However, no action has been initiated in establishing linkages with existing agencies involved in water supply such as the LWUA and the MWSS and Bureau of Water Supply of the MPW.

This suggests two areas of improvement with respect to organizational linkages:

1. Establishment of linkages with the LWUA, MWSS, DOH and WHO - As planned, the project has to relate itself with these agencies for assistance in training implementation; however, this has not been effected. This linkage is necessary particularly since the Central Office personnel are supposed to act as the medium for the transfer of technology required by the Project.

2. Activating Linkage with the Local MLGCD - In spite of the fact that it is under the MLGCD program, the Project has not tapped the assistance of the local office of the MLGCD in the area of cooperatives development. This is due to the inadequate coordination between the PMS and PDS staff on the one hand, with the regional and local MLGCD offices, on the other.

## B. ORGANIZATION AT THE NATIONAL LEVEL

Two organizational units are directly involved in the Project at the national level, namely: 1) The Project Management Staff and 2) A and E firm.

### 1. Project Management Staff (PMS)

The PMS is the organizational unit in the Central Office that assumes the sole responsibility for the overall administration of the Project. As such, the PMS assumes overall control and coordination of project planning and implementation activities of the program.

The PMS is headed by a Project Manager who assumes the responsibility of administering the Project and who is accountable to the PDAP Executive Director. Under the Project Director are three divisions, namely:

-- Monitoring and Evaluation Division
-- Organization and Training Division
-- Engineering Review and Supervision Division.

The Monitoring and Evaluation Division is tasked with maintaining the information reporting system for the Project. In addition, the division also assesses, on a continuing basis, the applicability and appropriateness of program concept, approaches and implementation procedures as well as project evaluation.

The Organization and Training Division administers the entire training program for the Project. The division is also tasked with assisting and overseeing local government units in the organization and training of barangay cooperatives/associations.

The Engineering Review and Supervision Division oversees and controls activities related to the engineering aspect of the Project.

The respective functions of these divisions are shown in Chart 3.

The existing organizational set-up of the PMS is shown in Chart 4.

The present personnel force of the PMS is based at the Central Office in Metro Manila and share the same building with PDAP - MLGCD personnel.

2. Architecture and Engineering Consulting Firm (A & E)

The A & E consulting firm is an external private consultancy outfit primarily involved in providing technical assistance to local government units participating in the Project. To avail of such services, the MLGCD annually enters into a contract for architect-engineer services with an acceptable consultancy company. For the duration of the Project, it has had three different A & E firms - Parsons in 1977, EDCOP in 1978, and now (1979), Techniks Planners, Inc.

The A & E consultants act as the authorized representative of MLGCD in so far as essential engineering services for the Project are concerned. The specific tasks of the A & E firm in the Project are as follows:

- For New Provinces

  Assistance in

  - preparation of water resource inventory and development plans
  - selection of eligible projects
  - establishment of waterworks repair shops.

Chart 3

## ORGANIZATION STRUCTURE
## PROJECT MANAGEMENT STAFF

**Project Manager**
**BWP Management Staff**

- Overall administration of the barangay water project

### Supervising Project Evaluation and Monitoring Officer
**Monitoring and Evaluation Division**

- Development and implementation of monitoring system at all levels
- Evaluation of feasibility study reports on proposed sub projects
- Conduct of studies related to project implementation
- Development of policies and procedures on program implementation
- Project planning

### Supervising Organization and Training Coordinator
**Organization and Training Division**

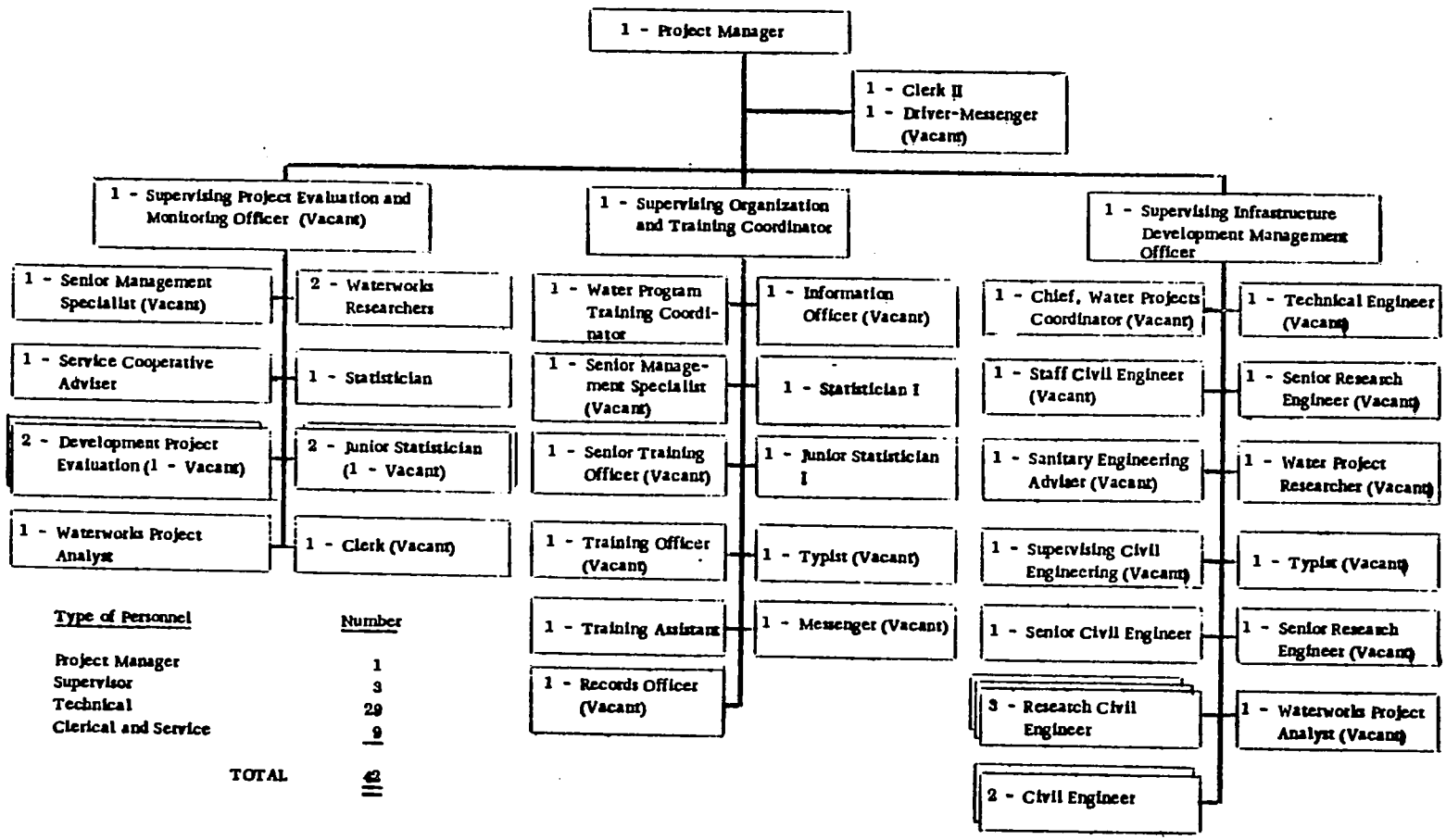
- Development and implementation of training programs for local government units pertinent to water programs
- Development of curricula for training projects at all levels
- Scheduling and designing of annual training programs
- Maintenance of registry of resource speakers
- Assistance to local government units and supervision in the organization and training of barangay water service cooperative (BWSC) members
- Monitoring of BWSC status of activities
- Development of training guides for use of government units
- In house staff development

### Supervising Infrastructure Development Management Officer
**Engineering Review and Supervision Division**

- Assistance in the setting up and development of infrastructure task force of local government
- Advice in the conduct of preliminary engineering reports and detailed engineering
- Development of design manuals for waterworks construction, maintenance and standardization procedures
- Supervision and monitoring of construction and installation of waterworks system
- Evaluation of water projects for improvement purposes
- Review of preliminary engineering reports

Chart 4

ORGANIZATION CHART
PROJECT MANAGEMENT STAFF




| Type of Personnel | Number |
|---|---|
| Project Manager | 1 |
| Supervisor | 3 |
| Technical | 29 |
| Clerical and Service | 9 |
| TOTAL | 42 |

o For All Provinces

a) Assistance in

development of training programs on the engineering aspects

- preparation of technical feasibility studies

- preparation of engineering plans and specifications in the provinces and cities

- review of cost estimates for projects

- preparation of implementation schedules for project construction

b) Establishment and updating of local government standard unit costs in each geographical area of the program

c) Checking and monitoring of construction activities

d) Assistance to local governments in the pre-qualification of prospective contractors and preparation of contract documents.

e) Checking and monitoring of laboratory testing of materials

f) Preparation of standard plans and designs

g) Ensuring local government's adherence to the Project technical manual and assistance in the revision of said manual

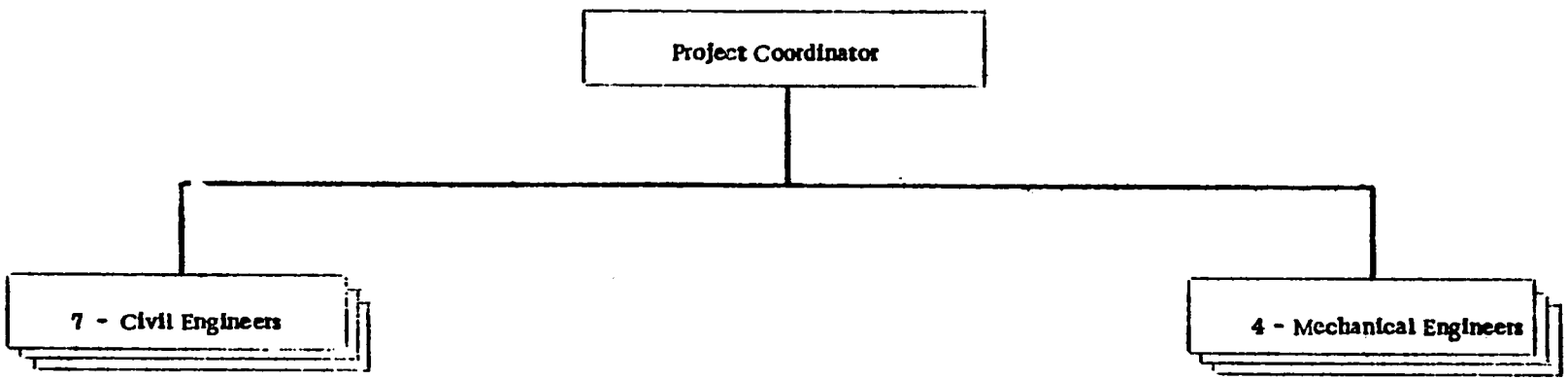
h) Conduct of pre-final inspection of work

i) Conduct of final inspection jointly with the MLGCD and USAID representatives, Auditor and MOH representative.

In assuming these tasks, the present A & E firm maintains a total of 12 technical personnel headed by a Project Coordinator who deals directly with the Project Manager and the PMS's supervisors. The Project organization of the A & E firm is shown in Chart 5.

Chart 5

PROJECT ORGANIZATION
A & E FIRM
(TECHNIKS PLANNERS, INC.)



Each of the engineers periodically conducts visits to sub-projects and is assigned specific provinces to cover for the duration of the year.

At the provincial level, the A & E Engineers deal directly with the PDS and PEO personnel in providing the essential engineering services. As the need arises, they likewise provide direct assistance to sub-projects at the barangay level.

## Status of the Organization at the National Level

The present role and functions of the PMS have already been clearly delineated in relation to PDAP's role in the areas of training and administrative activities. As defined, the PMS organization is responsive to the requirements of the Project.

However, the existing organizational set-up of the PMS is inadequate in terms of manning, resulting in non-performance of some functions. As it is right now, the total manpower strength (20 personnel) at the Central Office is even less than the total force in 1978 despite the expanded coverage of the Project. Particularly, the required number (about 29), of technical personnel has not been filled. The following table illustrates the manpower movement during Phases I and II of the Project.

| Type of Personnel | 1977 Actual | 1978 Actual | 1979 Planned | 1979 Actual |
|---|---|---|---|---|
| Managerial | 1 | 1 | 1 | 1 |
| Supervisory | 1 | 4 | 3 | 2 |
| Technical | 6 | 11 | 29 | 11 |
| Clerical and Service | 7 | 10 | 9 | 6 |
| TOTAL | 15 | 26 | 42 | 20 |

As shown in the table, only about 50% of the manpower requirement has been satisfied in 1979.

The inadequacy of technical personnel (only 11 out of 29 presently occupied) has largely mitigated against a more focused thrust on such areas as training, project monitoring and evaluation and engineering. In the Organization and Training Division, 4 of the required 7 technical were not hired; in the Engineering Review and Supervision 5 of out of 14; and in the Monitoring Evaluation Division, 2 out of 9. (See Chart 4). In training, for instance, some delays in the implementation of training activities (i.e., seminars/workshops, training design) can be attributed to inadequacy in manpower. The development and maintenance of the project

planning and information/monitoring system has not been given due attention for the same reason. In the area of engineering, as more sub-projects are installed and more provinces and cities participate, activities are expected to be boosted particularly in the review of technical plans, designs and feasibility studies.

For its part, the USAID technical staff has been providing the stop-gap support particularly in the areas of training and project monitoring and evaluation. However, this is not expected to fully satisfy the actual demands of the Project.

Likewise, the PMS requires administrative support services such as those involving drafting and art/illustration work. Again, these services are not being adequately provided for lack of manpower.

The technical problems in the pilot sub-projects as well as those currently being put up and nearing completion, on the other hand, can be traced to inadequate supervision over engineering design (particularly pumps) and construction works. Specific engineering problems encountered are:

-- pump capacity not compatible with deep well source

-- leaks in water transmission lines

-- improperly painted tanks

-- leaks in concrete water storage

-- overheating of electrical control panel of the water systems.

These problems are expected to prevail as more sub-projects are implemented. This calls for closer monitoring of sub-project engineering activities, say, through periodic visits to sites by the A & E or the PMS engineering staff.

To sum up, the areas demanding improvement in the organization at the national level are as follows:

- Adequate staffing and strengthening of PMS in the following areas:
  - -- training
  - -- project planning
  - -- monitoring and evaluation
  - -- engineering
  - -- administrative support services
- Close supervision on engineering design and construction work.

## C. ORGANIZATION AT THE PROVINCIAL LEVEL

Three organizational units are involved in the planning and implementation of the Project at the provincial level, namely:

-- Provincial Development Staff (PDS)
-- Provincial Engineer's Office (PEO) and
-- Provincial Water Task Force.

The three units are all headed by the Provincial Governor who assumes the task of orchestrating all project activities at the provincial level. This organizational relationship is illustrated in Chart 6.

### 1. Provincial Development Staff PDS)

The PDS is a staff unit in the local provincial government unit responsible for planning, monitoring and coordinating the programs of the provincial government. This particular unit exists only in PDAP provinces and is directly under the Office of the Provincial Governor. The PDS is headed by a Provincial Development Coordinator.

The functions carried out by the PDS are the following:

-- planning and programming of local government projects, e.g., rural roads, barangay water, agricultural development, real properly tax administration, and other utility projects such as telecommunications and electricity.

-- training

-- information and publications

-- research and data banking

-- administrative services

-- finance

-- budgeting

A typical structure of a PDS is shown in Chart 7.

The specific role of the PDS in the Project is to plan, monitor and coordinate project activities in the entire province.

Chart 6

RELATIONSHIPS OF ORGANIZATIONAL
UNITS AT THE PROVINCIAL LEVEL

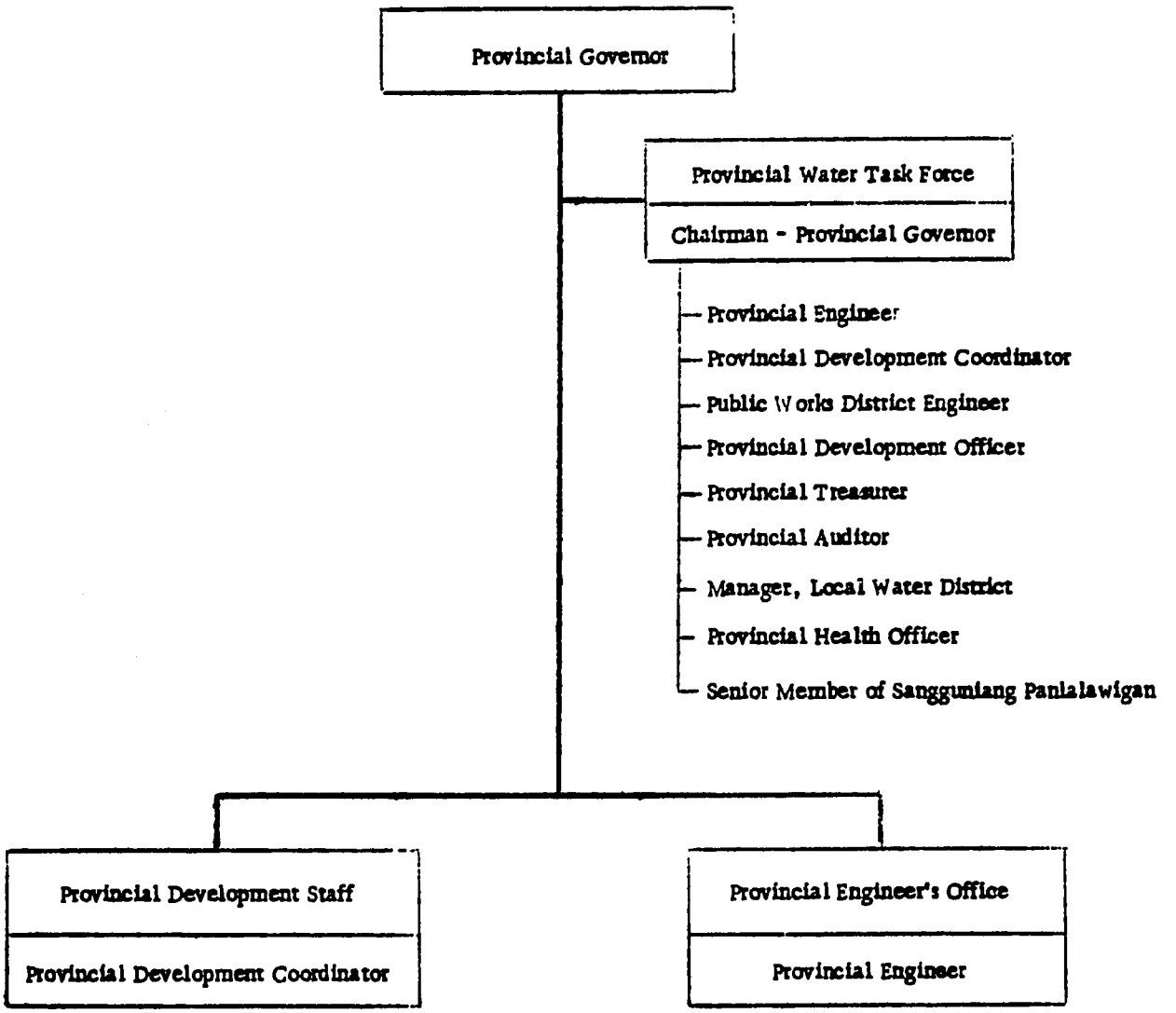
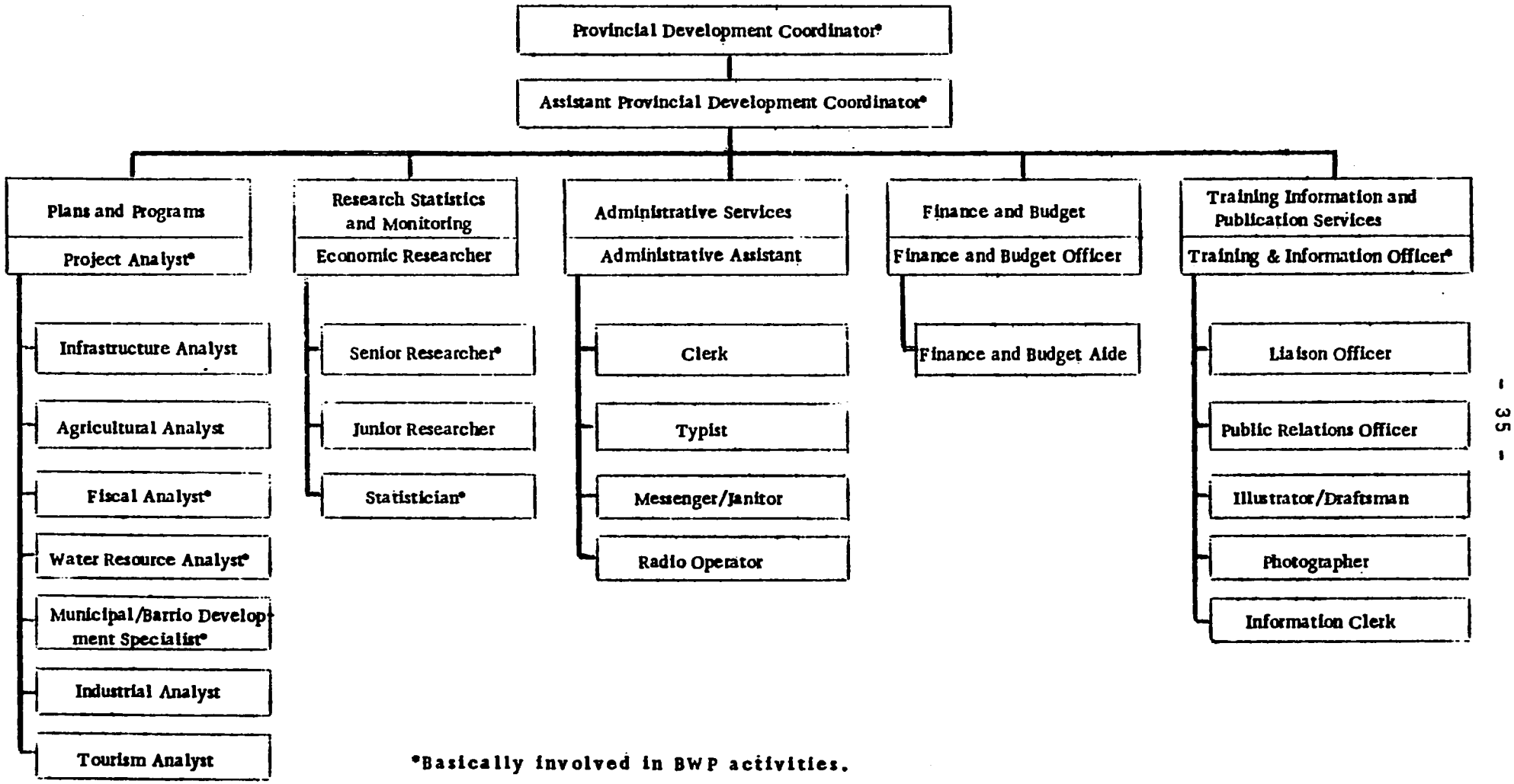


Chart 7

ORGANIZATION STRUCTURE
PROVINCIAL DEVELOPMENT STAFF




*Basically involved in BWP activities.

More specifically, this involves undertaking the following:

-- development of water program
-- planning of sub-projects
-- organization activities
-- training
-- monitoring of sub-projects
-- coordination of barangay water project planning and implementation activities

The specific tasks involved in exercising these functions are assigned to various PDS personnel under the supervision of the Provincial Development Coordinator who assumes the responsibility for coordinating these functions. The positions in PDS involved in the Project are the following:

-- Provincial Development Coordinator
-- Deputy Provincial Development Coordinator
-- Project Analyst
-- Infrastructure Analyst
-- Agricultural Analyst
-- Fiscal Analyst
-- Water Resource Analyst
-- Training Analyst/Officer
-- Economic Analyst
-- Senior Researcher
-- Junior Researcher
-- Statistician
-- Municipal/Barrio Development Specialist

The specific responsibilities of these positions are presented in Appendix 1.

2. Provincial Engineers Office (PEO)

The PEO is an organizational unit under the Provincial Governor charged with the responsibility of planning, implementing and maintaining infrastructure projects. Headed by the Provincial Engineer, the office carries the following functions:

-- infrastructure planning and programming
-- construction
-- quality control
-- equipment maintenance
-- infrastructure maintenance
-- administration

A typical set-up of the PEO is illustrated in Chart 8.

The PEO is tasked with the following in relation to the Project.

-- development of engineering plans and designs for waterworks systems

-- preparation of preliminary engineering reports

-- supervising, inspecting and monitoring and construction of waterwork systems in the province

-- supervising the repair and maintenance of the waterwork systems in the province

-- operation and maintenance of water repair shop

-- assisting in the training of water cooperatives and associations

-- advising barangay water associations on technical aspects of maintaining, repairing and operating small water systems

-- assisting in the preparation of provincial water resource inventory and 5-year water resource development plan.

The PEO positions directly involved in the project are the following:

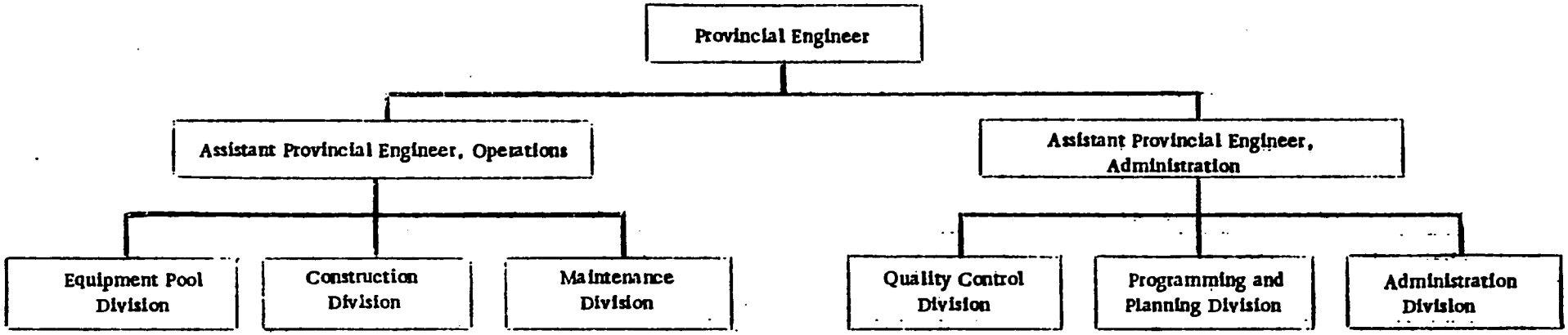
-- Assistant Provincial Engineer
-- Division Chief, Planning and Programming
-- Barangay Waterworks/Sanitary/Civil Engineer
-- Waterworks Technician

The specific responsibilities of each of these positions are shown in Exhibit 1.

In the PEO set-up, Project activities are organized under one unit headed by a Barangay Waterworks/Sanitary/Civil Engineer. This unit is situated under either the Construction Division (in the case of provinces like Aklan, Davao and Batangas) or the Programming and Planning Division (in the case of Bulacan, South Cotabato and Pampanga provinces).

Chart 8

## ORGANIZATION STRUCTURE
## PROVINCIAL ENGINEERS OFFICE



3. Provincial Water Task Force (PWTF)

As a requisite of the Project, the Provincial Governor, thru an administrative order, organizes a task force composed of representatives from line agencies in the province. The task force is headed by the Governor himself. The composition of the task force is as follows:

Chairman - Provincial Governor

Members:
- Provincial Engineer
- Provincial Development Coordinator
- Public Works District Engineer
- Provincial Development Officer
- Provincial Treasurer
- Provincial Auditor
- Manager, Local Water District
- Provincial Health Officer
- Senior Member of Sangguniang Panlalawigan
- Others deemed necessary such as representatives from the Ministry of Health

The PWTF has the following functions:

-- promote inter-institutional cooperation and coordination

-- facilitate the exchange of information and provide technical assistance, as required, for the preparation of the Provincial Water Resource Inventory, 5-year Water Resource Development Plan, future development plan for provincial water resource

-- approval of Provincial Water Resource Inventory PWRI and Water Resource Development Plan (WRDP).

The PWTF discharges these functions by holding monthly meetings.

The PDS is the principal unit in the province assigned to collect data and documents prepared and submitted by both the PWRI and WRDP.

Status of the Organization
at the Provincial Level

At present, the existing organization at the provincial level is adequate to carry out the required activities of the Project:

1) Duties prescribed have been assigned to personnel/units concerned at the local level

2) A water task force has been created and is operating to promote inter-agency cooperation on the water program

3) Manpower is adequate, so is the time rendered to the Project by the local government staff relative to the scope of the projects currently being undertaken (see Table 1 for percentage of time spent by each position involved in the Project).

However, owing to a hose of administrative and coordinative duties, the Provincial Governor is experiencing some difficulty in personally overseeing Project activities. The situation is remedied in the provinces with the participation of the Provincial Development Coordinator who is as involved in the various programs as the Provincial Governor. While the present set-up has appeared to work out satisfactorily, this could be due to the limited scope of operation of the Project. However, with the projected number of sub-projects to be implemented (covering all levels of services), this will certainly boost the volume of activitie- requiring the Governor's attention, and therefore would require closer and more deliberate planning, project involvement, and monitoring.

From the foregoing, it can be seen that there is a need at the provincial level for a more effective coordination management of various water project activities being performed by the PDS, PEO and the PWTF.

Table 1

RELATIVE PERCENTAGE OF TIME SPENT IN BARANGAY WATER PROJECT ACTIVITIES BY PROVINCIAL EMPLOYEES

| | Aklan | Bataan | Batangas | Bulacan | Davao | Pampanga | Pangasinan | South Cotabato |
|---|---|---|---|---|---|---|---|---|
| A. PROVINCIAL DEVELOPMENT STAFF | | | | | | | | |
| 1. Provincial Development Coordinator | 10% | 5% | 35% | 30% | 100% | 10% | 10% | 10% |
| 2. Deputy Provincial Development Coordinator | -- | -- | NP | 30% | NP | NP | 10% | 10% |
| 3. Project Analyst | NP | NP | 10% | 40% | NP | 20% | 10% | 20% |
| 4. Infrastructure Analyst | -- | -- | -- | -- | 5% | -- | 45% | NP |
| 5. Agricultural Analyst | -- | -- | -- | -- | -- | -- | -- | -- |
| 6. Fiscal Analyst | New | 50% | 40% | 40% | 15% | 20% | 10% | -- |
| 7. Water Resource Analyst | 100% | 100% | 99% | 95% | 100% | 80% | 100% | 90% |
| 8. Training Analyst/Officer | 50% | 100% | 60% | 10% | 50% | 40% | 100% | Assumed by the Project Analyst |
| 9. Economic Analyst | NP | NP | -- | 25% | NP | NP | NP | NP |
| 10. Senior Researcher | NP | -- | 10% | 10% | -- | 20% | 5% | 35% |
| 11. Junior Researcher | NP | -- | -- | 20% | -- | -- | -- | NP |
| 12. Statistician | NP | -- | -- | 20% | -- | -- | 5% | 10% |
| 13. Municipal/Barrio Development Specialist | NP | NP | NP | 10% | 10% | NP | NP | NP |
| B. PROVINCIAL ENGINEER'S OFFICE | | | | | | | | |
| 1. Assistant Provincial Engineer | 60% | -- | -- | -- | -- | 10% | -- | -- |
| 2. Division Chief, Planning and Programming | NP | -- | -- | 100% | -- | 40% | -- | 10% |
| 3. Barangay Waterworks/Sanitary/Civil Engineer | Assumed by the Asst. Provincial Engineer | 100% | 100% | 100% | 100% | 100% | 100% | 100% |
| 4. Waterworks Technician | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% |
| 5. Waterworks Foreman | NP | NP | NP | NP | NP | NP | 100% | 20% |
| 6. Plumber/Pipe fitter | NP | NP | 100% | NP | -- | -- | NP | 100% |
| 7. Chief, Public Utilities and Natural Resources | NP | NP | NP | NP | NP | NP | 25% | NP |

LEGEND: NP - No Position in the Organizational Structure
NI - No Incumbent

Chart 9

BARANGAY WATER SERVICE COOPERATIVE

ORGANIZATION AND FUNCTION CHART

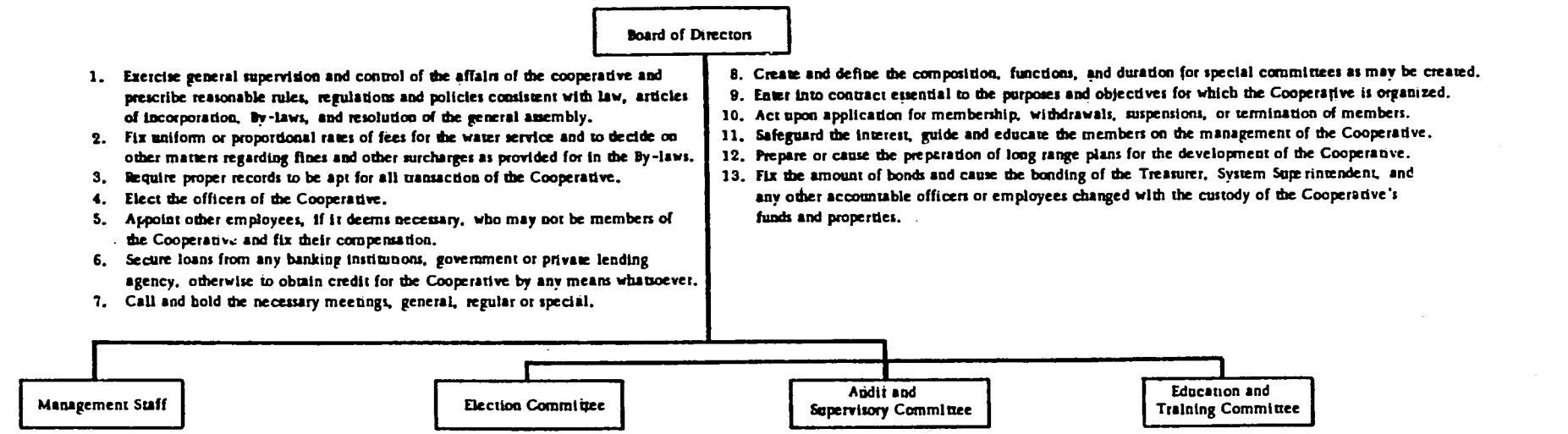
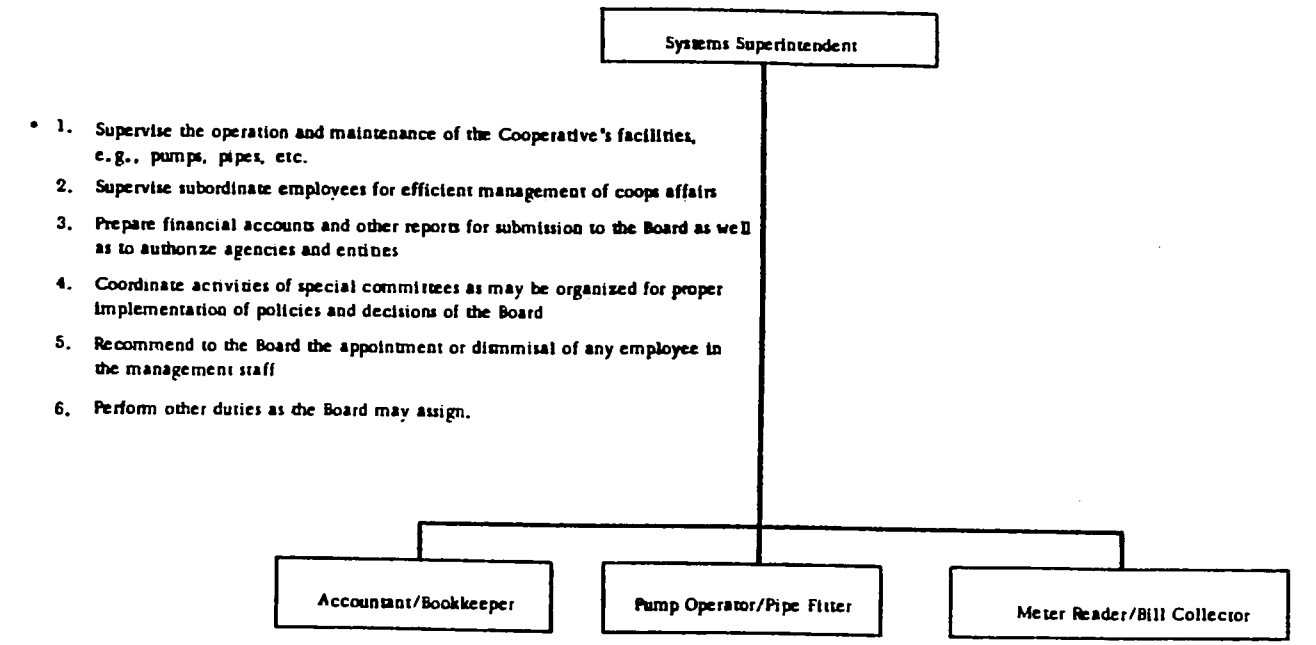


Chart 10

BARANGAY WATER SERVICE COOPERATIVE

ORGANIZATION AND FUNCTION CHART OF THE MANAGEMENT STAFF




• Per Booklet No. 6

•• Formulated by Lolomboy Waterworks Association

## D. ORGANIZATION AT THE BARANGAY LEVEL

### 1. Membership and Organizational Set-Up

The structure of the cooperative is defined in its by-laws as prescribed by the BCOD, MLGCD and contained in Booklet 6. The structure is made up of the Board of Directors, the standing committees, and the management staff.

Depending on the size of membership, the number of Directors varies from 5 to 9; 5 for those with membership up to 200, 7 for those with membership up to 400, and 9 with membership of more than 400. The Board is charged with the primary function of formulating policies for the management and operation of the BWSC and the administration of its affairs.

There are three committees constituted by the Board (Refer to Chart 9). The Election Committee composed of three members prepares election guidelines and supervises the conduct of the Board and Committee elections. The Audit and Supervisory Committee composed also of three members renders internal audit and control and prepares regular financial reports. The Educational and Training Committee has the Vice Chairman of the Board as its ex-officio Chairman, with as many members as may be needed. It is responsible in planning and implementing promotional and educational activities for the general membership, officers, employees, prospective members and the public in general.

The Management Staff is responsible for the day-to-day operations and affairs of the BWSC especially the operation of its water supply system. Members are appointed by the Board and are supposed to be full-time employees of the Cooperative. Their salaries are also fixed by the Board.

The Management Staff is headed by a System Superintendent under whom report the bookkeeper, pump operator, meter reader, bill collector, cashier, etc. depending on the financial capability of the cooperative. The Accountant/Bookeeper of the BWSC is under the Systems Superintendent for purposes of administrative supervision, but is directly responsible to the Board of Directors in the performance of his duties. (See Chart 10).

## 2. Manpower Capability of BWSC's

The Board of Directors is usually composed of the most respected members of the cooperative and come from the retired and active employees of both the private and government offices, barangay officials, and business and farmer groups. More than 80% are either college graduates or have received college education; the rest have received at least two years of high school education.

Among the Systems Superintendents, four are school teachers (3 retiree and 1 in the active service); one a resigned employee of a private business firm; two, businessmen-farmers, one, a retired postmaster; one, a lawyer and Ex-COA Regional Director; and another, an electronics engineer. While the six appointed Pump Operators are undergraduates, all are either experienced mechanics or plumbers. The four Meter Readers/ Bill Collectors are either fresh graduates or college drop-outs. Of the four appointed Bookkeepers, three are college graduates with no training or background in bookkeeping. One is an undergraduate who claims to having taken a special course in bookkeeping.

In all of the projects visited by the Evaluation Team, the Boards of Directors were active and functional. They meet regularly to discuss policies and problems of the cooperative. Except for Lolomboy whose Board members receive a per diem of ₱ 25.00 during regular monthly meetings, the Directors of other BWSCs do not receive any compensation.

Of the 14 sub-projects visited four were operational. Their respective management/manpower complements are as follows:

| Sub-project | Personnel | Monthly Salary |
|---|---|---|
| Lolomboy Waterworks Association, Inc. | Systems Superintendent | ₱ 350.00 |
| | Pump Operator | 350.00 + 120.00 COLA |
| | Meter Reader/Bill Collector | 350.00 + 60.00 COLA |
| | Secretary/Fiscal Clerk | 350.00 + 60.00 COLA |
| San Pedro Waterworks Association, Inc. | Systems Superintendent | ₱ 240.00 |
| | Pump Operator | 200.00 |
| | Bookkeeper | 200.00 |
| Ibajay Waterworks Association, Inc. | Systems Superintendent | ₱ 280.00 |
| | Bookkeeper | 190.00 |
| | Treasurer | 170.00 |
| | Meter Reader/Bill Collector | 120.00 |
| | Pump Operators/Watchman (2) | 120.00 each |
| Maloco Capilihan Waterworks Association, Inc. | Systems Superintendent | ₱ 120.00 |
| | Pump Operator/Watchman | 60.00 |
| | Meter Reader/Bill Collector | 60.00 |
| | Bookkeeper | 60.00 |

Because of a very limited initial operating fund, there is usually a doubling up of functions among personnel of BWSCs, e.g., the Pump Operator also acts as the Janitor and sometimes helps the meter reading and collection. He is also the watchman of BWSCs. The Meter Reader is at the same time the Bill Collector. The Bookkeeper does not actually perform bookkeeping functions. He/she is more of a fiscal and administrative clerk

of the Cooperative. His/her bookkeeping function is limited to making entries in the Books of Accounts. The accounting and bookkeeping aspects of the business operation are performed by licensed Certified Public Accountants who are hired on a retainer basis.

All of the 10 Systems Superintendents who are already on the job spend an average of three hours a day on their work. Only the Pump Operators devote full-time service to their positions. Because of the efficient operation of Lolomboy Waterworks Association and the volume of its business, all employees, except the Systems Superintendent, spends from two to three hours daily of his time in Lolomboy. He is also the General Manager of the Bocaue Water District.

In contrast to the very active status of the Board and the Management Staff, the organized standing committees are non-functional. Not one committee has met since their organization. Reasons vary from lack of understanding of their functions to the lack of skills to exercise such functions. While they admit that their tasks were explained to them during the organizational meeting, they feel that the time was too short for them to fully understand, much more assimilate, the topics discussed and that the atmosphere at that time was not conducive to learning.

## 3. Financial Status

The four sub-projects visited by the Evaluation Team which were operational during the period showed the following financial position as of October 31, 1979:

a) Lolomboy Waterworks Association - Cash position is a little over ₱17,000.00. This corresponds to net savings/profits after a year of operation. There are no accounts payable and no back accounts of subscribers. The Board has approved a resolution to purchase water meters to be sold at cost to new applicants in the depressed area on installment basis.

b) San Pedro Waterworks Association - Cash position is ₱17,000.00 with a collectible of over ₱2,000.00. The Board has approved a resolution to the effect that subscribers who are in arrears for two or more months have 15 days with which to settle their back accounts, otherwise the Association will disconnect their lines and allocate the meter to new applicants. So far, only one disconnection has been made.

c) Ibjay Waterworks Asscciation - Monthly collection is barely enough for the salaries of employees. Its unpaid electric bills is almost ₱15,000.00. Receivables amount to over ₱11,000.00. It has not started paying its loan interest.

d) Maloco-Capilihan Waterworks Association - Cash position is ₱1,900.00. Monthly collection is less than 50% of expected water fees. It has not paid its electric bills since the start of its operation. Receivables amount to almost ₱3,000.00

AREAS FOR IMPROVEMENT

The type of institution organized to manage the project at the barangay level may not be the popular choice of the members. Right from the start, the cooperative was imposed on them as the only structure which would have to be organized. Members were not given the opportunity to decide what is best for them. People may be compelled to join the BWSC because of their pressing need for water, but their bias against this type of organization may eventually contribute to the non-viability of the cooperative.

Due to financial constraints during their initial operation, BWSCs could not engage the services of competent personnel to run the affairs of their business. Neither could they expect new personnel to work full-time with the very low salary they are paying. These result in the inefficient operation of the water supply system. The lack of personnel and the consequent doubling up of functions likewise result in loose control of BWSC funds.

After the system has been turned over to the BWSC, it is seldom visited by personnel of the PDS. The first four months of operation is critical to the viability of the Cooperative. It needs guidance in the installation of the systems, help in resolving problems which are not familiar to inexperienced managers, and support in the identification of further training needs and in the development of both the organizational and management capabilities of the BWSC. Two reasons may be advanced for this apparent lack of follow-through:

1. Some project sites are too far from PDS offices to warrant frequent visits.

2. A belief on the part of PDS personnel that their responsibility ends with the project turn-over.

## RECOMMENDATIONS

### Institutional Linkages

1. Establish formal linkages with the LWUA, MWSS, DOH, WHO, and MPW to draw on the expereince of these agencies in the development and implementation of training programs particularly for the BWP-PMS technical personnel.

2. Strengthen the relationship with regional and local MLGCD offices to enable it to tap needed expertise which can provide support in training, community organization and cooperatives development.

### Organization at the National Level

1. Fill up vacant positions in the PMS structure to place proper emphasis on activities in the areas of training, project monitoring and evaluation, engineering review and supervision, and administrative support services.

2. Require the A & E consultants or the PMS Technical Staff to conduct timely visits to sub-projects to achieve more effective supervision over engineering design and construction works.

### Organization at the Provincial Level

Strengthen the coordinative activities of the PDS, PEO and the Provincial Water Task Force by appointing a position to assist the Provincial Governor in this capacity.

Organization at the Barangay Level

1. BWP/PMS or PDS should explore the possibility of a "Pool Management" service for BWSCs. Several BWSCs in a province can hire the services of common competent personnel or management firms to manage their systems.

2. The decision on the type of organization to be formed to manage the water system should come from the members themselves. Various types of organizational structures should be presented and discussed with the people or prospective members. These are the beneficiary-owned and controlled types which can either be a cooperative or an ordinary business association or the government-owned and controlled organizations. The Barangay Council owned and managed type of an association is of this category.

3. Considering the availability of MLGCD fieldman at the project level, formal arrangements should be made with the Ministry to tap their services not only as resource persons during training sessions and in the organization of the cooperative, but more importantly, to provide post-training and other support services to BWSCs. The viability of any cooperative depends on an enlightened membership and competent and honest officials. An enlightened membership is only made possible through effective and sustained membership education. The development of the BWSC into a viable organization should be made a part of the official responsibilities of the MDO or the BDW.

# IV. PROJECT APPROACH SYSTEMS AND PROCEDURES

This chapter presents the detailed findings, conclusions and recommendations on the following aspects of the Project:

-- Approach
-- Project Planning
-- Training
-- Barangay Cooperative Operations
-- Engineering Design and Construction
-- Project Management Information System
-- Technical Assistance
-- Project Fund Management
-- Other Administrative Procedures

## A. APPROACH

FINDINGS/CONCLUSIONS

### Major Activities

The total framework approach of the project draws direct involvement of local government units and community leaders in the different stages of project planning and implementation. This, in fact, is in line with the intermediate project objective of developing local capacity to plan, finance, design, organize and construct communal water systems and facilities. Since local government units are the implementors of the Project, activities are spread mainly and are evolved within the local set-up, likewise utilizing local personnel. The project strategy employs an approach that prior to the undertaking of major project tasks at provincial level, preparations are provided for in terms of the training support needed in order to really develop the local government and community leaders including the staff of associations/cooperatives in assuming their roles in the project. Such training received and with the aid of complete, sets of administrative procedures (covering all areas of project planning and implementation as prepared by the PMS) constitute the support given in preparing the local personnel. This project approach is illustrated in the Project Operational Framework in Chart 11.

#### 1. Planning

The project approach adopts a planning process which starts at the municipal level. As such, this employs the participation of local community leaders in coming out with the provincial water development plan which serves as the basic reference

for developing the Annual Implementation Plan for water projects. The process starts with the municipal governments' submission of listings on water projects. This is consolidated at the provincial level and a final list is arrived at using a set of selection criteria. The final sub-projects to be implemented are decided upon by the Provincial Governor upon recommendation of the Provincial Development Staff.

The viability of sub-projects is determined prior to initiating implementation works. As such, justifications are developed to support the sub-projects' feasibility in the socio-economic, technical and financial aspects. The feasibility study as a whole is undertaken by the PDS staff.

To ensure the acceptability of the sub-projects by the recipient community, an informational meeting is held by the PDS with community leaders (core group). This meeting involves discussions with community leaders on issues related to the operating assumptions and plans of the particular sub-project. Given such sub-project perspective, the community leaders now can decide for the recipients on implementation actions to be taken.

Before any of these planning steps are taken, the PDS staff concerned must have received the required training and is equipped accordingly.

## 2. Construction

Waterworks systems are constructed either through contract with private contractors or through administration under the supervision of the Provincial Engineer's Office (PEO). In this particular area of the project, the approach calls for providing technical assistance to the local government by an Architecture and Engineering (A & E) firm in collaboration with the USAID technical staff. Guidance to the PEO is likewise provided through a Technical Manual (containing Design Policies and Design Criteria) on water works system. As provided for also, training is given to the local engineering staff to equip them with the necessary know-how in the preparation of engineering plans, designs and s studies.

## 3. Funding

The project is jointly funded by the Government of the Philippines and the USAID. Funds are made available to the local government thru the MLGCD using a Fixed Amount Reimbursement (FAR) concept. Under this concept of funding, the local government advances the amount involved to construct the water system. After completion, the major portion or about 75% of the project cost is

reimbursed to the local government by the MLGCD (thru the PMS office). The local government in effect gets back the direct costs of sub-projects installed. Once the waterworks system is turned over to the recipient community, the local government further generates revenues through amortization payments by the community's cooperative. This amortization payment of the cooperatives, as provided for in the USAID-GOP agreement, must be used by the local government for other waterworks projects.

It would seem that the terms of the Project loans do not provide for repayment of the loan by the local government to the national government. Repayment of the Project loan thus becomes the responsibility of the national government.

Additionally, it must be mentioned that a comprehensive financial plan to support the province-wide barangay water system is lacking, e.g. at what point should the reimbursement system be stopped so that Provincial Governments can direct their efforts to collecting into amortization payments.

4. Institutions Building

A cooperative type of organization is formed by the recipient community as prescribed by the Project. The institution building approach involves holding a series of meeting with recipient community members to as much as possible disseminate relevant issues regarding the organization's plans and operating procedures. This is done by the PDS in close coordination with local office of the MLGCD.

Procedural Aspect

The existing project operational framework has been found to be comprehensive in procedures including documentation processes and forms. Complete details on procedures have been provided for in every component of the project from planning and implementation as contained in the following booklets:

| Booklet Number | Contents |
|---|---|
| 1 | Planning and Implementation |
| 2 | Methodology for Barangay Water Project Feasibility Study |
| 3 | Budget and Accounting Procedures |
| 4 | Contract Administration |
| 5 | Design Policies and Design Criteria |
| 6 | Barangay Financial Handbook |
| 7 | Organization and Training Manual |
| 8 | Local Government Participation, Planning and Requirements Handbook |

(Please refer to Chapter II for the description of the above booklets.)

AREAS FOR IMPROVEMENT

There are three major issues in the project approach which may be worth looking into and these are in the areas of:

-- participation of recipient communities
-- training linkages with government line agencies and the WHO
-- mechanism for repayment of the loan to the national government and the funding institution.

1. Participation of Recipient Communities

The approach as observed has not provided adequate participation of communities in the following:

-- deciding on what type of recipient organization they want
-- determining what level of service they want
-- construction inspection

a) Deciding on type of recipient organization. As of now, the recipient communities are prescribed to have a cooperative type of organization. While this is the case, the underlying principle in question is: Should the beneficiaries of a system not decide on what type of organization they want? This issue has been raised because of the claim of community leaders in the delays encountered particularly in the registration of their organization as a cooperative. Since, after all, they will own and operate the system, it may be logical to look into the possibility of giving the beneficiaries the free hand in deciding what type of organization they want to have.

b) Determining the level of service. The present project approach, as observed, does not allow participation of the recipient community in this issue. As experienced in pilot projects, while people were expecting for a Level III service, Level II service connections were put up. In one sub-project, stand faucets were installed at points not practical to the reach of target households. As gathered, no clear communication has been made related to these specific issues.

c) Construction inspection. At present, recipient communities do not participate in as far as seeing to it that actual construction works are done according to plans. As experienced in one sub-project, beneficiaries really saw obvious deviation from prescribed construction works. Again, the question is: Since the beneficiaries will own the waterworks system, should they not participate in as far of seeing to it that this is done properly?

While the above three issues may be valid, these can also have a big effect in so far as the duration of the planning and construction phases of the project is concerned, more specifically in the planning process which will definitely require more meeting with the community people. Still, these issues certainly are worth looking into.

2. Training Linkage

As an approach, no linkage in training has been established with experienced agencies such as the LWUA, MWSS, DOH and WHO which may provide assistance far better than what the project has at present.

3. Mechanism for Repayment of Loan

As noted, no mechanism is apparently provided for the repayment of the loan to the national government nor is there a formal system and procedure for prompt collection of amortization payments from barangay water cooperatives to the provincial governments. Additionally, a system might have to be worked out whereby amortization payments collected by the provincial government are not turned over to the general fund or are pooled with other provincial funds thus rendering the financial management of barrio with systems installation more cumbersome.

There could be significant factors to consider especially if fund sourcing becomes more diversified, specially with the prospective participation of the World Bank.

## B. PLANNING

FINDINGS/CONCLUSIONS

Project planning is the initial phase of the total operational framework of the Project. The output of this major activity is the Annual Implementation Plan which in turn serves as the basis for initiating cooperative organization activities at the community level and the final detailed engineering design by the PEO. The consolidation of AIPs of provinces constitutes the overall plan of the Project.

The planning process provides participation of the community and municipal leaders and officials at the provincial level in the development of the water program for the province. As such, the major duration of the planning remains at the provincial level.

The major steps involved in the planning process at the provincial level are the following:

-- preparation of Water Resource Inventory (WRI)
-- preparation of 5-year Water Resource Development Plan (WRDP)
-- development of Capital Improvement Plan (CIP)
-- pre-project selection
-- project justification
-- preparation of Annual Implementation Plan (AIP).

### 1. Relationship to the Total Framework

As designed for the program, the major steps in the planning process provide the basis for programming, training and initiating the move on cooperative organization activities.

As such, the following sequence of activities are followed:

a) Initial training (orientation training) of key local officials is scheduled prior to the formation of the Provincial Water Resource Task Force.

b) Training sessions in Engineering and Design Construction, Structural Survey and Feasibility Studies are conducted by the PMS for local government personnel prior to the province's conduct of such studies.

c) Trainors' training for local government personnel concerned is conducted prior to the initiation of community organization activities.

d) Informational meetings with the community are initiated after approval of the AIP.

This approach to the planning process thus prepares the individuals involved in the process to undertake their assigned tasks and produce the required outputs based on the schedules set by the Central Office. To a large extent, the process sets the pattern geared towards developing capability of local government personnel to undertake the required planning tasks.

## 2. Organizational Linkages

While the local government personnel assumes the planning for the PMS, the Central Office undertakes the training activities at the provincial level during the planning stage.

The entire planning process is orchestrated by the Project's Central Office. Schedules are prepared by this Office indicating clearly the activities and outputs required from each province.

## 3. Planning Procedures

The Project has established planning procedures as described in its Booklets Nos. I, Ia and Ib.

On the overall, the present project planning process is comprehensive and describes clearly specific procedures, forms and documents required at the different stages of the process.

The Central Office provides a master schedule for planning activities for each province. Despite this, however, each province is observed not to have individual planning schedules integrating all activities of the program, i.e. training, organization and construction activities. The absence of schedules at the provincial level makes it difficult for the PDS/PEO to control and effectively orchestrate Project activities.

Following are specific findings on the major stages of the planning process:

### a) Preparation of Water Resource Inventory (WRI)

The Water Resource Inventory is an organized body of information on the current water situation; resources relevant to water and plans related to water supply in the province. The WRI serves as input in the development of the provincial Water Resource Development Plan.

The present WRI, as prescribed, contains adequate information to serve the purpose of providing inputs for planning purposes. This document has been found to be useful for provinces that have developed their five-year Water Resource Development Plan for inclusion in the Capital Improvement Plan.

The procedures and forms in the development of the WRI are adequate and clear.

In the eight provinces visited, however, it was found that their WRIs have not been updated since the initial inventory was conducted. The reasons of the Provincial Development Staff for this are: a) there is no need for updating this yearly considering that a relatively small amount of information could undergo changes, and b) the amount of work required to conduct a review of such inventory on an annual basis may not be worth the effort.

With the above case, it may be worthwhile looking into possible approaches which could substantially shorten the period involved in conducting the inventory. Some provinces feel that meetings held together with barangay chairmen of the province may help update critical information such as availability of electricity, status of local organization, water development plans etc. Such meetings, however, should be done prior to the development of the Water Resource Development Plan. This arrangement can provide assurance in the retrieval of vital inputs to the Water Resource Development Plan.

b) Preparation of Five-Year Water Resource Development Plan (WRDP)

The Water Resource Development Plan describes the goals, objectives, rationale, and development strategy of the province regarding its water program.

The SRDP document becomes a part of the province's Capital Improvement Plan and serves as a vital document for pre-selection of projects to be implemented in the province.

The procedures including the format used in the development of the WRDP are quite adequate.

c) Development of the Capital Improvement Plan (CIP)

The CIP is a prescribed regular annual document prepared by the PDAP provinces describing their total plan in the areas of:

-- construction of roads and bridges

-- equipment acquisition
-- source of financing
-- acquisition of other fixed assets.

The CIP is a useful document since this provides a picture on how the water program looks in relation to the total Capital Improvement Plan of a particular province. Specifically, this document can show the particular outlay/budget for the Project in the total infrastructure budget or total general income of each province.

Based on documents examined, the Project budget in the provinces ranges from 4.5% - 37% of the infrastructure budget and about 2.5% - 34% of the general fund. To be gleaned from these figures, is the local governments' emphasis in their water programs.

The above information (among others found in the CIP) can be likewise utilized as one of the bases for evaluating the financial capability of any particular province in pursuing its water program.

All provinces visited do not presently encounter any difficulty in coming out with their CIPs.

d) Pre-Project Selection

This process takes place after the WRI, WRDP and CIP have been finalized.

The list of projects to be implemented for the year at this stage is finally decided by the Provincial Governor upon recommendation of the PDS, consistent with resources and existing program thrust of the province.

In the last evaluation conducted, it was recommended that a study be conducted covering the socio-economic and technical aspects of the sub-projects. This was suggested to avoid selection projects which do not fit the target beneficiary group and to ensure the adequacy of electrical power, reliability of source and other conditions that may make difficult the implementation of the proposed sub-projects. Such procedures is currently being followed. Consequently, existing procedures have now been refined to ensure proper pre-selection of sub-projects.

e) Project Justification

The rationalization process is undertaken through feasibility studies conducted by the local government in the areas of socio-economic, technical and financial aspects of sub-projects.

Based on the results of the feasibility studies, adequate information can be derived to determine the viability of sub-projects.

The existing guidelines and procedures in the preparation of these studies are, in general, quite adequate. The specific findings on existing procedures are discussed in detail in the Feasibility Study portion of this report.

f) Preparation of Annual Implementation Plan (AIP)

The AIP describes the province's individual annual plan on waterworks projects. This document shows the list of priorized projects (whose aggregate fixed amount reimbursement approximately equals the preliminary provincial allocation previously established by the MLGCD) and the program/project implementation schedule.

Together with the AIP, each province submits its cash flow projection (Form BW-21), the Feasibility Study, Preliminary Engineering Report, population projection data (Form BW-01), and Project Justification Sheet (Form BW-02).

The AIP together with other supporting documents required provide adequate information for the Project Management Staff to evaluate and justify the implementation of sub-projects in each province.

Procedures and forms prescribed in the preparation of the AIP are adequate and clear.

There is, however, an absence of an integrated program/ schedule of activities for the entire Project in the province covering training, barangay water cooperative organization and construction by the PEO despite the presence of a master schedule prepared by the PMS on which they can base this. This is important if Project activities at the provincial and barangay levels are to be better coordinated.

RECOMMENDATIONS

1. Adopt a methodology which will shorten gathering/ updating of information for the Water Resource Inventory. An interim measure could be to conduct regular meetings with barangay leaders to obtain from them vital water resource data.

2. Require the local government units to develop individual integrated water implementation plan covering the areas of training, construction and organization of water cooperatives.

## C. TRAINING

In the context of the total Project framework, training is seen as the principal vehicle towards achieving the program's purpose:

> "to develop the capacity of local government units to plan, finance, design, organize and construct communal water systems and facilities which... recipient communities can successfully manage and operate."

It is in this light that training is considered as "the major and most significant component of the BWP."

Within the total program framework, a series of training activities is planned to run parallel with the different stage of program implementation from the planning, through the construction, up to the operation stage. As envisioned, these training activities are conducted on three (3) distinct levels of program implementation, thus:

--
-- National Level
-- Provincial Level
-- Community Level

On each given level of training activities, the corresponding training objectives, target participants, curricula, and organization have been identified in such a way that they are managed independently of each other as well as integrated into one overall training programme.

### National Level

At the national level, training has been planned for the BWP Project Management Staff (PMS) on specialized topics: technical, managerial and organizational. The objective of such training is to equip the BWP-PMS with the necessary organizational, engineering, training and planning expertise to manage the program on the national level.

Such training will include both on-the-job and formal training at the University of the Philippines, LWUA, MWSS, and Development Administration Training Program. On-the-job staff development was likewise envisioned to be provided for by USAID consulting engineers under the grant, and by an A & E firm, which was later contracted to provide technical engineering assistance.

At a later date, a permanent training institution, possibly to be set up by LWUA, was planned to be utilized for this purpose.

Within the PMS, the Training and Organization Division (TOD), assisted by the two other divisions, is primarily responsible for the planning, organization and management of all training activities conducted at the provincial level. In addition, the functions of the Training and Organization Division also include: (1) the development of course syllabi and training guides to be used at all program levels, and (2) assistance and supervision of local government units in the organization and training of the BWSC's. Further, the TOD is assigned the task of providing continuing staff development for the PMS. (For complete statement of TOD functions, see Chart 3).

To date, after the reorganization of the PMS, the TOD is composed of one Supervising Organization and Training Coordinator, one Water Program Training Coordinator, one Training Assistant and two Statisticians. Several other technical positions are vacant: 1 Sr. Management Specialist, 1 Sr. Training Officer, 1 Training Officer, 1 Records Officer and 1 Information Officer.

Aside from the technical assistance coming from the Monitoring Evaluation and Statistics Division and the Engineering Review and Supervision Division of the PMS, coordination on the national level is maintained by the PMS-TOD, with the following:

-- The Training and Management Division of PDAP for logistic and administrative support.

-- USAID engineering staff and A & E firm for technical assistance in the design and conduct of training program conducted at the provincial level.

-- BCOD for technical advice in the development of training materials as well as for the actual conduct of training for the Provincial/City Development Staff, in relation to organizational training.

Provincial/City Level
(Local Government Unit)...

The general objective of training at the provincial level is

> "to develop the capability of local government units to plan, organize, install, and manage functional barangay cooperative water systems."

The responsibility for the training of personnel on the provincial level is assigned to the BWP-PMS, specifically the TOD, and the other cooperating agencies, as discussed earlier.

Target participants of the provincial/city training effort include: the provincial/city development coordinators, the provincial city training officers, provincial/city fiscal analysts, and research statistician. Initial orientation and in-service training seminars will also be provided for representatives of cooperating agencies, such as: provincial/city health officer (MOH), provincial/city development officers (MLGCD), and representatives from the MPW, the governors/mayors, and members of various Sangguniang Panlalawigan (Provincial Legislative Councils).

A basic training package for the training of LGU's has been prepared by the PMS and is outlined in Administrative Procedures: Training Guide (Booklet No. 7).

The training package is classified into several types/ categories as follows:

I. Orientation Training

II. Seminar-Workshop on the Methodology of Conducting the Structural Survey and Feasibility Study

III. Seminar-Workshop on Design and Construction of Water Supply System

IV. Corps of Trainors' Training

V. Special Skills Training for Waterworks Technicians.

Orientation Training is conducted for the benefit of certain local government officials as a pre-requisite to the formation of the Provincial/City Water Resource Task Force.

Training on Structural Survey/Feasibility Study precedes the actual conduct of the Feasibility Study.

Training on Engineering Design and Construction - conducted in preparation for the formulation of detailed engineering plans and specifications, as well as the pre-engineering report.

Trainors' Training - intended to be preparatory to the organization of BWSC.

Skills Training for Waterworks Technician - prepares the technicians to operate, maintain and repair the waterworks systems, prior to the actual turnover of the systems.

By thus running parallel with the planning, organization, and construction activities of the local government units, training on the provincial/city level serves as an essential mechanism enabling the LGU's to plan and implement the BWP at their level.

Community Level (Barangay Water Service Cooperative)

The objectives of training on the community level is

> "to develop strong local institutions with the capacity to operate, maintain, manage and finance the water systems conducted under this program."

The major types of training programs conducted on the community level are:

I. Initial Training

- Pre-organizational
- Organizational
- Continuous

II. Pre-Operations Training
III. Post Comple ion Training
IV. Special Tr. nings.

The training function at the community level is assigned to the PDS and PEO with assistance from the appropriate local agencies (MLGCD, MOH, etc.) The PMS also provides assistance by developing all pertinent training guides and curricula. Further, the PMS assists and supervises LGU's in the organization and training of BWSC.

Given the major objective of community-level training, e.g., the organization of BWSC, discussion of community level training logically belongs to the Barangay Water Service Cooperative portion of this report. (Refer section on Barangay Water Service Cooperative).

STATUS

The status of the training component of the Project is discussed in terms of

-- an assessment of the overall training component: program framework and approach

-- the quantitative outputs of the training effort

-- the adequacy of the different elements of the training system.

## 1. Evaluation of the Total Training Component: Program Framework and Approach

The program framework and approach of the Project training component is analyzed against the following criteria:

-- relevance and comprehensiveness of training in the total context of the Project (e.g., training component vs. planning construction and organization components)

-- integration of formal vs. informal (on-the-job) training activities

-- synergy between the affective and cognitive dimensions of the learning strategy (or balanced emphasis between the learning process and the technical content)

-- complementarity between the experiential and the transmittal approach to learning.

### a) Training in the Total Program Context

The entire training framework suffers from a lack of the informal training element. Specific on-the-job and follow-up training activities, which would complement the more formal classroom instruction sessions, have not been identified in the total master plan. (See discussion on Integration Between Formal and Informal Training).

On the formal aspect, the training package is quite comprehensive in meeting all the formal training requirements of the Project. Also the strategy of implementation, by which formal training activities synchronize with the planning, organization, an and construction stages of the program, prove to be quite effective.

Two training courses, however, need to be included as part of the package:

-- Training on water resources development planning
-- Trainors' training (the how of the training process)

Training on WRD Planning. Though the initial WRD plan is not expected to be technically rigorous, subsequent generation of WRD plans would benefit from some training input. To date, this need seems to have been recognized already inasmuch as the PMS is in the process of developing such a course.

Trainors' Training. A formal training for trainors with the objective of developing strictly trainors' skills in planning, designing, implementing, and evaluating training programs, is not part of the training package. The present so-called "Trainors' Training" does not meet this particular objective, since the present course is, more than anything else, merely an orientation on the Project.

The envisioned course on Training the Trainors would concentrate on the learning process: how to facilitate learning, both through the development of the appropriate learning materials, plans, and strategy as well as their actual implementation through the effective use of training techniques and methodologies. The end result of such training is not so much the competency of a subject matter specialist, but rather that of a learning specialist: one who appreciates how learning takes place, whether by the individual alone or by the individual in a group, and one who can facilitate the process of learning by creating the necessary learning atmosphere, structures and activities needed to achieve a given learning objective.

Such a Trainors' Training course should be conducted for the PMS, to equip them with the necessary trainors' skills. Likewise, the PDS training package has to include one such similar course as a preparation for their function as trainors on the community level.

(For the specific content areas of such a course, see RECOMMENDATIONS).

b) Integration Between Formal and Informal Training

Informal training activities conducted on the job, serving as a follow-up of formal classroom training, is not given sufficient consideration in the training framework. The present practice of field monitoring does not sufficiently meet the requirements of follow-up/on-the-job training, inasmuch as such field monitoring activities do not perform the following functions in a sustained and systematic manner:

-- Follow-up training is needed to provide trainees with the needed coaching assistance in their effort to apply on the job what they have learned during formal training sessions. To effect transfer of learning from the more structured classroom situation to the on-the-job situation, trainees must receive the direct supervision and coaching of a trainor, after the pattern of a mastercraftsman-apprentice relationship. Learning, in other words, is not completed until the trainee's on-the-job behavior has been effectively changed.

-- Follow-up training is needed to make sure that the output requirements of the job are being met (in this case, the output requirements of the planning organization and construction components). The ultimate measure of training effectiveness being performance outputs, training effectiveness can only be monitored, ultimately, in the on-the-job situation. Such monitoring activity will then serve as the integrative link between formal training and the planning, organization, and construction activities of the program.

c) Synergy Between Affective and Cognitive

The basic training approach is predominantly logical and proceeds along a linear thinking process. But since learning occurs best in a holistic manner, it is necessary to involve the affective domain of the learner's psychology. Thus, attention must be paid both to the intra-personal, interpersonal and inter-group dynamics which affect learning: communication, motivation, competition, collaboration and leadership dynamics.

In this connection, therefore, the learning strategy must address not only what must be learned (content orientation), but also how it is learned (process orientation). Following adult learning principles, the trainee learns best when he understands and resolves himself all the different dynamics that accompany the learning process. This synergy is shown in schematic form in the diagram following. (Further elaboration on this approach is given under RECOMMENDATION).

d) Complementarity Between the Experiential and Transmittal Process

Corollary to the affective dimension of learning, the deductive process of learning is seen as an important aspect of the training strategy.

The experiential, rather than the transmittal process of learning, has therefore to be strengthened in the present training approach. At present, the preponderance of lecture sessions seems to indicate the extensive use of the transmittal process. Using the experiential approach participants would, for instance, be asked to perform certain tasks or operations prior to any theory input. The "experience" of doing said task would then be "processed", leading to the formulation of certain concepts, principles and theories. The concepts, as deduced from experience, would then serve as a guide in the application phase of learning.

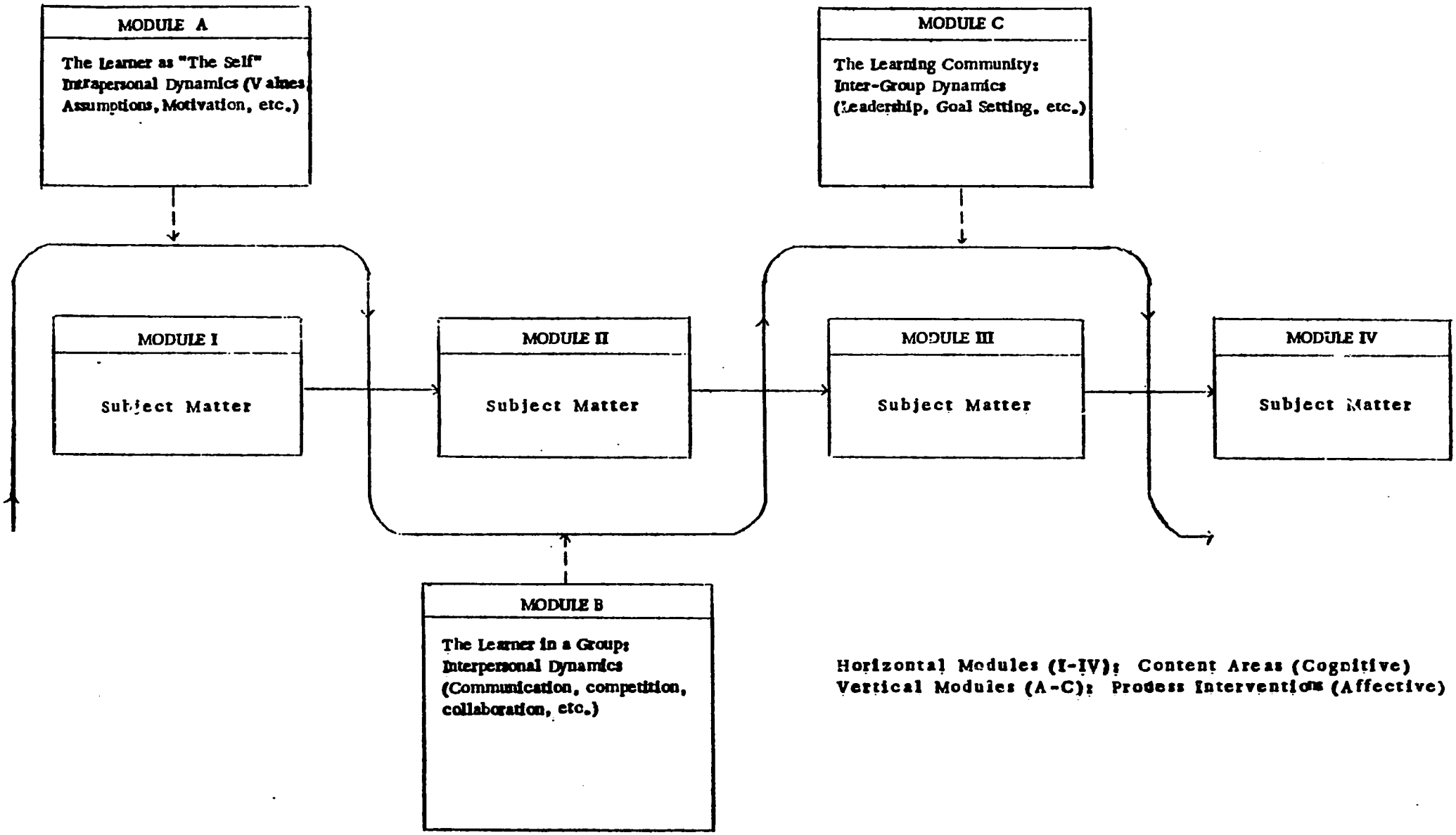
2. Quantitative Outputs of the Training Effect

a) National

There have been two formal training programs held primarily with the BWP-PMS as target participants: The Administration Procedures Development Workshop of January 1977 and the Training on the Analysis of Socio-Economic Survey Data, December, 1978. Additionally, the PMS as a body, jointly with PDS participants, held a seminar workshop on the Methodology of Conducting Socio-Economic Study and attended the Trainors' Training on the Methodology of Socio-Economic Study.

Complementing this formal training effort, some PMS members take the opportunity of acquiring further knowledge while serving as training staff of the provincial training programs.

## SYNERGY OF THE AFFECTIVE AND COGNITIVE DIMENSIONS IN TRAINING



However, the management training for the PMS, envisioned to be conducted at the start of each fiscal year, did not materialize. Likewise, formal training which the 1978 In-house Evaluation Study recommended to have been attended by PMS members at certain institutions, was not pursued.

b) Provincial/City

Table 3 shows the training programs conducted from 1977 to 1979 and the corresponding number of attending LGU's and number of participants in chronological order.

Table 4 gives the duplicated count of provinces and cities which attended BWP-training programs, according to program type per year (1977-1979).

Tables 3 and 4 can be summarized as follows:

- Number of LGU's Trained - All told, there were 38 LGU's which have either began or completed the basic training package, broken down as follows on a per batch classification:

| LGU's | Training Dates |
|---|---|
| 7 pilot provinces | Jan. 1977 to Sept. 1979 |
| 5 1978 provinces and 2 1979 provinces (Mindoro Or. and Samar) | Aug. 1977 to Sept. 1979 |
| 6 1978 pilot cities and Sorsogon | Nov. 1977 to Sept. 1979 |
| 8 1979 provinces and cities | Feb. 1979 to Sept. 1979 |
| 5 1980 provinces | Oct. 1979 |
| 5 1980 cities | Oct. 1979 |

Of the 38 LGU's there are 12 cities and 27 provinces.

Number of Training Programs - A total of 22 separate training programs, on the different topics of the training package, have so far been conducted for participating LGU's.

| Year | No. |
|---|---|
| 1977 | 8 |
| 1978 | 7 |
| 1979 | 7 (as of October 1979) |

Table 8

BARANGAY WATER PROGRAM
TRAINING ACTIVITIES CONDUCTED IN CHRONOLOGICAL SEQUENCE
CY 1977 - CY 1979

| | Date | Training Activities | No. of Provinces/Cities / No. of Provinces/Cities | No. of Participants | | No. of Days Training | |
|---|---|---|---|---|---|---|---|
| 1977 | January, 1977 | Administrative Procedures Development Workshop | BWP Staff | | | 5 | |
| | February, 1977 | Initial Training for Pilot Provinces | Seven (7) Provinces | 51 | | 4 | |
| | April, 1977 | Training for Provincial Trainors | Seven (7) Provinces | 50 | | 3 | |
| | April, 1977 | Design and Construction of Water Supply System | Seven (7) Provinces | 36 | | 8 | |
| | August, 1977 | Special Skills Training for Waterworks Technicians | Thirteen (13) Provinces | 26 | | 5 | |
| | September, 1977 | Training for Provincial Trainors | Fifteen (15) Provinces | 22 | | 3 | |
| | October, 1977 | Design and Construction of Water Supply System | Fourteen (14) Provinces | 28 | | 11 | |
| | November, 1977 | Orientation for Pilot Cities and Sorsogon | Four (4) Cities/one (1) Province | 26 | | 2 | |
| | November, 1977 | Feasibility Study Training | Fourteen (14) Provinces/one (1) City | 39 | 276 | 4 | 45 |
| 1978 | April, 1978 | Design and Construction of Water Supply Systems | Five (5) Cities/Four (4) Provinces | 19 | | 9 | |
| | May, 1978 | Provincial/City Corps of Trainors Training | Two (2) Cities/one (1) Province | 10 | | 5 | |
| | July, 1978 | Seminar-Workshop on the Methodology of Conducting Socio-Economic Study | Three (3) Provinces/BWP | 8 (+4 staff) | | 7 | |
| | September, 1978 | Supervisors Training on the Methodology of Socio-Economic Study | Twelve (12) Provinces/Four (4) Cities | 18 | | 3 | |
| | September, 1978 | Trainors Training on the Methodology of Conducting Socio-Economic Study | Two (2) Provinces/BWP | 3 (+7 staff) | | 2 | |
| | September, 1978 | Enumerators Training on Methodology of Conducting Socio-Economic Study | Twelve (12) Provinces/Four (4) Cities | 48 | | 5 | |
| | December, 1978 | Analysis Training | BWP Personnel | 6 | | 4 | |
| | December, 1978 | Tabulation and Feasibility Studies Training | Twelve (12) Provinces/three (3) Cities | 20 | 132 | 5 | 40 |
| 1979 | February, 1979 | Initial and Re-orientation Training* | Fourteen (14) Provinces/five (5) Cities* | 38 | | 3 | |
| | May, 1979 | Design and Construction of Water Supply Systems | Thirteen (13) Provinces/four (4) Cities | 44 | | 10 | |
| | May, 1979 | Seminar-Workshop on Structural Survey and FS | Seven (7) Provinces/one (1) City | 17 | | 5 | |
| | June, 1979 | Special Skills Training for Waterworks Technicians | Six (6) Provinces/three (3) Cities | 17 | | 5 | |
| | September, 1979 | Corps of Trainors Training | Twelve (12) Provinces/three (3) Cities | 38 | | 5 | |
| | September, 1979 | Refresher Skills Training for Waterworks Technicians | Eighteen (18) Provinces/four (4) Cities | 45 | | 5.5 | |
| | October, 1979 | Orientation Training | Five (5) Cities/Six (6) Provinces | 69 | 269 | 3 | 36.5 |
| | | | TOTALS | | 677 | | 121.5 |

*For the 3-day orientation, 7 provinces and 2 cities attended. Additional 7 provinces and 3 cities joined at the re-orientation portion held on the last day.

Table 4

NUMBER OF PROVINCES/CITIES* WHICH RECEIVED BWP TRAINING, PER TYPE OF PROGRAM, PER YEAR (1977-1979)

| | 1977 | | | 1978 | | | 1979 | | |
|---|---|---|---|---|---|---|---|---|---|
| | Provinces | Cities | Total | Provinces | Cities | Total | Provinces | Cities | Total |
| 1. Orientation | 7 | -- | | -- | -- | | 7 | 2 | |
| | 1 | 4 | 12 | | | | 6 | | |
| | | | | | | | 7 | 3 | 30 |
| (Re-orientation) | | | | | | | | | |
| 2. Engineering Design and | 7 | -- | | 4 | 5 | 9 | 13 | 4 | 17 |
| Construction | 14 | -- | 21 | | | | | | |
| 3. Skills Training for | 13 | -- | 13 | -- | -- | -- | 6 | 3 | |
| Waterworks Technicians | | | | | | | 18 | 4 | 31 |
| 4. Feasibility Study | 14 | 1 | 15 | -- | -- | -- | -- | -- | -- |
| 5. Socio-Economic Study: | | | | | | | | | |
| - Workshop | -- | -- | | 3 | -- | 3 | -- | -- | -- |
| - Supervisors' Training | -- | -- | | 12 | 4 | 16 | -- | -- | -- |
| - Trainors' Training | -- | -- | | 2 | -- | 2 | -- | -- | -- |
| - Enumerators' Training | -- | -- | | 12 | 4 | 16 | -- | -- | -- |
| 6. Tabulation and Feasibility Study | -- | -- | | 12 | 3 | 15 | -- | -- | -- |
| 7. Structural Survey and Feasibility Study | -- | -- | | -- | -- | -- | 7 | 1 | 8 |
| 8. Trainors' Training | 7 | -- | | 1 | 2 | 3 | 12 | 3 | 15 |
| | 15 | -- | 22 | | | | | | |
| TOTALS | 78 | 5 | 83 | 46 | 18 | 64 | 76 | 25 | 101 |

3-Year Total: Provinces: 200
Cities: 48
248

*Based on duplicated count, province/city is counted as many times as it attends any number of programs.

- Number of Training Days - In terms of number of training days, the training effort accumulated a total of 112.5 training days.

| Year | No. |
|---|---|
| 1977 | 40 |
| 1978 | 36 |
| 1979 | 36.5 |

- Number of Participants - Number of participants who attended training totals 668*:

| Year | No. |
|---|---|
| 1977 | 276 |
| 1978 | 123 |
| 1979 | 269 |

- Type of Training Program Conducted per Province/City - The basic training package, in its present form, adheres closely to the original, with two major revisions:

  -- The Feasibility Study Training and the Socio-Economic Study Training have now been combined into one single program: Structural Survey and Feasibility Study Training, as of May 1979.

  -- The Training on Engineering Design and Construction of Water Supply System has been expanded to include not only detailed plans and specifications, but also the preliminary engineering report.

Thus, the present training package as revised, consists of the following:

-- Orientation
-- Trainors' Training
-- Structural Survey and Feasibility Study
-- Engineering Design and Construction (including Preliminary Engineering Report)
-- Special Skills Training for Waterworks Technician.

*668 is duplicated count: Each participant is counted as often as he attends any given number of programs.

As a whole, most of the participating provinces/cities received the complete training package at the appropriate time, with some exception. The training package, as first conducted for the pilot provinces, could not be replicated for the subsequent batch of LGU's because of certain changes in program mechanics. Thus, certain programs, specifically Feasibility Study Training and Socio-Economic Study Training, had to undergo changes consistent with improvements on the study formats.

Appendices 2 to 7 give the job positions of training participants, by province/city and by program:

Appendix 2: CY 1977 provinces

(Aklan, Batangas, Bulacan, Capiz, Palawan, Pangasinan, South Cotabato).

Appendix 3: CY 1978 Provinces

(Bataan, Davao Norte, Iloilo, La Union, Misamis Oriental)

Appendix 4: CY 1978 Pilot Cities and Sorsogon

(Dagupan, Naga, Cagayan de Oro, Puerto Princesa, and Roxas Cities).

Appendix 5: CY 197 Provinces and Cities

(Agusan Sur, Camarines Sur, Cebu, Mindoro Oriental, Pampanga, Quezon, Samar, Zambales, Butuan City and Gen. Santos City)

Appendix 6: CY 1980 Provinces

(Abra, Albay, Agusan Norte, Cagayan, Mindoro Occidental)

Appendix 7: CY 1980 Cities

(Angeles, Batangas, Legaspi, Lanao, Zamboanga and Tangul)

Analysis of these tables follows:

Pilot Provinces

-- All pilot provinces (original 7) have completed the entire training package in its original version.

-- All pilot provinces have attended at least twice the following course offerings:

  o Trainors' Training
  o Engineering Design and Construction
  o Waterworks Technicians' Training.

-- Aklan, Palawan and Pangasinan have attended a third Trainors' Training (Sept. 1979).

-- Capiz, Aklan and Pangasinan have attended a third training on Engineering Design and Construction (the expanded version)

-- And Aklan, Capiz and Palawan have also attended a reorientation training (Feb. 1979).

-- None of the pilot provinces have attended training on the new Structural Survey and Feasibility Study.

-- Except for Capiz, Aklan, and Pangasinan, the pilot provinces have not yet attended the revised training program on Engineering Design and Construction.

-- To date, the Project has conducted training on different topical areas, on 16 separate occasions, for the pilot provinces, between Feb. 1977 to Sept. 1979.

1978 Provinces (Bataan, Davao Norte, Iloilo, La Union, Misamis Oriental).

-- No formal orientation was given to these provinces, although Bataan, Davao Norte, Iloilo and Misamis later attended a one-day "re-orientation" training in Feb. 1979.

-- All five of these provinces completed Trainors' Training with La Union attending a second Trainors' Training (Sept. 1979).

-- The newly developed Structural Surveys/FS Training has not been conducted for these LGU's, although they have received training on the former Socio-Economic and FS format.

-- Training on Engineering Design (new version) was attended by all four provinces, except La Union. However, with no exception, all five provinces have attended the former version of this course.

-- Waterworks Technicians' Training was completed twice by all five provinces (1977 and 1979).

-- All in all, the five 1978 provinces attended training on 13 different occasions, from Aug. 1977 to Sept. 1979.

1978 Cities (Dagupan, Naga, Cagayan de Oro, P. Princesa and Roxas) and Sorsogon.

-- Orientation training was given to all six LGU's except for Cagayan de Oro. In addition, Naga Puertc Princesa and Roxas cities attended a one-day re-orientation in Feb. 1979.

-- Trainors' Training was completed only by Roxas City.

-- The former version of FS and Socio-Economic Study Training was completed by all six, but not the new Structural Survey and FS Training course.

-- All units completed the training on Engineering Design and Construction (old version).

-- Training on Engineering Design and Construction (new version) was attended by all, except Dagupan City and Naga City.

-- Waterworks Technicians' Training was completed by only three, and was missed out by Dagupan and Naga cities.

-- All in all, the 1978 cities sent representatives on 10 different training occasions, from Aug. 1977 to Sept. 1979.

1979 Provinces and Cities (Agusan Sur, Camarines Sur, Cebu, Mindoro Or., Pampanga, Quezon Samar, Zambales and the cities of Butuan and Gen. Santos).

-- Orientation was given to all, except Pampanga

-- Trainors' Training was completed by all, except Agusan Sur

-- Structural Survey/FS Training was completed by all, except Mindoro Or. and Gen. Santos City

-- Engineering Design and Construction (new version) was attended by all, except Mindoro Oriental and Gen. Santos City

-- Waterworks Technicians' Training was completed by all except Agusan Sur, Quezon and Butuan City.

-- In addition, Mindoro Or. and Samar, originally with the 1978 provinces, have attended the following 1977 training:

  - o Samar - Trainors' Training
  - o Mindoro Or. - Waterworks Technicians' Training
    - Trainors' Training
    - Engineering Design and Construction

-- 1979 provinces and cities participated in Project training on five separate occasions. Mindoro and Samar, in addition, attended training on three more occasions in 1977.

1980 Provinces (Abra, Albay, Agusan Norte, Cagayan and Mindoro Oriental).

1980 Cities (Angeles City, Batangas City, Legaspi City, Lucena City, Zamboanga City and Tangub City).

-- All the above 1980 provinces and cities have attended the Orientation training, except for Tangub City.

-- In addition, Cagayan, originally with the 1978 batch, has attended three more trainings in 1977, as follow:

  - o Trainors' Training
  - o Engineering Design and Construction
  - o Feasibility Study

## 3. The Training System

This portion discusses the different elements of the training system.

### a) Training Plans

National. No specific training plan has been developed for the continuous staff development of the PMS. Need for such training plan was already identified in the 1978 In-house Evaluation, but such plan did not materialize.

Provincial. The BWP training plans appear in the following forms:

-- Training Guide (Administrative Procedures Booklet No. 7): discusses the entire training package and states the rationale, objectives, content, prospective participants, and duration of each course.

-- Training Designs: developed for each training program and patterned after the training guide in content and format. Additionally, it also contains a portion on financial requirements. This document serves primarily as a pre-requisite for release of training funds from MLGCD.

-- Schedule of Training Activities: enumerates session titles, with its corresponding time schedule and training staff, per session.

An analysis of these training plans leads to the following conclusion: There are no course designs to speak of in the sense of training syllabi purposely designed as a learning tool to be used by both trainors and trainees and as basis for evaluating training effectiveness.

All three (3) documents enumerated above are far from adequate to qualify as course design/training syllabus, in so far as they lack the following essential features of a course design/training syllabus. (i.e., behavioral training objectives and lesson plan).

b) Course Content

As a whole, the content of the different training courses are relevant and comprehensive.

An analysis of the different program categories leads to the following conclusions:

Trainors' Training. The present course on Training the Trainors is, more than anything else, an orientation on the different aspects of the project. At most, only one day is devoted to the discussion of strictly trainors' skills and knowledge, which is hardly adequate to develop competency in training.

The required Trainors' Training course has been described earlier. (see 1.1 Evaluation of the Total Program Component).

Structural Survey/Feasibility Study Training. The content of this training has been modified, consistent with the revised format and procedures recently adopted. In its present state, the course content looks simpler and more responsive to program requirements.

Engineering Design and Construction Training. From the assessment of both trainees and training staff, the course content of the training program on engineering design is considered very comprehensive and thorough, and could hardly be improved on.

Waterworks Technicians' Training. Content is adequate as a whole. However, from another angle, content is inadequate relative to one of its specific objectives, (e.g., to equip waterworks technicians with trainors' skills with which to train BWSC operators).

c) Training Methodologies and Techniques

As could be gleaned from the existing training materials and from the observation of some sessions, the training approach is highly cognitive. As discussed earlier the approach suffers from lack of the affective dimension of learning, a necessary element in the trainee's motivation, commitment and interest to learn. Flowing from this basic approach, the specific training techniques used do not include those that address themselves to the learning process as a process of change.

(For specific examples of these techniques that facilitate change in the learner, see RECOMMENDATIONS.)

d) Training Materials

The BWP staff now conducting training on the provincial level rely on the Training Guide (Booklet No. 7), the different operations manuals, and the training schedule, in their conduct of training programs.

A training syllabus, specifying the different learning objectives, activities and methodologies per session, would be essential. A "Trainors' Manual", which spells out the step-by-step procedures of implementation, would be ideal.

The material used for the training on engineering design and construction, though it delineates step-by-step implementation, could also be further improved on by the inclusion of exercises/ sample operations, and included in Booklet No. 5

e) Management and Organization of the Training Functions

Staff Profile. The BWP **Training and Organization** Division, which is primarily responsible for developing and conducting training programs for LGU's, is greatly undermanned, quantitatively and qualitatively. The profile of the staff indicates a need for training on the strictly technical functions of training (designing, implementing and evaluating training programs).

And although the other Program staff pitch in to help, they do not have the trainors' perspective and competence required in program development and implementation.

The PDAP personnel can not also be relied on to perform the more technical functions of training, inasmuch as its role has been clearly delineated as merely administrative in nature.

In terms of number, the manpower complement of TOD can be greatly reinforced if the five existing technical positions now vacant are filled.

Roles and Functions. These are clearly and formally defined.

In the actual exercise of these roles and functions, however, the head of the Training and Organization Division performs more administrative functions than would be desirable. Further

she also acts de facto, as assistant Project Director, a role which further takes her time away from the more technical aspects of training.

Planning and Development. The function of developing training curricula and trainors' guides, a function of the T and O Division, seems to be relatively unattended to. The only materials development functions being performed now are more for operations, not for training purposes.

Control and Evaluation. There is no existing system and therefore no sustained activity for evaluating effectiveness of the training effort, as can be gleaned from the following:

-- lack of clearly defined criterion-reference learning objectives

-- lack of the required forms and procedures for reporting and data gathering. (What is obtaining now is a report on training activities submitted for the purpose of funds liquidation)

-- and, in general, lack of a total evaluation scheme or framework, which would define evaluation objectives, standards, and indicators.

At present, the only existing evaluation mechanism,is the participants' reaction form. These reaction sheets, moreover, remain in their raw form, untabulated and, therefore, unutilized.

Monitoring of trainees' turnover, after attending a certain program, is also not done at present. Thus, it is not possible to say how many of the present PDS personnel have received training on the Project.

Further, evaluation reports on training conducted do not follow any standardized format. Usually, such reports would be activity-oriented and lack any analysis.

Filing of evaluation reports is also haphazard.

Administration. As regards the actual administration of training programs, the following are the pertinent findings:

-- Problems are encountered regarding the selection of participants: the LGU's send participants who do not meet, **recruitment criteria or perform function for which the training is intended.**

-- There is a high rate of turnover of trainee-graduates, thereby resulting in new, untrained incumbents on the LGU level.

-- Participants' attendance, though monitored, is not used as criteria for course completion so that a number of trainees, while not attending the entire course, still "graduate" from the course.

-- Training schedule is sometimes not followed because of delay in the release of training funds, both on the part of MLGCD and the LGU's concerned.

AREAS FOR IMPROVEMENT

Based on the findings discussed in the preceding the following areas have been identified for improvement.

1. Training Approach and Framework. Certain strategies and components need to be incorporated into the present framework.

2. Basic Training Package. A number of separate courses would have to be included into the Basic Training Course for PDS, as well as the Training for PMS.

3. Personnel/Staff Development (PMS). The number and competence of BWP-PMS training personnel need to be increased and enhanced.

4. Training System. The training system has to be improved upon in the following areas:

-- Designing and Developing the Training Program
-- Training Techniques and Methodologies
-- Monitoring and Evaluating the Training Program
-- Institutional Linkages.

RECOMMENDATIONS

In line with the areas of improvement identified above, the following recommendations are forwarded to further enhance training effectiveness.

1. Training Approach

To inform training activities with a holistic approach, the following dimensions have to be incorporated into the present framework:

-- Include systematic on-the-job/follow-up training activities to complement formal classroom instruction. Objectives of such follow-up training are: 1) to transfer learning from the classroom situation to the on-the-job situations through job coaching 2) to monitor task accomplishments of trainees, as called for by the program and thereby guarantee output-generation.

-- Integrate process-orientation into training. The objectives of such an approach is to facilitate the learning process by properly assisting the learner to be open to change (learning basically a change process), by internalizing change (new knowledge, attitude or skills) and by integrating the change into his whole behavior pattern and world construct.

-- Introduce more explicitly experiential mode of learning. This approach would be an "inverted process" of learning, proceeding from a particular incident/experience to generalization (concepts and principles). Hence, more problem-solving and simulation exercises should be devised, side by side with case studies, practicum, and workshops.

## 2. Basic Training Package

The PMS and certain members of PDS need to undergo a Trainors' Training course. Areas to be included are:

-- Planning

- o Identifying Training Needs
- o Formulating Training Objectives
- o Designing Training Syllabus
- o Developing Training Materials

-- Implementing

- o Facilitating Skills
- o Training Methodologies and Techniques
- o Administering Training Programs (Budgeting, Coordinating, etc.)

-- Evaluating

- o Setting Criterion-Reference Objectives
- o Identifying Performance Indicators
- o Setting Evaluation Procedures
- o Developing Evaluation Instruments.

## 3. Staff Development

The Staff development effort for the PMS, a major concern already identified in the 1978 In-house Evaluation Study, should be actively and systematically pursued. Towards this end, specific plans should be made to continuously upgrade staff competence in the areas of training, general management, engineering, and cooperative development. The in-house staff development effort, conducted on-the-job, should be complemented with formal training in some existing institutions.

Specifically, the following areas should be given emphasis in the training of the respective PMS:

-- For TOD staff: Trainors' Training (in planning, implementing and evaluating training)

-- For division heads, primarily: Project Management Training

-- For engineering staff: Waterworks Engineering Training

-- For TOD, especially those without BCOD experience: Cooperatives Organization Training.

4. Personnel

-- The several vacant positions, especially in the TOD, should be filled up soon.

-- The TOD head should be released from the mere administrative functions of training, for her to have more time in the technical aspects.

5. Training System

-- Planning and Development

o The TOD to devote more time to the designing and development functions of training, more than to the administrative aspects.

o Develop the present Booklet 7 into a more detailed course syllabus, to standardize training and serve as a functional training tool.

o Develop a Trainors' Manual for the use of the PDS in their training for the community. Short of a Trainor's Manual, the PDS should have a detailed course syllabus for their own use.

o More specifically, the course syllabus must incorporate the following elements:

a) Behavioral Training Objectives. Training objectives must be stated in behavioral terms, e.g., they must specify the action which the trainee must be able to do at the end of the given course, module, or session. Hence, they must be trainee-oriented, observable, specific, time-bound, and with the criterion-reference of acceptable performance. Likewise, there has to be terminal performance objectives (the objective to be achieved at the end of a given program) and enabling or en-route objectives (the objectives to be attained at the end of a particular learning activity, either on a per session basis, or per module, or both).

The present statement of learning objectives are too broad and often repetitive or overlapping.

b) Lesson Plan. The continuity of the different learning activities must be clearly demonstrated, showing linkages of one activity to another and leading to a given learning objective. Thus, content must be specified, delineating time, methodology, materials to be used, and expected outputs.

The training designs developed so far were aimed more towards meeting administrative requirements for funding, rather than learning requirements.

Unless a more systematic and technically correct course design is formulated, much of the implementation will become haphazard and left to the idiosyncracies of resource persons and participants. Moreover, an objective evaluation of the training effort will become nearly impossible, for lack of definable standards and indicators. Other dire consequencies will be poor communication between training staff and trainees, unreconciled learning expectations, lack of direction, and poor motivation to learn on the part of the trainees.

-- Training Techniques and Methodologies

In line with a more experiential approach to learning, the following training techniques would have to be incorporated:

- Forging a "learning contract" between trainees and trainors, specifying training objectives, content and activities mutually agreed upon by both. Such an activity should likewise surface participants' learning expectations, which the staff, in turn, would qualify as to whether or not such expectations are part of the program.

- Participants' reaction feedback time, periodically conducted, could give the staff valuable cue as to the training needs of participants, and help create an effective learning community, by giving trainees greater responsibility for their own learning.

- o Certain group dynamics exercises, appropriately chosen and well-timed, could help bring about the proper personal interaction within the training group and even bring across certain learning points.

- o Some physical exercises or games, besides producing a relaxing effect, can inject the needed dosage of informality, or at the very least, shake off the lethargy that sets in during some rather "heavy sessions".

6. Monitoring and Evaluation

-- Establish a minimum number of training hours required for course completion for provincial level training

-- Set standards and procedures for field training conducted by PDS (can be incorporated in Trainors' Manual)

-- Monitor turnover of PDS trainees after training

-- Design an reporting and evaluation system for training, to include:

  - o objective for the different evaluation activities

  - o evaluation instruments (pre-post tests, etc.)

  - o evaluating/report forms and procedures for both during-training and follow-up training activities.

## 7. Institutional Linkages

Formalize arrangements with MLGCD-regional offices regarding:

-- Course syllabus to be used for cooperative organization training, from pre-membership to continuing membership training on the field level.

-- Training of MLGCD fieldmen (Municipal/Barangay Cooperative Development Worker). As of now, said MLGCD personnel are not so regular in their attendance in training for familiarization purposes.

## D. BARANGAY WATER SERVICE COOPERATIVE OPERATIONS

The following discussion on the evaluation of the Barangay Water Service Cooperatives (BWSC) covers the following areas:

-- Organization process
-- Training at the community level
-- Operating and management systems.

### The Organization Process

FINDINGS/CONCLUSIONS

The organization of the BWSC is the responsibility of the PDS/CDS. The procedures, including the preparation and submission of required documents for registration, are clearly outlined and discussed in Booklet No. 6 of the PMS. The long and tedious process of organization is apparently designed to ensure commitment and support of the people for the project.

#### 1. Pre-organizational Meetings and Activities

a) Initial Data-Gathering. Based on the list of possible recipients of the waterworks system, the PDS gathers and tabulates the data on barangay income. This is usually done through a survey of households or taken from secondary sources. The barangay income level must show that it is within the lower 60% bracket of the national income which makes it an eligible recipient of the project.

b) Informational Community Meeting. The first community meeting is called after the PDS has gathered and tabulated the data on barangay income and has been informed by the BWP Management Staff that the barangay is eligible as recipient of the waterworks project. The PDS calls to a meeting first the recognized barangay leaders and subsequently the general public to inform them of:

-- the selection of their barangay by the provincial government for possible assistance in terms of waterworks project

the requirement to organize themselves into a BWSC which shall operate, manage and ultimately own the water supply system. The members of the proposed cooperative are open to heads of households who are willing to be served in the water supply system and who are willing to pay for the water they use.

c) Submission of Information Sheet. During the initial community meeting and the following days thereafter, the prospective members fill up and submit to the PDS their Information Sheet which will determine the number of households in the barangay willing to be served by the system and provide some of the data needed in the preparation of the feasibility study.

d) Presentation and Discussion of the Preliminary Engineering Report (PER) and Feasibility Study. After the PER and FS have been prepared by the Provincial Engineers Office and the PDS, respectively, and duly approved by PDAP, MLGCD, these are presented and discussed with the barangay people. This is imperative to the success of the BWSC and the Project as a whole - that the people be properly informed of, and that they accept the feasibility study particularly on, the extent of their financial obligations as a cooperative and as individual members of the cooperative.

e) Application to Organize the BWSC. After the PER and the FS have been discussed and agreed upon by the recipient barangay people, the Application to Organize the BWSC (BCOD, BWSC Form No. 1), signed by 15 prospective incorporators, is filed with the Provincial Development Officer (PDO) of MLGCD, together with the PER and the FS. The PDO forwards these papers to the Director, Bureau of Cooperatives Development (BCOD) with his comments and recommendations. The Director of BCOD, after the evaluation of the feasibility of the project, issues the Authority to Organize the BWSC (BCOD, BWSC Form No. 2). If the action of the BCOD is unfavorable, the Director returns the papers to the applicant stating the reasons for the denial.

## 2. Organizational Activities and Meetings

a) Conduct of Pre-Membership Education course (PMEP). Upon the issuance of the Authority to Organize, the formal organization of the cooperative starts. The first step is for the prospective members, the household heads, to undergo the Pre-Membership Education Course or Training prescribed by the BCOD. Presidential Decree No. 175, section 8 vests BCOD with full authority to promulgate the rules and regulations to govern the promotion, organization, registration, regulation and supervision of all types of cooperatives.

Subjects in the PMEP on cooperatives are handled by the Cooperative Development Officer (CDO) of the province, the Municipal Development Officer (MDO), or the Barangay Development worker (BDW), covering the area where the waterworks project is located. On the other hand, subject matters dealing on the BWP and other technical aspects are handled by personnel of PDS and the PEO who received training from PMS.

Upon completion of the pre-membership education, a certification to this effect is issued by the MLGCD fieldman (BCOD, BWSC Form No. 05).

b) Organizational Meeting. After project requirements in terms of membership, cooperative education and other Technical Aspects have been satisfactorily met, the PDS, together with the MLGCD fieldman in the area, convenes the prospective members to formally organize the BWSC. Among the matters taken up during the organizational meeting are:

-- resolution to organize the cooperative

-- adoption of the Articles of Incorporation and by-laws by majority vote of the members

-- election of the members of the Board of Directors, Audit and Supervisory Committee, and Election Committee.

During this meeting, the MLGCD fieldman or the Training Officer of the PDS acts as the presiding officer. He submits for adoption by majority vote the Articles of Incorporations and By-laws, and designate the temporary secretary and canvassers for the elections.

The presiding officer sees to it that those nominated and elected to the Board of Directors and the two standing committees are qualified as provided for in the by-laws.

Minutes of the organizational meeting are certified correct by the temporary secretary and attested by the presiding officer (BCOD, BWSC Form No. 6).

c) Oath-taking of Elected Directors and Members of Committees. Immediately after the elections, the elected officials take their oath of office (BCOD, BWSC Form No. 13).

d) First Meeting of the Board of Directors and Committees. After the oath-taking, the elected members of the Board and Committees meet separately to act on the following matters:

Board of Directors

-- Election by secret ballot from and by the elected Directors of a chairman, a vice-chairman, a secretary and a treasurer. The positions of secretary and treasurer need not be members of the Board, in which case the Board appoints qualified persons and fix their tenure and compensation if any.

-- Creation of the Education and Training Committee which is headed by the Vice-chairman and appointment of two members thereof from the Board and/or the General Membership.

-- Appointment of the Systems Superintendent and other subordinate employees necessary for the initial operations of the BWSC.

-- Designation of the Depository Bank.

-- Ratification of contracts which may have been negotiated by some of the incorporators prior to formal organization of the BWSC.

-- Determination of the date of the regular monthly meeting of the Board.

Committees

-- Elections by secret ballot from and by the Committee members of their chairman and secretaries.

-- Determination of the date for the regular meeting of the committee.

3. Required Documents for Registration

The elected directors and committee members constitute the incorporators of the cooperative. With the assistance from the PDS and MLGCD fieldmen, the incorporators prepare all documents necessary for registration and forward these to the BCOD, through the PDO, with his recommendations, and the PMS of the BWP.

The documents necessary for registration are:

-- One (1) copy of the Application to Organize as approved by the BCOD together with a copy of the PER and the FS (BCOD, BWSC Form Nos. 01 and 02).

-- Certification by MLGCD fieldmen of Completion of the PMEP (BCOD, BWSC Form No. 05).

-- Six (6) copies of the Minutes of the Organizational Meeting duly certified by the acting secretary and attested by the presiding officers (BCOD, BWSC Form No. 06).

-- Six (6) copies of each of the Minutes of the first meeting of the Board of Directors and the Committees, duly certified by their respective secretaries and chairmen (BCOD, BWSC Form Nos. 07-11).

-- One (1) copy of each of the members' Pre-Incorporation Membership Agreement (BCOD, BWSC Form No. 04).

-- Information sheet of the Officers, Directors, and Members of Committees (BCOD, BWSC Form No. 12).

-- Six (6) copies of the Articles of Incorporation together with the Affidavit of the Treasurer.

-- Six (6) copies of the By-laws.

-- Bond of the accountable officers, normally the Treasurer and the System Superintendent

-- Bank Confirmation of Deposits of Cooperative Funds.

The application for membership of prospective members and the oath of officer of elected officers remain on file at the BWSC Office.

Registration Fee. The BCOD, after evaluation the documents, issues the Certificate of Registration after the BWSC has paid the registration fee of ten pesos (₱10.00), or it returns the documents together with the reasons for denying the registration.

Registration of the BWSC gives it a juridical personality separate and distinct from the members composing it.

AREAS FOR IMPROVEMENT

A basic principle in organization development which is underlined in the project approach is the maximum involvement of people in activities designed for their own welfare. People must be involved in the identification of their problems and in the search for solutions to these problems. They should decide for themselves what course of action to take to improve their well-being.

On the other hand, the role of change agents should be limited to assisting the people identify their problems, offer alternative solutions, guide them in decision-making and organization of action groups, develop their organizational and management capabilities and provide material assistance to profits which are beyond their resources. In effect, the people should be given the primary responsibility for their development; they must be the object and focus of change.

The Project's implementing strategies are designed to achieve this end. The procedures in the organization of cooperatives call for constant consultation with the people. In the course of project implementation, however, this principle of development is either ignored or overlooked by the PDS (CDS personnel). More often than not, BWSCs are organized merely

comply with project requirements and gives no guarantee of the people's commitment to the successful implementation of the project. The problems of poor collection, difficulty in raising the initial operating funds, fake expectations of members on the level of water service and objections to the technical design of the system are indications of this implementation problem.

RECOMMENDATIONS

1. Involvement of the community in the project should start upon its identification as a project recipient. Caution, however, should be exercised not to assure the people of automatic approval or construction of the water system since the feasibility study and the technical design would still be prepared. The people should be involved in at least five aspects/stages of the project:

   a) Determination of the barangay income and the financial capability of the people to pay for the project. This will include the determination of water rates.

   b) In the procurement of project material and contracting of services, BWSC representatives should be invited by the Provincial Committee on Canvass, Bids and Awards as observers. This will minimize the suspicion on the part of BWSCs that some government personnel are making money out of the project.

   c) People should be consulted on the level of water service which would be made available to them.

   d) The decision on the number and location of public faucets in Level 2 types and the route of the piping system should be made with the people.

   e) BWSC should be involved in the supervision of work undertaken by contractors to ensure the quality of the work on the project. Since the project will eventually be owned by the cooperative, BWSCs' acceptance of the project is facilitated if the work quality is acceptable to them.

## Training at the Community Level

### FINDINGS AND CONCLUSIONS

The basic training strategy adopted by the Project in training at the community level follows a two-step process: (1) a training staff at Central Secretariat conducts training programs for selected members of provincial development staff of member-provinces; (2) these PDS members-trainees, in turn, assume the responsibility for training at the community level, in cooperation with other appropriate agencies.

Quoting from Booklet No. 7 (Administrative Procedures), the purpose of training at the community level is to

> "develop strong local institutions with the capacity to operate, maintain, manage and finance the water systems that are conducted under this program."

In order to achieve this purpose, the Project has adopted a three part training activity series at the community level:

I. Initial Training

- -- Pre-Organizational Training
- -- Organizational Training
- -- Continuous Training

II. Pre-Operational Training

III. Post-Completion Training

The training activities, their objectives, intended participants and schedule are summarized in the next section.

### Basic Training Approach

There appears to be a big chasm between the purpose of training at the community level, that is, to develop viable barangay water systems, and the specific training approach being pursued to achieve such purpose. It is the impression of the study team that training at this level has been conceived more to fulfill certain necessary steps or procedural requirements than to, in fact, develop functional and viable water systems.

The training package and the manner in which it has been implemented does not seem to be consciously related to a concept of change in Philippine rural areas and how to bring it about.

This could largely explain the seeming dependence on formal, seemingly mechanistic training interventions when what might have been needed during the period under review was the more painstaking, slow but perhaps more fruitful process of informal continuing and sustained person-to-person contact and consultation between the (prospective) member-beneficiaries and the change agent.

There seems to be no other viable alternative for the latter process - common in community organization/community development work for developing enduring understanding for, and commitment to, the underlying philosophy of the barangay water system. Such enduring understanding and commitment can go a long way in ensuring the development of viable barangay water cooperatives.

In sum, unless the training at the community level is predicated on a thorough and serious effort at building the BWP's infrastructure of attitudes, knowledge and skills that program documents articulate as a key program component, training intervention are bound to become at best an exercise merely to fulfill certain requirements. At worst, they can be an exercise in futility.

2. Quality of Training Inputs

a) Course Design. One of the most important observations of the study team on training at the community level is the absence of functional, written course designs as basis for the conduct of the various training activities at this level, in all the provinces under review. What comes closest to a course design that the team observed are actually schedules of activities which normally contain the following information: day/data/time of session, topic, speaker. A functional course design, on the other hand, should contain the following information: rationale of the training activity, terminal performance objective(s) (expressed in behavioral terms, that is, what the trainees are expected to be able to do after training) session objectives (also expressed in behavioral terms), session content areas, learning activities, training aids/materials to be used, and evaluation measures.

Functional course designs facilitate the management of the learning process in any training activity. By emphasizing attainment of training objectives, they aid the course planners in deciding on the topics to be taken up, to what extent, and in what sequence each will be taken up, time allocation, how best to present the subject and what materials/aids to use to facilitate learning. Lastly, functional course designs make the task of evaluating training effectiveness a lot more convenient.

| Type of Training Activity | Objectives | Content | Participants | When Conducted |
|---|---|---|---|---|
| I. Initial Training | | | | |
| A. Pre Organizational | o to inform the community of the BWP and how it operates | o Overview of the BWP | o Community residents | o After the conduct of feasibility study |
| | o to assist the community in assessing its capability to participate in the program | o Assessment of community capability to participate in the program | | |
| | | o Pertinent aspects of the Feasibility Study | | |
| B. Organizational | o to organize the Barangay Water Service Cooperative | o Cooperatives | o Community residents | o After pre organizational training |
| | o to elect the board of directors | o Barangay Water Service Cooperative | | |
| | o to accomplish the requirements for BCOD registration | o By laws and Articles of Incorporation | | |
| | | o Other requirements for BCOD registration | | |
| C. Continuous | o to provide continuing dialogue between Board of directors, the management and the general membership | o as required | o Board of Directors<br>o Management Staff<br>o General membership | o As required |
| II. Pre-Operational | o to establish a billing and collection plan complete with schedules and dates for reading meters, distribution of water bills, collection of fees and imposition, etc. | o bookkeeping<br>o accounting<br>o operator<br>o board of directors | o Basically, the management staff and Board of Directors | o Before operationalization of the waterworks system |

| Type of Training Activity | Objectives | Content | Participants | When Conducted |
|---|---|---|---|---|
| | o to install a system of bookkeeping, accounting budgeting, records-keeping and fund management<br><br>o to prepare a resolution for the ratification of board of directors and for the approval of the province<br><br>o to present, the above-cited resolution to the general assembly prior to operation of the waterworks system. This will be done by the Board of Directors | | | |
| III. Post-Completion | o to develop the capability of the local staff to carry out a preventive maintenance program<br><br>o to develop the capability to perform minor repairs<br><br>o to establish and institutionalize a system of monitoring the day to day operation of the system | o Operational processes<br><br>o Maintenance routines<br><br>o Minor repairs<br><br>o Monitoring system | o The Management Staff of the BWSC | o Before operationalization of the BWSC |

Duration : 2 weeks

b) Course Content. The topics for Pre-organizational training and Pre-operational training, as suggested in the BWP training booklet, have been generally adopted by the various PDS who conducted these types of training. The variations include some additional topics (e.g. Civil Defense and the BWP and a full blown discussion of cooperativism in the Philippines as an introduction to principles of cooperativism) and compression of pre-organizational and organizational training into one program, as was done in Davao.

Generally, because of the absence of a functional course design, the different speakers/resource persons have been virtually left on their own to determine the scope and focus of their presentations.

c) Training Approach and Methodologies. One common practice in the conduct of any training activity at the community level under the BWP is to invite some important municipal or provincial officials to grace either the opening or closing ceremony. This is a very Filipino practice that seems highly supportive of any effort at developing a positive attitude for the training activity among the participants.

Within the training activity proper, the most commonly-used learning methodologies are lectures followed by question-and answer periods.

Dependence on these methodologies should be reviewed for two basic reasons. First, training at this level, except pre-operational training which, typically, involves only the Board of Directors and the management staffs of the barangay waterworks systems, is done with large crowds ranging in size from 50 to over 100 people. This will present problems in managing the learning process. Discussions can center on issues raised by the more articulate members of the group without guaranteeing that the questions and doubts of the shy and less articulate are resolved, if they get expressed at all. Second, two of the key concepts underlying the Project are that users of water from the barangay water system pay for the service and that the users themselves own and manage the system. At the level of the barangay, these are relatively new concepts, necessitating some form of attitude change among the people. Thus, it is important that pre-organizational and organizational training are conducted in such a manner as to facilitate clear understanding and internalization of these concepts. Lectures and big group discussion may not be the best combination of methodologies for attaining such internalization.

d) Training Materials. In conducting training at the community level, the different PDS rely on the various BWP operating manuals for basic reference. Usually, passouts are distributed to the participants and occasional visual aids are used to facilitate learning.

In conjunction with the statements earlier made on reviewing training methodology towards facilitating learning, BWP should also review this aspect on training materials at community level training. A more deliberate attempt should be made at determining how training materials/aids could help capture and sustain participant interest on the various topics being discussed and develop basic themes and designs for materials and aids that the PDS can adapt for their own needs.

e) Training Staff/Resource Speakers. Typically, training at the community level is planned and implemented mainly by the Training Officer and the Water Resource Analyst, who also handle some topics. Other speakers are usually drawn from the Provincial Development Staff, Provincial Engineer's Office, Provincial Health Office and the Provincial Municipal MLGCD staff.

With the probable exception of the representatives from the MLGCD who normally handle cooperatives-related subjects, and other speakers with teaching work experience, it cannot be determined whether the speakers have in fact proven information-imparting skills, or at least have had adequate training in the effective techniques of presenting information. This warrants close attention for the speakers play a key role in bringing about the attitudinal and behavioral changes that membership in a barangay waterworks system entails.

Thus, in a situation where selection of speakers is determined basically by virtue of competence on training content, with only optional regard for competence on handling learning processes, the ready availability of training manuals containing how-to-do-it guides to handling the topics assigned could go a long way in ensuring that learning does take place during the training activity.

## 3. Effectiveness of Training Effort

Training effectiveness will be discussed in terms of

-- the amount of learning gained by trainees at the end of the training programs

-- the internal capability of the Barangay Waterworks Associations/Service Cooperatives to plan and implement their respective water systems.

a) Amount of Learning Gained by Trainees at the End of the Training Programs. No data exist that can provide clear indications of what learnings the participants gained from the training programs. This could be attributed to the seeming oversight of Program planners in building-in an evaluation scheme to the training component.

It cannot be denied, however, that the various pre-organizational and organizational training activities constituted the most important interventions that BWP undertook in the different barangays that eventually led to the organization of Barangay Water Association/Service Cooperatives during the period under review. These organizations could not have come into being without the members' possession of basic knowledge on the nature, objectives and mechanics of the Barangay Water System, which they could have almost exclusively gained only through participation in the various pre-organizational and organizational training activities.

## AREAS FOR IMPROVEMENT

The technical areas in training at the community level that are in need of improvement are the following:

1. Course design
2. Training methodologies
3. Training materials
4. Resource speakers pool
5. Training evaluation

## RECOMMENDATIONS

1. Functional course designs should be developed to facilitate training implementation.

2. A variety of training methodologies should be employed in the training activities. In this regard, methodologies that build on the participants' own experiences should be strongly considered.

3. Core training materials/aids should be developed to ensure uniformity of messages conveyed to training participants and to facilitate the learning process.

4. Develop and conduct basic course on the concept of training and basic techniques and strategies in managing the learning process should be developed and conducted among all resource persons in training at the community level.

5. Training evaluation schemes should be built into every training activity to facilitate determining training effectiveness.

6. Training should be conducted within the context of change at the community level and strategies and schemes to support existing training interventions should be developed. In this regard, program planners can draw valuable insight, (e.g., continuous consultations, with leaders and members) from community organization/ community development practice.

## Operating and Management Systems

### FINDINGS AND CONCLUSIONS

In line with the immediate objective of the Project to develop a functional and viable organizational structure at the community level, the PMS has prescribed a set of "Management Reporting and Accounting Systems" for the BWSC in Booklet No. 6.

However, while these systems and procedures address themselves specifically to the management reporting and accounting requirements of the BWSC, there invariably exist a number of other operating and management systems which influence the overall viability of the project. The following evaluation therefore covers both the systems and procedures found in Booklet No. 6 and pertinent provisions of the BWSC by-laws.

### FINANCIAL SYSTEMS

#### General Accounting Plan

The General Accounting Plan follows basic accounting principles and is consistent with generally accepted cooperative concepts and practices. The Plan clearly spells out the basic concepts and assumptions for its development. To ensure uniformity in the implementation, it prescribes the basic record keeping

procedures, as well as accounting forms and documents in relation to the overall BWSC shceme. It provides the mechanism for the preparation of periodic reports that will accurately reflect the financial conditions and results of operation of the Project.

While the Accounting Plan may have been intended to be flexible and dynamic, the incorporation therein, of some operating systems and procedures has made it rather complicated for the BWSC Accountant/Bookkeeper, and apparently even for PDS Staff, to implement, thus defeating its purpose as an instructional guide and information tool. This problem is compounded by the inadequate, or lack of, training of BWSC personnel. Some BWSC's do not even have a copy of Booklet No. 6 or if they have, the plan was not properly implemented.

A paragraph to introduce the comments when might be in order?

1. Organization of the Accounting Function. BWSC by-laws provide for the position of Accountant/Bookkeeper and define its duties and responsibilities. Under the present set-up, the Accountant is responsible both to the Systems Superintendent and the Board of Directors.

Under the prescribed Accounting Plan, the Accountant will have to work on a full-time basis to cope with the volume of work assigned to him. In most operating BWSC's, the Accountant/Bookkeeper works on a part-time basis. In some, they have either fresh college graduates or persons with little formal training.

The duties of the Accountant/Bookkeeper are clearly spelled out in the BWSC by-laws. Most Accountants/Bookkeepers, however, are not fully aware of the requirements of the position.

2. Chart of Accounts and Account Description. The prescribed Chart of Accounts for the BWSC is developed in accordance with the General-Accounting Plan. It provides a adequate account titles together with their respective account codes to facilitate recording, classifying, summarizing and reporting BWSC transactions.

As an instructional guide, however, account description and posting/recording procedures could better be implemented had they been separately presented or discussed. Internal control devices are also presented together with account description and recording procedures. Additionally, account presentation, while considering inherent cooperative features, could have been made in conformity with standard chart of accounts for a water service enterprise, such as giving more emphasis on water plant facilities and equipment.

The recommended Chart of Account is, however, not being implemented by most of the operating BWSC's. At least one BWSC has adopted a different Chart of Account, which is patterned after the one adopted by the Local Water Utilities Administration's water district.

3. Detailed Procedures, Procedures Flow Charts and Accounting Forms. In the development of the General Accounting Plan and reporting systems, Booklet No. 6 prescribes the following detailed procedures and forms for the BWSC:

Procedures

-- Cash Receipts Systems and Procedures
-- Petty Cash Fund Procedures
-- Cash Disbursements Systems
-- Procurement and Receiving Stock
-- Accounting for Water Consumption and Members Contribution Receivable
-- Payroll Systems and Procedures
-- Property and Equipments

While the aforementioned sub-systems are interrelated with the accounting function, their incorporation in the General Accounting Plan unnecessarily expanded the accounting area of responsibility. The main idea in incorporating them is perhaps the desire to highlight the safeguards to the associations' funds and property. However, the basic assumption is that smaller scale operations which can less afford rigid controls are easier to oversee and thus have lesser control requirements.

While the simplicity of the prescribed systems was not over-emphasized, the aforementioned sub-systems no doubt complicated the timely, effective and efficient chronicling of BWSC transactions, considering the simplicity of BWSC organization structure and actual manpower requirement and capability. Presentation of the various sub-systems in the General Accounting Plan did not effectively segregate the recording function from the operating function, as desired. The area of concentration could have been just the recording or chronicling of events and transactions with effective and specific guides and references. A separate Booklet/Manual of operation could have been designed and specifically connected with the General Accounting Plan for simplicity and clarity.

The foregoing resulted in a situation where the BWSC's were not able to properly install, much more implement, most of the basic features of the prescribed sub-systems. Thus, they fail to follow even some of the basic requirements of the prescribed accounting plan.

Forms

-- Official Receipt
-- Petty Cash Voucher
-- Petty Cash Replenishment Summary
-- Cash Advance Slip
-- Cash Voucher
-- Purchase Order
-- Materials and Supplied Receiving Report
-- Stock Card - Materials and Supplies
-- Statement of Account
-- Daily Time Record
-- Application for Vacation/Sick Leave
-- Request for Authority to do Overtime Work
-- Payroll Register
-- Employee Earnings Record
-- Statement of Employee Earnings and Deductions
-- Fixed Assets Ledger Card
-- Property Insurance Register

The Plan discusses the forms' preparation, flow, recording procedures and control devices. Personnel involved in the preparation of the forms are indicated together with detailed procedures to be followed. While some of the forms are basic requirements in a business organization, most of them can be improved or totally dispensed with. Additional forms, following the concept of simplicity, will have to be designed to suit the actual needs of the BWSC.

4. Books of Accounts. The following Books of Accounts as prescribed under the Plan are to be kept and maintained by the Accountant/Bookkeeper:

-- Cash Receipt Book
-- Cash Disbursement Book
-- Members Contributions Journal
-- Expense Journal
-- General Journal
-- General Ledger

In addition to the foregoing, the following subsidiary records are likewise prescribed:

-- Subsidiary Ledger (General Use)
-- Members' Contribution Receivable Subsidiary
-- Journal Voucher
-- Accounting Forms Logbook

Column headings are suggested for the pro-forma books of accounts and subsidiary records. While the prescribed books follow the basic form of accounting records, they can still easily stand improvement in both design and applicability. The foregoing books of original entry show inconsistency in their titles Expense Journal which can readily be incorporated in one of the books of original entry was considered/ treated as one itself. The General Journal considered as a book of original entry and properly supported by a Journal Voucher form, have misleading instructions in their preparation. The Accounting Forms Logbook can easily accomodate the recording of issuancesof other business forms and should therefore be designated as such.

Most of the BWSC do not use the Expense Journal, Members Contribution Journal, Members Contribution Receivables Subsidiary and Accounting Forms Logbook. The other books of original and final entries as well as the subsidiary ledgers are being adopted by the BWSC using different column headings they believed more appropriate for their needs and ability. Some BWSC's, on the other hand, have gone to the extent of designing and adopting their own sets of books/ records.

5. Management Reports. The management reports prescribed in the Booklet which cover financial and non-financial matters, as follows:

-- Financial and Non-Finance Highlights
-- Statement of Financial Condition
-- Statement of Receipts and Expenditures
-- Schedule of Members Contribution Receivable
-- Schedule of Advances to Officers
-- Schedule of Accounts Payable
-- Water Consumption Summary Report
-- Procurement Summary Report
-- Daily Cash Position Report
-- Schedule of Property and Equipment

In streamlining the over-all accounting design, the foregoing reports, sought to be prepared by the BWSC to achieve the objectives spelled out in the prescribed Accounting Plan, can likewise easily stand improvement in the areas of presentation, content, applicability, frequency of preparation and the number of appropriate reports to be accomplished by BWSC personnel.

The financial and non-financial highlights, while important to the BWSC management, can be re-designed to exclude more or less permanent information which even PMS/BCOD have access to. On account of the general observation in the implementation of the General Accounting Plan, most WSC's cannot even prepare their basic accounting eports. These reports are the Statements of Financial Condition and Receipts and Expenditures. Other reports prescribed under the system are not being prepared by the BWSC.

While daily/periodic operating (non-accounting) reports are needed by the BWSC, the same can appropriately be included in a separate Manual/ Booklet to make the accounting manual less complicated. Furthermore, the pro-forma statements of financial condition and receipts and expenditures can be improved both as to content and presentation to conform with the standard reporting of a water service enterprise.

## Cash Systems and Procedures

The responsibility of handling and safekeeping funds lies in the Treasurer, who may or may not be a member of the Board of Directors. His duties and responsibilities are clearly spelled out in the BWSC by-laws. While the organization chart indicates the position of a Cashier, most BWSC's operate with only a Treasurer who oftentimes performs his duties without and regular schedule. The Treasurer reports directly to the Board of Directors. Collectors, while reporting directly to the Accountant/Bookkeeper as a control measure, ably assist the Treasurer/Director. Under such a situation, the Cashiers, Collectors, Accountant/Bookkeepers and other personnel, in one way or another, receive cash from water service collections for the Treasurer/Director.

One of the strongest aspects of the General Accounting Plan is the cash systems and procedures. While general safeguards/controls are incorporated in the by-laws, Booklet No. 6

also clearly spells out the general and specific features and requirements of the cash systems. Adequate flow charts are provided for in the Plan including control devices. Without discounting the merits of this sub-system, it can still be improved or simplified. Other processes can be either added or deleted to completely present the practical cycle in the handling disposition and safekeeping of funds. The simplicity of the BWSC operation makes it also possible to dispense with some prescribed forms

Most of the BWSC's are located in areas where there is no banking facilities. The prescribed systemspresuppose the presence of such facility and therefore provide the mechanism under the circumstances. This particular area of the Plan can be re-designed to make it more appropriate and practical. The Daily Cash Position Report, which is necessary and practical, is not being accomplished regularly by the BWSC. Generally followed/adopted forms are the Official Receipt and the Cash Voucher. Funds are regularly deposited in the nearest bank, maintaining only an amount of cash on hand for their daily/periodic requirements.

Budgeting System

Budgeting, its necessity and application in BWSC operation, is taken up impliedly in Booklet No. 6. It is, however, expressly required in the BWSC by-laws. Specific provisions on the budget in Article III of the BWSC by-laws are as follows:

-- Section 8 (9) Agenda (Approval of the Budget for the ensuing year)

-- Section 18 (1) Powers and Duties of the Board (To prepare or cause the preparation of long-range plans for the development of the Cooperative)

-- Section 24 (b) Duties of the Accountant (In coordination with the System Superintendent and the Audit and Inventory Committee, assist the Board in the preparation of annual budget)

The existence of a need for a budget can also be gleaned from the various reports prescribed in the General Accounting Plan. Specifically, they can be found in the prescribed Financial and Non-Financial Highlights, Statement of Financial Condition and Statement of Receipts and Expenditures. Columns for budget/variance figures are provided for in the pro-forma statements.

In the absence of a budgeting system in Booklet No. 6 and considering the expressed requirements of the by-laws, it is worthwhile to note the presence of a budgeting system in one of the BWSC's. It has, through experience and technical ability, predetermined its daily water requirement per person/family per day/month, its pumping inefficiency, its daily average operating and administrative expenses and, therefore, its daily average net proceeds from water operation. They constitute the basic planning and budgeting guides to that particular BWSC. For example, this BWSC has already determined, given present economic conditions, to which items the proceeds from the sale of water would go.

| | |
|---|---|
| Lot installment | 5.39% |
| Repair/Supplies/Miscellaneous | 6.15 |
| Allowances/Transportation (including B/D per diems) | 11.54 |
| Interest (4%) | 12.40 |
| Salaries and Wages | 19.23 |
| Electric Bills | 27.69 |
| Sub-Total | 82.40% |
| Net Proceeds (savings) | 17.60 |
| TOTAL | 100.00% |

The foregoing information clearly shows that while BWSC operation is small and simple, adequate and effective budgeting can be implemented. PHS/BCOD should cause the design of a BWSC budgeting system

## OPERATING AND OTHER SYSTEMS

While Booklet No. 6 contains general policies regarding operating revenues and expenditures, there has been no adequate instructional guide for BWSC personnel in undertaking various aspects of the water business operation. Except for the collection aspect of the operation, no other operating systems and procedures were presented in the Booklet. However, the following areas of BWSC operation and management may be gleaned from the by-laws and the prescribed Accounting Plan:

-- Water Meter/Pipe Connection
-- Pump Operation
-- Water Distribution/Consumption
-- Water Safety (Bacterial Testing)
-- Billing and Collection

Basic operating sub-systems and procedures could have been provided for in a separate Booklet/Manual for the guidance of both BWSC and PDS officers and staffs. Procurement and receiving of stocks, water consumption and member contribution (including water fees) are inadequately treated in Booklet No. 6 but are included in the detailed accounting procedures of the General Accounting Plan. However, these operating sub-systems integrated in the Accounting Plan are not being adopted by the BWSC.

1. Water Meter/Pipe Connection

This particular aspect of operation pre-supposses meter/pipe connection activities by the BSWC both on a pre-operating and operating status. Amounts are allowed to be assessed by Associations to water users to defray expenses in connecting water distribution lines and water meters. Such assessments are expressly included in the BWSC Chart of Accounts. While receipts of fees from this operation are properly covered by the cash systems and procedures, the mechanics of meter/pipe connection were not discussed or presented in the Booklet/Manual.

Each BWSC has its own policies, systems and procedures in connecting water lines/meters to member-users.

2. Pump Operation

Operation of the water pumps, technically and administratively, are left completely into the hands of each BWSC. As in water meter/pipe connection activities, there is no instructional guide provided for in Booklet No. 6. Its presence could have been a major factor for the efficient, effective and safe operation of the water systems. Each BWSC has its own policies, systems and procedures in operating its respective pump.

3. Water Distribution/ Consumption

Accounting for water consumption is included in the General Accounting Plan. The procedures, however, center more on the collection and recording aspects rather than the policies, systems and procedures in the proper, effective and efficient distribution of water.

At least one BWSC has adopted certain acceptable systems and procedures in the distribution of water in the different areas of the Barangay that it serves. This should ensure efficient water distribution and remove confusion among member-users

Water Safety
(Bacterial Test)

A set of operating systems and procedures can readily provide instructions on the manner and frequency of testing the water distributed to the member-users. Most of the operating BWSC's, fortunately, on their own see to it that their water system is periodically checked by proper authorities who likewise see to it that a bacterial test is conducted.

5. Billing and Collection

The manner of billing has not adequately been provided for in the detailed procedures of the General Accounting Plan. While a Meter Reading Report is impliedly required, no such form was prescribed. Aside from the Official Receipt used in receiving collections, only the Statement of Account form issued to each member-user was prescribed. Member Contribution Receivable Subsidiary is required as an accounting record, but the source document in recording billing charges is not provided for.

The BWSC's at present adopt their own billing and collection policies, systems and procedures. An adequate billing and collection system should be a major area of discussion in a separately designed Booklet/Manual of operation.

6. Procurement and
Receiving Stock

Control in the procurement of materials, stocks and supplies and other items have been emphasized in Booklet No. 6. Considering the organization structure of the BWSC, such control devices and procedures should have been simplified. The BWSC's adopt their own procurement policies, systems and procedures.

7. Payroll Systems
and Procedures

Like the preceding sub-systems, this particular area of BWSC operation has been emphasized in the detailed procedures of

the General Accounting Plan. Simplification will, however, have to be made and the systems included in a separate operating manual.

## AREAS OF IMPROVEMENT

### Financial Systems

1. Accounting Plan

   a) Organization of the Accounting Function - Training of the BWSC Staff as well as the PDS staff to undertake installation and supervision of prescribed systems

   b) Chart of Accounts - Design, including but not limited to, bookkeeping/record-keeping guides. Presentation of internal control devices.

   c) Detailed Procedures, Procedures Flow Chart and Accounting Forms - Delineation of purely accounting from purely operating functions. Design of Accounting and business forms.

   d) Books of Accounts - Book titles and their respective column headings. Description of books of original entry, books of final entry and subsidiary records.

   e) Management Reports - Number, content, applicability and frequency of reports. Delineation of accounting cash and budgeting reports from operating and statistical reports.

2. Cash Systems

   a) Organization - Reporting responsibility of the Treasurer.

   b) Bank Transactions - Instructional guides in bank deposits and withdrawals.

   c) Forms - Design of cash transaction forms, including their number and applicability.

   d) Process Flow - Circuitous flow in certain aspects and inadequacy or lack of process flow in others.

3. Budgeting System

Necessity of a Budgeting Manual.

B. Operating Systems

a) Necessity of a separate Manual of BWSC Operation expressly treating the following areas:

-- Water Meter/Pipe Connection
-- Pump Operation
-- Water Distribution
-- Water Safety
-- Billing and Collection
-- Procurement and Receiving
-- Payroll Systems
-- Reporting System

RECOMMENDATIONS

1. The general accounting plan should be simplified (revised) without sacrificing controls and relevance to the Project.

2. All management systems should be properly installed by qualified project personnel.

3. Adequate training/retraining should be given all people involved in the Project.

4. The following manuals/booklets should be designed separately from the General Accounting Plan, and the BWSC provided a copy of each:

-- Budgeting Manual
-- Manual of Operation
-- Information System Manual

5. There should be closer supervision and guidance in the implementation of various management systems and procedures.

6. Uniform forms/documents/records/reports should be adopted both for BWSC internal use or for submission to the PMS/BCOD.

## E. ENGINEERING DESIGN AND CONSTRUCTION

FINDINGS/CONCLUSIONS

### Engineering and Design

Engineering and Design services include such activities as:

-- Gathering and analysis of data relevant to the choice of the water source

-- Planning, conducting and supervising surveys, surface and sub-surface investigations, and tests

-- Preparation of preliminary and final designs

-- Preparation of drawings

-- Drafting of specifications and contract documents

-- Estimate of quantities and costs.

#### 1. Organization

The Provincial/City Engineer's Office is responsible for these services. The A & E consultant assists in the engineering of the projects and reviews all detailed plans, specifications and bills of materials while the Project monitors all these activities. The Ministry of Health provides the necessary services in determining the quality of the water supply.

2. Relationship to Total Framework

Preliminary technical information, such as on availability of electrical service and location of a spring as potential source of water, is needed in the pre-selection of projects listed in the water Resource Development Plan. A feasibility study is prepared for projects passing the pre-selection stage. The technical aspect of the feasibility study includes preliminary designs, drawings, specifications and estimates based on surveys and field investigations. The Project reviews the project feasibility study after which the final plans, specifications and estimates are made.

3. Status

The staff of the Provincial/City Engineer's Office are fairly doing well considering that this may be their first exposure to actual engineering and design of waterworks projects. Specific problems encountered were along the areas of: selecting the water source, conduct of survey and field investigation, layout of pipes and design of pumps. Previous difficulties in design-related areas were overcome with the issuance of the Technical Manual (BWP Booklet No. 5). Based on feedback from the designers, the use of the standards and guidelines contained in the manual has significantly reduced the time spent in designing the system.

AREAS OF IMPROVEMENT

It is felt that the quality of work and performance of the PEO/CEO Staff could be improved further through:

-- greater involvement of the A and E Consultants in the work

-- addition of sample designs of typical water-works system in the Technical Manual which new designers could easily follow

-- finalization of the design and specifications of a pump only after it has already been developed and the static water level determined.

## Implementation/Construction

A project may be contracted out either wholly or partially. When portions of the project are to be contracted to specialized contractors, the works are normally divided into: brilling of well and installation of pump, fabrication and installation of water storage tank, and installation of pipes including valves and fittings. Some local governments do the installation of pipes and appurtenances by administration and have the other two portions of the work contracted out.

The basic flow of activities when a project is contracted out involves:

-- Prequalification

-- Bidding and Awarding

-- Construction

### 1. Prequalification

Prequalification is the process of screening contractors so that only those bonafide and qualified contractors may participate in the bidding of waterworks projects.

Contractors interested to bid for projects estimated to cost more than ₱50,000 are required to submit a contractor's Confidential Statement of Qualifications. Forms for the purpose are obtained and later submitted to the Provincial/City Engineer's Offices. The filled-up forms and the required attachment provide sufficient information to evaluate prospective contractors. The criteria for evaluation are:

Legal. Insures that the contractor is legally licensed and registered under Philippine laws and that there is no pending criminal or civil case against him.

Financial. Determines the capacity of a contractor to finance the construction of a project.

Equipment. Verifies the ownership of or assignment to the contractor of at least the minimum equipment to undertake the work.

Technical Organization. Evaluates the capability of personnel involved in the construction.

2. Bidding and Awarding

Prequalified contractors prepare their bids on the proposal book or form provided therefor. Bids are accompanied by a Bidder's Bond amounting to 10% of the total bid price. They are sealed and opened in public in the presence of the Contract Review Committee and the participating bidders. The contract is awarded to the lowest responsive bid provided that it is within ten percent (10%) above and twenty-five percent (25%) below the Provincial/City Engineer's estimate. The winning bidder posts a Performance Bond equivalent to not less than thirty percent (30%) of the contract price.

3. Construction

Prior to execution of the work, the contractor submits to the Provincial/City Engineer a detailed schedule of operations showing by chart the time frame in which each item of work will be performed and the monthly cash flow for the project as a whole. Upon approval of the contractor's operations schedules, the Provincial/City Engineer issues a "Notice to Proceed" to the contractor.

Construction activities include:

-- supervision of construction and field inspection during the construction period

-- inspection and testing of all materials and workmanship related to the work to ensure that they comply with standards, specifications, and drawings, and give immediate notice to the contractor of any defects or deficiencies

-- supervision of testing of all completed components and facilities to see if they are performing as designed under normal operating conditions and recommend as to the acceptance or rejection of any part or parts of the completed work

-- advice on any changes in the plans and specifications which may be found necessary during the course of the construction, together with the preparation of the necessary revised plans and specifications

-- control of the contractor's measurement of quantities of approved and accepted work and materials, and the checking of and certifying to the contractor's payment certifications

-- examination of claims from contractors for extension of time, payment of extra work and any other similar matters.

4. Organization

A Contract Review Committee composed of the Provincial/City Engineer, the Fiscal Oificer, the Treasurer and the Auditor evaluates the qualifications of contractors through their pre-qualification statements. The Committee also reviews all bids to determine and award the contract to the lowest responsive bid.

The Provincial/City Engineer's Office is responsible for the administration of the work. Engineers of the A & E firm, the BWP and, USAID monitor and periodically visit the projects. The A & E engineers also provide technical assistance as may be necessary.

Final inspection and acceptance of the project is conducted by representatives of the Provincial/City Engineer's Office, the Ministry of Health, the A & E Firm, the BWP and the USAID. The project is then turned over to the Barangay Water Service Cooperative (BWSC) for operation and maintenance.

5. Status

The prequalification process has worked well for the program as there has not been a report as yet on the incapability of a contractor to do a project.

The present practice of bidding and awarding of projects is already standard to government as well as private entities. The amount required for a performance bond, however, is bigger than the requirement of other agencies. The normal requirement is 20% of the total bid price.

In general, work during the construction period is being done smoothly. Most of the noted deficiencies, such as leaking pipe joints, are normal in waterworks projects. However, the occurrence of faulty piping layout and improper backfilling is indicative of inadequate supervision.

A major setback is encountered when the end-users do not accept the level of service which the system being constructed is conceived to provide. This was observed in Ariston Bantog, Pangasinan and Talaga, Batangas where the projects were designed for level II. The barangay people, however, insisted on level III during the construction when most of the materials were already on site. While the shift in level of service was made, these systems may now be underdesigned if the design criteria provided for in the Technical Manual, specifically the determination of peak hour demand and storage tank capacity, were followed. It is foreseen that more serious problems of this nature will be met during the implementation of projects designed for level III-A. As may be seen in the following table, the capacity of level I, I-A is very small compared to those of levels II and III.

| Design Criteria | Level II | Level III | Level III-A |
|---|---|---|---|
| Peak hour demand (% of average/day) | 180% | 150% | 0.08 GPM/household |
| Storage (gal/capita) | 6 | 4.5 | 1 |
| Maximum allowable flow rate for any connection (GPM) | 3 | 3 | 0.1 |

## RECOMMENDATIONS

1. The performance bond to be posted by contractors of waterworks projects should be reduced to 20% of the total contract price. This should be sufficient to cover for the eventuality that the contractor backs out from doing/continuing the contracted work.

2. The PEO/CEO as well as the A & E firm should closely supervise the projects being implemented. This would insure better quality of work and minimize deficiencies in the waterworks system.

3. Considering that the end-users of the water-works system may not accept the intended level of service of a project already being implemented, it would be advisable to study the feasibility of standardizing the design criteria for all the levels of service in order to provide flexibility of shifting from one type of system to another.

## F. PROJECT MANAGEMENT INFORMATION SYSTEM

FINDINGS AND CONCLUSIONS

The present types of periodic reports prepared can be categorized into the following:

Local Government Reports

-- Engineering reports

-- Financial reports

-- Evaluation reports

-- Monthly status report

Central Office Reports

-- Spot evaluation training report

-- Status of project implementation

### Local Government Reports

These are the reports prepared by the local government units and are submitted to the Central Office of the MLGCD.

#### 1. Engineering Reports

These reports monitor the status of construction activities of each sub-project in the province.

There are two types of reports prepared and submitted which vary in content and frequency. These are:

-- Weekly Progress Report (BW-17A), and th

-- Monthly Report (BW-12)

a) Weekly Progres Report. This report on waterworks construction activities is prepared by the Civil/Sanitary Engineer of the local government's PEO and is submitted to the BWP staff. The report contains information on:

-- % completion of construction

-- materials status

-- deficiencies/remarks.

This report appraises BWP on the status and problems encountered in each sub-project.

b) Monthly Report (BW-12). This report contains information pertinent to activities, delays, deficiencies, comments and recommendations on sub-projects that are in the process of being constructed. This report has been proven to be very useful to the Project Management staff in terms of knowing the status and problems of sub-projects for information and decision making purposes.

2. Financial Report

The existing financial report deals mainly on quarterly reporting of cash flow projection (Forms BW 21-24) of the local government to the MLGCD. This report is usually prepared by the Fiscal/Budget Analyst and submitted directly to the Ministry. Information contained in this report are:

-- opening cash balance

-- regular receipts

-- regular disbursements

-- AIP reimbursements

-- AIDP disbursements

-- AIP loan repayments

-- closing cash balance.

This report likewise describes the actual and potential financial capability of the province to push through with the installation of sub-projects.

3. Evaluation Report

This report monitors the organizational, financial and technical aspects of the individual cooperatives operations. Specific findings in each of these three areas are listed to include problems encountered, action taken and specific recommendations/remarks.

This report is prepared by the Provincial Evaluation Team* and submitted to the BSWC President based on scheduled frequency as prescribed in a manual (Booklet IB).

Copies of these reports are given to the MLGCD (PDO/CDO) and the USAID.

4. Monthly Status Report

This report contains information on:

-- progress of construction and explanation for deviation from planned schedule

-- comparative monthly figures in estimated value of reimbursement for sub-projects in planning, not yet started, in process, and completed

-- program's total estimated value of reimbursement.

The monthly status reports (Forms BW 18-20) are submitted by the Provincial Governor to the Minister of the MLGCD. These reports are jointly prepared by the Provincial Development Staff and are reviewed for clearance by the Provincial Engineer, Provincial Coordinator and Provincial Treasurer.

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*Consisting of the Water Resource Analyst, Fiscal Analyst, Provincial Engineer's Office representative and a representative from the Provincial Health Office.

## Central Office Reports

### 1. Spot Evaluation Report

Training-Spot evaluation reports are prepared by BWP Training and Organization immediately after each training session is held. This report contains the Project Training Officer's own findings and assessment of the training session held. Contained in this report are information on number of participants, attendance, comments/activities and accommodations, other logistical support and feedback from participants. This reports is quite useful from the standpoint of getting immediate feedback to improve succeeding training sessions based on current experiences.

### 2. Status of Project Implementation Report

This is a monthly report prepared by the Project Manager and submitted to the Deputy Minister of Local Government of the MLGCD containing information on the current status of project implementation, specifically:

-- Results of training activities

-- Status of completion of all sub-projects currently being implemented, including remarks on status and problems encountered.

## Status

The reporting system for the project is now currently being developed by the PMS of the BWP to effect a better retrieval and feedback system on project implementation. Present forms used are in the stage of being revised to include additional information required. Likewise, some forms are currently being developed to cover monitoring of activities in the other areas of project implementation.

The specific findings in the existing project reporting system are:

1. Majority of the reports are not submitted to the Central Office on time.

2. No regular reporting is done on the status of activities related to organization of cooperatives and training at the provincial and barangay level.

   For instance, no specific periodic report monitors, at each level, the following quantitative and qualitative information in the areas mentioned.

   a) Training

      -- number of personnel trained

      -- % attendance

      -- remarks/feedbacks

   b) Cooperative Organizations

      -- number of members

      -- status of registration

      -- collection

3. No periodic financial reports are submitted to or prepared by the PMS or MLGCD regarding BWP's financial transactions. Among others, such information as the following can be of interest to Project Management Staff:

   -- balance of funding for sub-projects, for better project planning and control

   -- fund usage

Also, no financial reports originate from the BWSC. This report can describe the financial conditions of the BWSC. With this, the PMS staff can better assess its possible assistance to the cooperatives in terms of formulating and adopting measures to minimize or avoid financial difficulties.

4. Most reports from provinces go straight to the Minister of MLGCD thru the Provincial Governor in the same format and content. Hence, no consolidation of report is made at the provincial or Central Office level.

5. Most provinces do not submit the PET report.

6. Local government reports do not contain summarized BWP activities during period specified.

RECOMMENDATIONS

1. Consolidate reports of each level after considering the information requirements of the next succeeding level.

2. Design reporting procedures to include regular/periodic reporting in the areas of training and organization activities.

3. Require prompt submission of evaluation reports and weekly progress reports.

4. Require provincial governments to submit status reports summarizing results of all BWP activities in the province.

5. There should also be established a comprehensive and formalized management information system which could include, among others, beside paper reports, actual periodic audits of operations and financial status.

## G. TECHNICAL ASSISTANCE

Technical assistance here refers to the staff support in terms of advisory and other services provided by any of these organizations in any area of the Project, e.g., engineering, training, administrative procedures, etc.

-- Architecture and Engineering Firm (A & E)
-- US Agency International Development
-- Project Management Staff
-- Bureau of Community Organization and Development

### ARCHITECTURE AND ENGINEERING FIRM

The A & E Consultants act as the authorized representative of BWP, MLGCD and is tasked to perform essential engineering services to include the following:

#### For New Provinces

-- preparation of water inventory and development plans
-- selection of eligible projects
-- establishment of waterworks repair shops

#### For All Provinces

-- Providing assistance in the

  - o development of training programs on the engineering aspects
  - o preparation of technical feasibility studies
  - o preparation of engineering plans and specifications in the provinces and cities
  - o review and cost estimates of projects
  - o preparation of implementation schedules for project construction.

-- Establishing and updating local government standard unit costs in each geographical area of the program.

-- Checking and monitoring construction activities.

Assisting local governments in the pre-qualification of prospective contractors and preparation of contract documents

-- Checking and monitoring laboratory tests of materials.

-- Preparing standard plans and designs.

-- Ensuring local government's adherence to the BWP technical manual and assisting in the revision of said manual.

-- Conducting pre-final inspection of work.

-- Conducting final inspection jointly with MLGCD and USAID representatives, Auditor and MOH representatives.

Organization

To assume these tasks, the present A & E firm maintains a total of 12 technical personnel headed by a Project Coordinator who deals directly with BWP Project Manager and Supervisors. The project set-up of the A & E firm is shown in Chart

Each of the existing engineers periodically visits the projects and is assigned specific provinces to cover for the duration of theyear.

At the provincial level, the A & E engineers deal directly with the PDS and PEO personnel in providing the essential engineering services, and as the need arises, direct assistance to subprojects at the barangay level.

Status

The need for the services of A & E Consultants has been strongly felt in the provinces particularly those that are in the stage of launching the pilot projects. However, based on feedback from the local governments, the A & E has not satisfactorily performed the services spelled out in their contract with MLGCD.

The specific findings in the technical assistance provided for by the A & E are as follows:

1. Based on the contracted scope of services, the A & E firm does not provide adequate assistance in the conduct of field investigation including site surveys of proposed projects. When faults in survey data are detected during site inspection, a resurvey is required.

2. There seems to be some lapses in the review of detailed estimates of projects. This has resulted to the under-budget of some projects.

3. It appears that some A & E engineers do not give sound on-the-spot decisions in the field.

4. Some of the instructions given by A & E engineers to the PEO/CEO are verbal resulting to some problems in pinpointing responsibility later.

Areas for Improvement

The areas needing attention in the technical assistance provided by the A & E are the following:

1. Site Surveys. Field surveys, as conducted, are not adequate to validate information on engineering survey data which serve as bases for the plan and piping layout of the water system. As experienced, for instance, in the pilot projects, the relocation of storage tanks are made to meet design and cost criteria.

2. Detailed Estimates. Review conducted is not adequate to check completeness of bills of materials. In some estimates, specific items such as valves and fittings were not included, hence, the budget as submitted came out to be unrealistic.

3. Expertise of Consultants. As claimed by local government personnel, engineers fielded out by the A & E firm have inadequate experience to be able to provide the necessary technical decisions and advice to the PEO.

Recommendations

1. A & E engineers should provide better assistance to the PEO/CEO engineers in conducting field investigations including site surveys in order to minimize faults or deficiencies in survey data.

2. A & E should check more carefully the detailed estimates of projects to avoid as much as possible budget overruns or underruns.

3. A & E should field more experienced engineers who could make sound decisions in the field.

USAID

As part of the loan agreement of the Project, USAID provides a grant for technical assistance. Support for technical assistance is extended to all aspects of the Project.

Overall, the USAID has adequately provided the technical assistance required by the Project. At present, it maintains a technical staff of four including the Project Officer. The nature of technical assistance provided by the staff covers all areas from Project planning to sub-project implementation. Particularly, technical assistance is given in the following areas:

-- training
-- engineering and design
-- construction supervision
-- project monitoring and supervision

The USAID staff is currently conducting engineering researchs aimed at developing low-cost services water for the community. The Level III-A type of service now being pilot-tested in serveral communities is one such sample.

In the area of training, the USAID technical staff has actively involved itself in the development of course outlines and training materials and in the conduct of lectures, workshops and seminars.

USAID has likewise provided the stop-gap support needed in engineering design and construction activities, specifically, in areas not adequately covered by the A & E consultants, i.e., consultative advice to local government engineers in designing pumps, determining specifications of the water system's components and site selection. These services are extended during visits conducted by the USAID technical staff to the provinces and communities.

In addition, the USAID technical staff assists in the development and revision of administrative procedures for planning and implementation of the Project.

The above functions presently being undertaken by the USAID are actually a duplication of the A & E consultants' role in the project. As it appears now, the USAID technical staff supplements the A & E consultants' task in providing essential technical services.

RECOMMENDATION

Study the possibility of combining the functions of the USAID engineering staff and the A & E consultants. Such arrangement can provide better overall delineation of duties and orchestration of activities related to provision of technical assistance.

PROJECT MANAGEMENT STAFF (PMS)

The PMS, aside from assuming the role of administering the Project, likewise renders technical assistance in areas where such assistance is needed at the local government level. Based on the existing expertise and capability of the PMS staff, such assistance can only be provided in the engineering aspect of the Project. This particular assistance is extended by the staff of the Engineering Review and Supervision of the PMS to the Provincial Engineers Office's technical personnel in the areas of engineering design and construction. The nature of such assistance extended, however, is practically similar to what the A & E firm and USAID technical staff are supposed to render.

Other than the above, no other type of technical assistance is currently being extended by the PMS to the project.

RECOMMENDATIONS

The Engineering Review and Supervision Division should provide the lead and orchestrate all activities related to the provision of technical assistance to the Project whether obtained within or outside of the PMS organization.

BUREAU OF COMMUNITY ORGANIZATION
AND DEVELOPMENT (BCOD)

BCOD support in the pre-organization stage of the BWSC consists of the following:

1. Formulation of procedures of organization
   The prescribed steps in organizing the BWSC consider sound principles of community organization and community development and are designed to generate support of the people for the Project.

2. Designing of all forms necessary for the registration of BWSC's.

3. Provision of sample copies of BWSC's Articles of Incorporation and By-Laws.

4. Preparation of the course syllabus and actual conduct of the Pre-Membership Education Course (PMEP). Under the government's Cooperative Development Program, only persons who have undergone the Trainors' Training course conducted by BCOD, such as MLGCD fieldmen, are authorized to conduct, in turn, the pre-membership education training program.

BCOD support during the organization of BWSCs consists of:

1. Processing of applications to organize the BWSC through the Provincial Development Officer (PDO) and issuance of corresponding authority if the project is found sound and feasible.

2. Through the fieldmen, assistance to the PDS in the actual organization of the cooperative either as presiding officer during the organizational meeting or as co-facilitator.

During the registration stage, the BCOD

1. prescribes the procedures and requirements for registration.

2. acts on applications for registration.

3. issues Certificate of Registration.

AREAS FOR IMPROVEMENT

Considering the training and experience of BCOD fieldmen, it is safe to assume that its people (particularly the Cooperatives Development Officer, the MDO and the BDW) have the expertise and competence in the field of cooperative development. The PDS, however, has failed to make maximum use of this resource. In most cases, involvement of MLGCD fieldmen have been limited to the role of resource speakers during training programs rather than

in the planning and maintenance of the Project. The PDS has not developed among these people the feeling that they are an integral part of the Project, hence inculcating in them a deep personal concern for the Project.

2. There is an apparent delay in the organization and registration of BWSCs. This can partly be traced to the following:

   a) The authority to organize the BWSC rest with the Director of the BCOD. Applications are coursed through the PDO who in turn forwards them to the Director with his comments and recommendations. Considering the distance of most sub-projects to Manila, coupled with the inefficiency of the postal service, the delay is inevitable. The situation is compounded when some requirements are either overlooked as some supporting documents get lost in transit.

   b) Inadequate or vague explanation of requirements for registration. This usually happens where the explanation is made by PDS personnel who are not as knowledgeable as MLGCD fieldmen in cooperatives development.

RECOMMENDATIONS

1. BWP should look into the wisdom of organizing a provincial committee to plan and implement the BWP composed of PDS, the PDO, PBO, Provincial Health Officer and other agencies engaged in development programs. Planning should not be limited to the PDS and the PBO. Maximum support of other agencies can be expected if they are made to feel that the BWP is also their project.

2. The authority to approve or disapprove applications to organize BWSCs should be delegated to the Regional Director of the MLGCD.

## H. PROJECT FUND MANAGEMENT

The Project operates under the fixed amount reimbursement (FAR) concept. Under this plan, costs for constructing water facilities for a community are first shouldered by the provincial/ City government. Upon completion of the project, the provincial/ City government is reimbursed by the national government for a proportionate amount of the project cost.*

The government of the Philippines has obtained a $3M loan from the USAID for funding the Project. This loan, payable for 30 years plus a grace period of 10 years at 3% p.a., is available in three drawdowns.

Yearly, the MLGCD estimates how much capital outlay will be needed by the Project and submits this to the Ministry of the Budget. Upon approval of the capital outlay, tentative allocations are made for the different provinces. These allocations are based on past performances of provinces previously involved in the BWP as to how many projects they can handle per year.

Upon receipt of the tentative allocation, the province/ city involved decides which communities to include in the AIP from their CIP (list of projects with preliminary cost estimates). Since provinces have to fund initially the construction of water facilities, aside from funding other development projects, a closer examination of priorities as regard development activities plus the financial condition of the local government unit is necessary.

The AIP is sent to the MLGCD for review and approval. Upon approval of the AIP and the issuance of a BW-10 (Authority to Proceed), the local government unit can start construction and file a claim for "seed money." During the construction stage, the local government unit sends cash flow projection of the construction every quarter. Once the construction has been completed and inspected, the local government unit can apply for reimbursement of the agreed amount. It can also expect to receive yearly from the Barangay Water Service Cooperative, once it is operational, the amortization principal and interest previously determined.

### FINDINGS

As of October 1979, the national government has not made any drawdowns on its USAID loan. As such, funding for the Project has been done solely by the national government.

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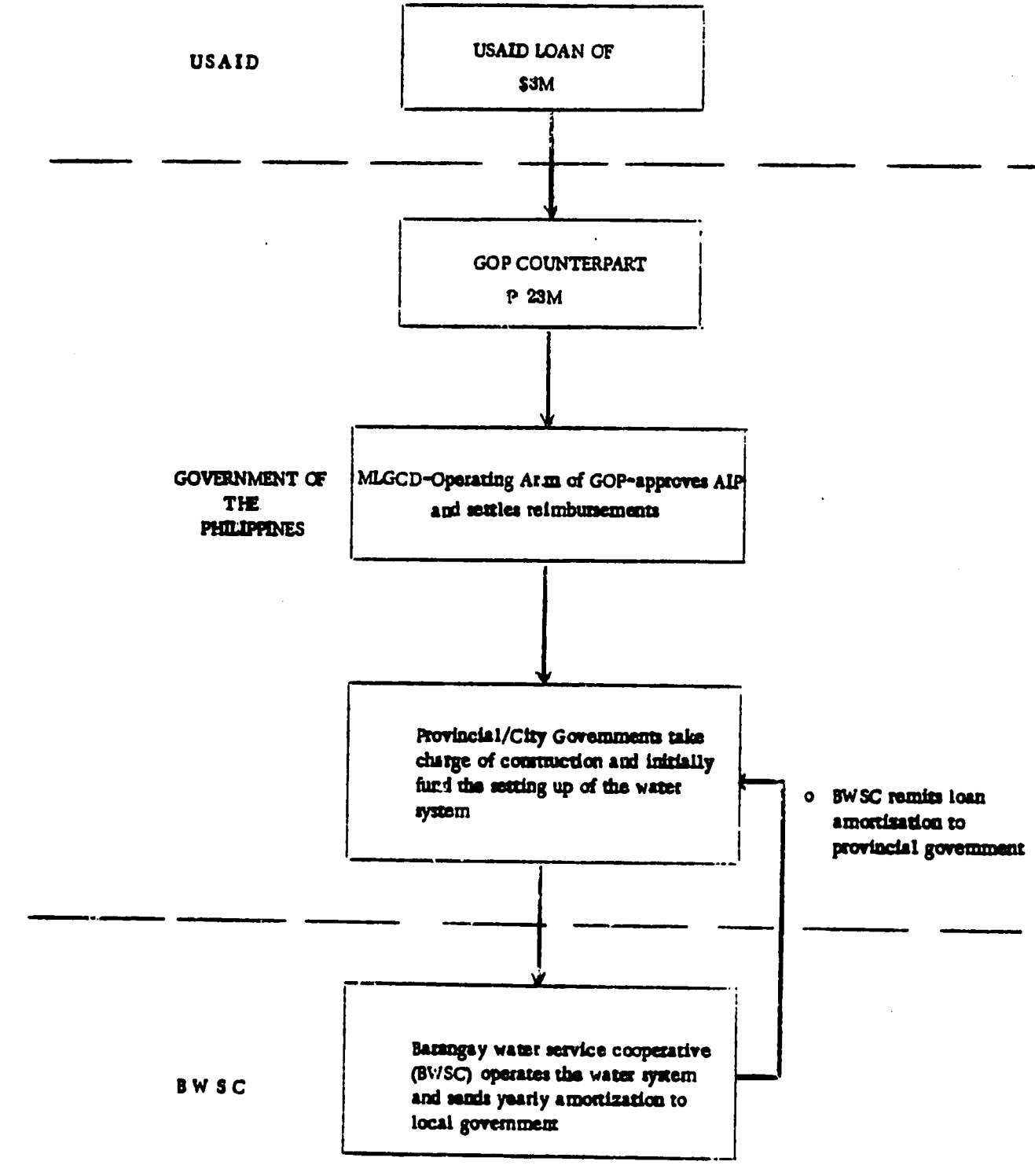
*See Chart on Funds Flow.

FUNDS FLOW


USAID
USAID LOAN OF $3M
GOP COUNTERPART P 23M
GOVERNMENT OF THE PHILIPPINES
MLGCD-Operating Arm of GOP-approves AIP and settles reimbursements
Provincial/City Governments take charge of construction and initially fund the setting up of the water system
o BWSC remits loan amortization to provincial government
BWSC
Barangay water service cooperative (BWSC) operates the water system and sends yearly amortization to local government

There is no indication of direct remittance being made by by local government to the national government as repayment for the construction of the water systems. Reimbursements for the construction of the water system, however, are entered as income in the General Fund a portion of which is remitted to the national government. As such, repayment to the USAID is solely the responsibility of the national government.

On the other hand, the Barangay Water Service Cooperative yearly remits a specified agreed amount to the local government as amortization of a certain part of the capital costs incurred in the construction of the water system. These funds are placed in the Infrastructure Fund for use in the future for construction of other water systems. In practice, however, there is no control over these funds and as such are being used also for other development projects of the local government. Local government units are thus unable to plan when they can be able to build their own water systems independent of funding from the national government. Amortization funds remitted by the BWSCs will have to be monitored to determine exactly how much is available for construction of water projects yearly.

RECOMMENDATIONS

1. The Project should provide a system where amortization payments collected by the Provincial Government are not diluted with other Infrastructure Funds, so there could be better financial management and control of provincial barrio water works construction.

2. There might also be a need to design a system of payment remittance to the National Government if the scheme becomes necessary as might be required by other international financing, agencies e.g., the World Bank.

3. But even if the amortization payments are held by the provincial government, there is also the need to have a comprehensive provincial financial program so it could be determined at what maximum level the external funds enfusion should stop and let the cash generated by amortization payments from the construction of other barrio system, given a realistic construction schedule and plans.

## I. OTHER ADMINISTRATIVE PROCEDURES

### Project Accounting

Once the AIP and the refined cost estimates have been approved, the MLGCD reserves the required portion of its capital outlay budget for the FAR of that province/City. On the part of the province/city, the Sangguniang Panlalawigan/Panlunsod passes a resolution authorizing the Provincial Treasurer to set up a subsidiary ledger account for the project for the specific amount. Project expenditures are then recorded on a standard Project Cost Sheet. This process is followed until all the projects in the AIP have been funded or the appropriation has been exhausted.

In closing the books on December 31 of each year, the Provincial/City Treasurer can normally report as income only those amounts that he has actually received. An exception to this rule is the anticipated reimbursement from a on-going project covered by a BW-10.

### FINDINGS AND RECOMMENDATIONS

The lack of a monitoring system is quite evident among the three levels (national government, local government, and Barangay Water Service Cooperative). Local government units do not report to the MLGCD the final amount spent for the different components of Project cost while the BWSC does not send out reports to the local government unit regarding its performance.

The different BWSCs should forward to the local government units their yearly financial statements. The local government unit, in turn, should consolidate these statements and forward them to the MLGCD together with the consolidated Project Cost Sheets of projects finished for the year just concluded.

## Sub-Project Feasibility Study

The selection of eligible communities is a two-stage process. Only those projects that meet defined preliminary and final selection criteria are considered for implementation under the Project.

Communities are initially chosen based on the following criteria: 1) a population of under 5,000, highly concentrated and economically depressed; 2) the community is not presently served by MWSS, BWP and LWUA, nor is it included in the implementation programs of these agencies within the next five years; 3) the community has adequate water demand; 4) there is electricity in the area, or if there is none, the proposed water system can be gravity fed; and 5) the proposed project has been programmed for implementation in the Municipal and Provincial/City Capital Improvement Plan (CIP).

The second and final phase involves a closer examination of the project to determine whether the community is within the BWP's target population and whether the project is financially viable and technically feasible. The first two criteria (socio-economic status and financial viability) are discussed in detail in the succeeding paragraphs while the technical feasibility of the project is treated in another section of the report.

BWP financial assistance is limited to the sector of the population which falls in the lower 60% of the nation's income group. In order to determine which communities fall under this category, the structured survey method has been developed replacing the old method which resorted to time-consuming household surveys. This approach correlates the income level of a family to the type, size and condition of its dwelling structure, stating that the income level is directly proportional to the overall quality of the dwelling structures.

The structural survey starts with a meeting with the barangay captains to explain the purpose of the survey and to gather information regarding current water sources of the community. A sketch of the barangay showing the likely area to be served by the waterworks project is then prepared. The ocular survey then begins and all the houses in the barangay are then classified into 10 categories depending on the materials used and type of structure and noted down in the Listing Sheet. These houses are also classified according to their condition and assigned numerical values such as (-1) for poorly maintained, run down, dilapitated houses; (0) for normal condition; and (+1) for excellent shape, well painted, no deterioration evident.

The raw data contained in the listing sheets are tabulated and tallied according to their appropriate category, then entered in their appropriate spaces in the Financial Calculation Sheet (See Appendix 8).

The average strcutural and conditional values are then computed using the formulas:

$$\text{Average structural value} = \frac{\sum_{n=1}^{10} n \times \text{total \# of structures in category } n}{\text{total \# of structures}}$$

and

$$\text{Average conditional Value} = \frac{\left[\begin{array}{l}\text{total \# of}\\ \text{poorly}\\ \text{maintained}\\ \text{structures}\end{array}\right](-1) + \left[\begin{array}{l}\text{total \# of}\\ \text{exceptionally}\\ \text{maintained}\\ \text{structures}\end{array}\right](+1)}{\text{Total \# of structures}}$$

These values are entered in their appropriate spaces in the Financial Calculation Sheet (#13 and #17, respectively). From the above computed values, the adjusted structural value is derived using the formula:

$$\text{Adjusted structural value} = \text{adjusted structural value} + \text{average conditional value}$$

This is also entered in #18 of the Financial Calculation Sheet.

As mentioned earlier, the purpose of the structural survey is to determine whether the recipient community is within the lower income of the nation's income group. As such, if its adjusted tructural value falls within the BWP range of accepted value, 1.0 to 5.7, then it can safely be assumed that the community belongs to the targetted economically depressed sector of the population. If the value, however, is outside the accepted range, then the community is either too economically and financially poor that it will not be able to operate and maintain, much less amortize, the capital costs of the water system or that the community is relatively well off that it does not need financial assistance from the BWP.

Unlike the usual financial analysis of revenue-producing projects which seek to determine the financial viability of a project in terms of its profitability, financial analysis under the BWP seeks mainly to determine whether the recipient community is financially capable of underwriting the operational expenses and possibly amortizing a portion of the capital costs of the systems. Once it is found to be financially capable, then the following additional information are required; 1) the maximum monthly water fee that the average household can afford to pay; and, 2) the loan turns, such as the total amount of the loan, the portion to be repaid and the repayment period.

All the above data requirements can easily be determined by using the fill-in-the blank, step-by-step procedures shown in the Financial Calculation Sheet.

## FINDINGS AND RECOMMENDATIONS

The structural survey method adopted for 1979 projects has the distinct advantage of taking less time to finish than the previous method (one month as against two to three months) since it eliminates the tedious and time-consuming house to house, personal interviews used by the previous method.

Aside from this, the step-by-step, fill-in-the-blank process of the Financial Calculation Sheet provides a simpler methodology, making the preparation of the Feasibility Study easier. The former method, aside from still determining the internal rate of return, also seeks to quantify such benefits as increase in productivity due to less hours spent gathering water, and decline in sickness due to availability of potable water.

As mentioned earlier, the structural survey method is premised on the hypothesis that the income level is directly proportional to the overall quality of its dwelling structure. In trying to arrive at the average income level, the dwelling structures of the barangay were classified into 10 categories. Dwelling structures in these economically depressed areas tend to be homogeneous in type. In classifying the dwelling structures into different categories, therefore, they would tend to cluster into one or two cateories. It might be feasible then to reduce the categories into a fewer and more manageable number of about four to five categories. Even census figures classify income levels into four categories only.

APPENDIX 1

# DUTIES AND RESPONSIBILITIES OF PROJECT POSITIONS

## Provincial Development Coordination

1. Plans, coordinates and monitors the programs of the province.
2. Participates in organizing water service cooperatives.
3. Establishes and recommends listing of Barangays to be covered in the BWP.

## Project Analyst

1. Supervises activities involved in planning and coordinating the barangay water project in the province.
2. Participates in the training activities.

## Infrastructure Analyst

1. Conducts surveys on possible infrastructure projects.
2. Conducts feasibility studies on proposed projects.
3. Develops infrastructure plans and activities.

Fiscal Analyst

1. Conducts analysis on the financial performance of the province.
2. Assists in the training of BWP personnel in the financial aspects.
3. Monitors progress report on financial matters.
4. Determines sources and allocation provincial funds.
5. Analyzes and establishes trends in government revenue and income.
6. Conducts feasibility study (financial aspect).

Water Resource Analyst

1. Conducts ocular survey and socio economic/ structural survey for BWP.
2. Conducts study for proposed BWP projects.
3. Develops 5-year water resource development plan.
4. Assist in the training and organization of BWSC.
5. Updates and conducts water resource inventory.
6. Participates in the planning of water program as instructed by the PDC.
7. Assists in the dissemination of information on on-going projects and other socio-economic projects of the provincial government.

## Training Analyst

1. Develops training programs for BWSC personnel and province.
2. Schedules training program activities and attends to logistics required.
3. Administers daily activities of on-going training program.
4. Evaluates training programs conducted.
5. Undertakes dissemination of information of on-going projects.

## Researcher

1. Gathers and collates statistical data needed for one formulation of plans.
2. Undertakes research work specially on socio-economic aspect.
3. Analyzes and tabulates statistical data gathered.

## Economic Analyst

1. Conducts economic analysis of proposed projects.

## Budget Analyst

Prepares annual provincial performance budget.

## Municipal/Barrio Development Specialist

1. Assists municipal and barangay officials in community organization activities.
2. Assists the organization and training activities of different associations/cooperatives.
3. Assists in conducting feasibility studies of different projects.

## Statistician

1. Devices methods and techniques to obtain statistical data.

2. Analyzes and evaluates statistical data and survey results.

## Assistant Provincial Engineer

1. Plans, supervises and controls engineering related activities for BWP.

2. Designs waterworks system.

3. Supervises construction activities on waterworks system by conducting actual inspection and monitoring progress of work.

4. Provides technical advice in the operation and maintenance of waterworks system.

5. Supervises activities of waterworks Technicians.

6. Provides assistance in training of Project personnel particularly in the maintenance and operation of waterworks systems.

## Division Chief, Planning and Programming

1. Checks plans and estimates of all infrastructure projects.

2. Programs all infrastructure projects.

3. Conducts field inspection of infrastructure projects.

## Civil/Sanitary/BWP Engineer

1. Designs and estimates proposed BWP projects.
2. Investigates and conducts surveys on proposed site; supervises drilling activities.
3. Checks progress of work in construction and installation of waterworks systems.
4. Prepares requisition for supplies and materials needed.

## Waterworks Technician

1. Conducts periodic inspection of waterworks systems in the province.
2. Conducts echo training in the repair and maintenance of waterworks systems.
3. Maintains proper housekeeping and safety measures in the water repair shop.
4. May assist in the installation of water pumps and other ancillaries of the waterworks system.

APPENDIX 2

TRAINING PARTICIPANTS ACCORDING TO POSITIONS,
PER PROGRAM: CY 1977 PROVINCES

| | Abra | Batangas | Bulacan | Cagayan* | Palawan* | Pangasinan | South Cotabato* |
|---|---|---|---|---|---|---|---|
| Orientation for Pilot Provinces on Barangay Water Program (Feb. 23-26, 1977) | Governor, Assistant Provincial Treasurer, Deputy PDC, Provincial Engineer, PDO Infrastructure Analyst, Researcher/ Statistician | Governor, Assistant Provincial Treasurer, PDC, Civil Engineer, Project Analyst, Water Resource Analyst, C.E. Aide, Researcher /Evaluator | Provincial Treasurer, Supervising Civil Engineer, Engineering Analyst, Deputy PDC, Provincial Engineer, Sr. Researcher, PDO | PTC, Provincial Treasurer, Provincial Engineer, Jr. Civil Engineer, Project Analyst, Acting Infrastructure Analyst, Researcher | Provincial Treasurer, Deputy PDC, Supervising C.E. Water Resource Analyst Researcher, C.E. Aide, PDO | Governor, Acting Assistant Provincial Treasurer, Deputy PDC, Supervising Engineer, Provincial Analyst, Infrastructure Analyst, Member, Sangguniang Panlalawigan | Advr, Dep. Office of the Provincial Treasurer, PDC, PDO Provincial Engineer, Civil Engineer, Project Analyst, Researcher |
| Training for Provincial Corps of Trainers (April 18-20, 1977) | Assistant Provincial Engineer, Water Resource Analyst, Budget Analyst, Field Sanitary Engineer | PTC, Waterworks Engineer, Water Resource Analyst, Fiscal Analyst Training Officer/CEDO II, Clerk | PDC, Jr. Civil Engineer, Fiscal Analyst | PTC, Jr. Civil Engineer, Fiscal Analyst | Deputy PDC, Construction Supervisor, Fiscal Analyst | Deputy PDC, Provincial Staff Assistant on Crop (RDC), Fiscal Analyst, Water Resource Analyst, Sanitary Engineer, PHO Representative (No record) | PDC, Provincial Engineer, Civil Engineer, Fiscal Analyst, Training Officer, CODO II |
| Training for Engineering Design (April 21-[illegible], 1977) | (No record) | (No record) | (No record) | (No record) | (No record) | | (No record) |
| Special Skills Training for Waterworks Technicians (August 29-30, 1977) | Pipe Fitter | Construction Foreman, Mechanic | Electrician-Mechanic, Plumber | Mechanic, Plumber-Mechanic | Serviceman, Electrician | Waterworks Foreman, Well Driller | Plumber-Mechanic, Plumber |
| Training for Provincial Trainers (Sept. 22-24, 1977) | Deputy PDC, Assistant PTO, Budget Analyst, Water Resource Analyst | Training Officer, Water Resource Analyst | Project Analyst, Water Resource Analyst | Acting Water Resource Analyst | Planner, Water Resource Analyst | Training Officer, Water Resource Analyst | Provincial Development Coordinator, Training Officer, Water Resource Analyst |
| Training for Engineering Design (Sept. 26-Oct. 7, 1977) | Jr. Civil Engineer | Civil Engineer, Civil Engineer | Development Inspector | Assistant Provincial Engineer | Supervising Civil Engineer | Water Resource Analyst, Supervising Engineer | Head, Planning and Program Division, Water Resource Analyst, Jr. Civil Engineer |
| Feasibility Study Training for Pilot Provinces (Nov. 14-17, 1977) | Water Resource Analyst | Water Resource Analyst | Water Resource Analyst, Project Analyst | Acting Water Resource Analyst, Researcher | Project Analyst, Infrastructure Analyst, Water Resource Analyst | Water Resource Analyst, Marketing Analyst | Engineering Analyst, Water Resource Analyst |
| Conference Workshop on the Methodology of conducting Socio-Economic Study (July 11-22, 1978) | -- | Deputy PDC, Water Resource Analyst | Provincial Development Coordinator, Water Resource Analyst, Jr. Researcher, PDO | -- | -- | -- | Project Analyst, Water Resource Analyst, Researcher |

*Cagayan, Palawan, South Cotabato deferred implementation to 1978

APPENDIX 9

TRAINING PARTICIPANTS ACCORDING TO POSITIONS,
PER PROGRAMS, CY 1991 PROVINCES

| | Abra | Benguet | Ifugao | Kalinga* | Apayao* | Mountain Province | South Cotabato* |
|---|---|---|---|---|---|---|---|
| 1. Orientation for Pilot Barangay Water Program (Feb. 25-28, 1991) | Governor, Assistant Provincial Treasurer, Deputy PHC, Provincial Engineer, PDO Administrative Officer, Accountant/ Statistician | Governor, Assistant Provincial Treasurer, PHC, Civil Engineer, Project Analyst, Water Resource Analyst, C.E. Aide, Accountant /Engineer | Provincial Treasurer, Supervising Civil Engineer, Engineering Analyst, Deputy PHC, Provincial Engineer, B. Treasurer, PDO | PHC, Provincial Treasurer, Provincial Engineer, P. Civil Engineer, Project Analyst, Acting Administrative Analyst, Accountant | Provincial Treasurer, Deputy PHC, Supervising C.E. Water Resource Analyst Accountant, C.E. Aide, PDO | Governor, Acting Assistant Provincial Treasurer, Deputy PHC, Supervising Engineer, Provincial Analyst, Administrative Officer, Accountant, Engineering Assistant, Secretary, Computer Programmer | Admin. Dep. Officer of the Provincial Treasurer, PHC, PDO Provincial Engineer, Civil Engineer, Project Analyst, Accountant |
| 2. Training for Provincial Corps of Trainers (April 16-20, 1991) | Assistant Provincial Engineer, Water Resource Analyst, Project Analyst, Pilot Barangay Engineer | PHC, Provincial Engineer, Water Resource Analyst, Fiscal Analyst Training Officer, CESO II, Clerk | PHC, P. Civil Engineer, Fiscal Analyst | P C, P. Civil Engineer, Fiscal Analyst | Deputy PHC, Construction Supervisor, Fiscal Analyst | Deputy PHC, Provincial Soil Assistant on Clay (PSIC), Fiscal Analyst, Water Resource Analyst, Secretary Engineer, PHO Representative (No record) | PHC, Provincial Engineer, Civil Engineer, Fiscal Analyst, Training Officer, CESO II (No record) |
| 3. Training for Engineering Foreign (April 22-26, 1991) | (No record) | (No record) | (No record) | (No record) | (No record) | | |
| 4. Special Skills Training for Waterworks Technicians (August 26-30, 1991) | Pipe Fitter | Construction Foreman, Mechanic | Electrician-Mechanic, Plumber | Mechanic, Plumber-Welder | Mechanic, Electrician | Waterworks Foreman, Well Driller | Plumber-Mechanic, Plumber |
| 5. Training for Provincial Trainers (Sept. 30-Oct. 4, 1991) | Deputy PHC, Assistant PTO, Soil Analyst, Water Resource Analyst | Training Officer, Water Resource Analyst | Project Analyst, Water Resource Analyst | Acting Water Resource Analyst | Planner, Water Resource Analyst | Training Officer, Water Resource Analyst | Provincial Development Coordinator, Training Officer, Water Resource Analyst |
| 6. Training for Engineering Foreign (Sept. 30-Oct. 4, 1991) | P. Civil Engineer | Civil Engineer, Civil Engineer | Development Inspector | Assistant Provincial Engineer | Supervising Civil Engineer | Water Resource Analyst, Supervising Engineer | Head, Planning and Program Division, Water Resource Analyst, P. Civil Engineer |
| 7. Feasibility Study Training for Pilot Barangay (Nov. 26-12, 1991) | Water Resource Analyst | Water Resource Analyst | Water Resource Analyst, Project Analyst | Acting Water Resource Analyst, Accountant | Project Analyst, Administrative Analyst, Water Resource Analyst | Water Resource Analyst, Monitoring Analyst | Engineering Analyst, Water Resource Analyst |
| 8. Conference Workshop on the Methodology of Conducting Socio-Economic Study (July 15-26, 1991) | — | Deputy PHC, Water Resource Analyst | Provincial Development Coordinator, Water Resource Analyst, P. Accountant, PDO | — | — | — | Project Analyst, Water Resource Analyst, Accountant |

*Capiz, Palawan, South Cotabato delayed implementation to 1992

| | Abra | Batangas | Bulacan | Cavite | Palawan | Pangasinan | South Cotabato |
|---|---|---|---|---|---|---|---|
| 9. Supervisors' Training on Socio-Economic Study (Sept. 11-13, 1978) | -- | Water Resource Analyst | Water Resource Analyst | Civil Engineering Aide | Water Resource Analyst | Water Resource Analyst | Water Resource Analyst |
| 10. Trainors' Training on Socio Economic Study (Sept. 14-16, 1978) | -- | -- | Provincial Development Coordinator, Water Resource Analyst | -- | -- | -- | Water Resource Analyst |
| 11. Enumerators' Training on Socio Economic Study (Sept. 18-22, 1978) | Water Resource Analyst, Economic Researcher | Water Resource Analyst, Fiscal Analyst, Monitoring Officer, Junior Clerk | PDC, WRA, Jr. Researcher, Research Clerk, Statistical Aide | Project Inspector, Infrastructure Analyst, Statistician, C.F. Aide | Statistical Aide | Training Officer, WW Engineering, Monitoring Analyst | WRA, Program Analyst, Researcher |
| 12. Tabulation and Feasibility Study Training (Dec. 4-8, 1978) | Water Resource Analyst | Water Resource Analyst | Water Resource Analyst | Civil Engineering Aide | Water Resource Analyst | Water Resource Analyst | Water Resource Analyst |
| 13. Re-orientation Training (Feb. 17, 1979) | Water Resource Analyst | -- | -- | Deputy PDC | Deputy PDC, Water Resource Analyst | -- | -- |
| 14. Design and Construction of Water Supply Systems (May 14-25, 1979) | Assistant Provincial Engineer | -- | -- | Civil Engineer Aide | -- | Two (2) Waterworks Engineer | -- |
| 15. Corps of Trainors Training (Sept. 3-7, 1979) | Fiscal Analyst | -- | -- | -- | Acting Water Resource Analyst | Training Officer, WRA, Monitoring Analyst, Fiscal Analyst | -- |
| 16. Refresher Skills Training for Waterworks Technicians (Sept. 17-22, 1979) | Two (2) Waterworks Technicians | Sr. Pipefitter Construction Foreman, Pipefitter | Equipment Inspector, Plumber | Two (2) Waterworks Technician | Foreman, Electrician-Plumber | Well Driller, Assistant Well Foreman | Waterworks Technicians, Mechanic |

APPENDIX 3

## TRAINING PARTICIPANTS ACCORDING TO POSITION, PER PROGRAM: CY 1978 PROVINCES

| | | Bataan | Davao Norte | Iloilo | La Union | Misamis Oriental |
|---|---|---|---|---|---|---|
| 1. | Orientation Training | | | | | |
| 2. | Skills Training for Waterworks Technician (Aug. 22-26, 1977) | Mechanic II<br>Mechanic | Mechanic I | Power Plant Operator<br>Mechanic | Statistician | Supervising C.E., Environmental Specialist, C.E. Aide |
| 3. | Provincial Corps and Trainers Training (Sept. 22-24, 1977) | CODO II, Acting Training Officer, Acting Financial Analyst, Acting Barangay Waterworks Analyst | CODO II, Training Officer, Water Resource Analyst, Acting Assistant Administrative Services, Environmental Sanitation Coordinator | Provincial Development Coordinator, Economist, Fiscal Analyst Draftsman, C.E. Aide | CODO II, Water Resource Analyst, Cooperative/Marketing Analyst, Statistician | CODO II, Training Officer, Sr. C.E. Programming and Designing Water Resource Analyst, Chief Sanitary Inspector, Fiscal Analyst |
| 4. | Training on Engineering Design (Sept. 26-Oct. 7, 1977) | Sr. C.E.'s (2), WRA | Sr. C.E.'s (2) | C. E.<br>C. E. Aide | Planning Officer, Construction Engineer, C.E. Aide | Supervising C.E.<br>Sr. C.E. |
| 5. | Feasibility Study (Nov. 14-17, 1977) | F.A. (Acting), Special Program Assistant, Chief Researcher | Statistician<br>WRA<br>Economic Researcher | PDC<br>Economist<br>F.A. | WRA,<br>Statistician | Researcher-Statistician<br>F.A., WRA |
| 6. | Design-Construction of Water Supply System (April 10-19, 1978) | -- | Civil Engineer Aide | Sr. Draftsman, Civil Engineering Aide | -- | Supervising Civil Engineer, Civil Engineer |
| 7. | Supervisors' Training in the Methodology of Conducting Socio-Economic Studies Feasibility Study (Sept. 11-13, 1978) | Assistant Provincial Development Coordinator | Water Resource Analyst | Project Analyst | Water Resource Analyst | Environmental Specialist, Civil Engineering Aide |
| 8. | Enumerators' Training on Methodology of conducting Socio-Economic Study (Sept. 18-22, 1978) | Chief Researcher/Statistician, Researcher | Water Resource Analyst, Civil Engineering Aide | Municipal Development Specialist, Researcher/ Statistician, Research Aide, Statistician Aide | Statistician | Supervising C.E., Environmental Specialist, C.E. Aide |

APPENDIX 3(2)

| | | Bataan | Davao Norte | Iloilo | La Union | Misamis Oriental |
|---|---|---|---|---|---|---|
| 9. | Tabulation and Feasibility Study Training (Dec. 4-8, 1978) | Chief-Researcher/Statistician | Water Resource Analyst | Fiscal Analyst, Statistical Aide, Research Aide | Water Resource Analyst | Fiscal Analyst, Civil Engineering Aide, Water Resource Specialist |
| 10. | Re-orientation Training (Feb. 17, 1979) | Provincial Development Coordinator | Provincial Development Coordinator | Provincial Development Coordinator | -- | Provincial Development Coordinator |
| 11. | Design and Construction of Water Supply Systems (May 14-25, 1979) | Civil Engineer | Sr. Civil Engineer | Civil Engineer, Construction Foreman | -- | -- |
| 12. | Corps of Trainors' Training (Sept. 3-7, 1979) | -- | -- | -- | Training Officer<br>Water Resource Analyst | -- |
| 13. | Refresher Skills Training for Waterworks Technicians (Sept. 17-22, 1979) | Mechanic I, Jr. Architect Draftsman | Mechanic II | Mechanic Plant Operator<br>Automotive Mechanic | Mechanic, Utility Laborer | Welder, Electrical Helper |

APPENDIX 4

## TRAINING PARTICIPANTS, ACCORDING TO POSITION, PER PROGRAM: CY 1978 PILOT CITIES AND SORSOGON

| | Dagupan City | Naga City | Cagayan de Oro | Puerto Princesa | Roxas | Sorsogon |
|---|---|---|---|---|---|---|
| 1. Orientation for Pilot Cities and Sorsogon (Nov. 11-12, 1977) | Urban Planner, OIC, CPPS, City Engineer, Chief Motor Pool | City Development Coordinator, OIC/CDO, Assistant City Auditor, Engineering Analyst, City Health Officer, Clerk In-Charge of Barangay Affairs | -- | Mayor, City Development Coordinator, CDO, City Treasurer, City Auditor, Chief, Maintenance of Artesian Wells, Engineering Analyst | Assistant City Treasurer, City Engineer, Project Analyst | Governor, PDC, PDO, Provincial Auditor, Provincial Engineer, Administrative Deputy |
| 2. Feasibility Studies (Nov. 14-17, 1977) | -- | -- | -- | Chief, Maintenance of Artesian Wells, CODO | -- | Fiscal Clerk, F.A., C.E., Researcher |
| 3. Design and Construction of Water Supply System (April 10-19, 1978) | Engineering Analyst, Assistant City Engineer, Waterworks Superintendent | Chief, Planning Survey and Construction Division | Engineering Analyst, Civil Engineer, Sr. Civil Engineer | Sanitary Engineer, Mechanical Engineer, Engineering Analyst | City Engineer | Civil Engineer, C.E. Aide, C.E. Aide |
| 4. Trainors' Training on Feasibility Studies and BWA (May 2-6, 1978) | Training Officer, Fiscal Analyst, Engineering Analyst | -- | Training Officer, Fiscal Analyst, CODO II | -- | -- | Public Information Officer, Water Resource Analyst, Fiscal Analyst, CODO II |
| 5. Supervisors Workshop on the Methodology of Conducting Socio-Economic Study (Sept. 11-13, 1978) | Engineering Analyst | Project Analyst | Civil Engineering Aide, Engineering Analyst | Chief, Maintenance of Artesian Wells | -- | Project Analyst |
| 6. Enumerators' Training on Socio-Economic Study (Sept. 18-20, 1978) | Engineering Analyst, Statistician I | Project Analyst | Management Specialist, Researcher, Statistician, Research Assistant | Sanitary Engineer, Economist, Researcher, Clerk | -- | Project Analyst, Agricultural Analyst, Researcher/ Statistician |

*Sorsogon attended a second orientation course (Oct. 1979). Participants were: Local Government Officer II, Development Project Analyst, Fiscal Analyst.

| | | Dagupan City | Naga City | Cagayan de Oro | Puerto Princesa | Roxas | Sorsogon |
|---|---|---|---|---|---|---|---|
| 7. | Tabulation and Feasibility Studies Training (Dec. 4-8, 1978) | Engineering Analyst | -- | Statistician/Researcher, Research Assistant | -- | Acting Water Resource Analyst | -- |
| 8. | Initial/Re-orientation Training (Feb. 17, 1979) | -- | City Development Coordinator | -- | Chief, Maintenance of Artesian Wells, WRA | City Development Coordinator, Water Resource Analyst | -- |
| 9. | Design and Construction of Water Supply System (May 14-25, 1979) | -- | -- | Water Resource Analyst | Chief, Maintenance of Artesian Wells | Acting Water Resource Analyst | -- |
| 10. | Corps of Trainors' Training (Sept. 3-7, 1979) | -- | -- | -- | -- | Acting Water Resource Analyst | -- |
| . | Refresher Skills Training for Waterworks Technicians (Sept. 17-22, 1979) | -- | -- | Supervising Mechanic, Plumber | Chief, Maintenance of Artesian Wells | Waterworks Technician | -- |

APPENDIX 5

## TRAINING PARTICIPANTS, ACCORDING TO POSITION, PER PROGRAM: CY 1978 PROVINCES AND CITIES

| | Agusan Sur | Camarines Sur | Cebu | Mindoro Oriental* | Pampanga | Quezon | Samar* | Zambales | Butuan City | General Santos |
|---|---|---|---|---|---|---|---|---|---|---|
| 1. PPP Orientation Training (Feb. 13-17, 1978) | Provincial Development Coordinator, Provincial Engineer, CEO, Provincial Treasurer, Assistant Provincial Development Officer | Provincial Development Coordinator, Supervising Civil Engineer II | Governor, Deputy PDC, Provincial Treasurer, Provincial Development Officer | Provincial Engineer, Project Analyst, Provincial Treasurer | -- -- | Provincial Engineer, Agricultural Analyst | Provincial Development Coordinator, Provincial Engineer, Provincial Treasurer | Provincial Engineer Agricultural Analyst | City Development Coordinator, City Treasurer | City Engineer |
| 2. Design and Construction of Water Supply Systems (May 14-25, 1978) | Assistant Provincial Engineer, City Engineer, D. Civil Engineer | Supervising C.E. II, Supervising C.E. I, Water Resource Analyst | D. Civil Engineer, D. Civil Engineer, Water Resource Analyst, Statistical Aide, Mechanic II | -- | Head, Planning Programming, Chief, Construction Section | Provincial Engineer, Supervising C.E. I | Civil Engineer, Infrastructure Analyst, Economic Researcher | Civil Engineer, Civil Engineer Aide | Civil Engineer, Civil Engineer Aide | -- |
| 3. Structural Survey and Feasibility Study (May 21-25, 1978) | Infrastructure Analyst, Researcher | Water Resource Analyst, Statistician, Training Officer | Infrastructure Analyst, Researcher/Statistician, Clerk | -- | Water Resource Analyst, D. Economic Researcher | Agricultural Analyst, Chief, Barangay Affairs Section | Infrastructure Analyst, Economic Researcher | Water Resource Analyst Researcher/Statistician | Management Analyst | -- |
| 4. Refresher Skills Training for Waterworks Technicians (Sept. 17-22, 1978) | -- | Mechanic II, Waterworks Technician | D. Mechanic, Mechanic II | Plumber, Mechanic | Two (2) Waterworks Technicians, Foreman | -- | Mechanic, Plumber | Two (2) Waterworks Technicians | -- | Draftsman, Mechanic II, Plumber |
| 5. Corps of Trainors Training (Sept. 3-7, 1978) | -- | Provincial Development Coordinator, Fiscal Analyst, Training Officer, Mechanical Engineer, WRA, Fiscal Analyst | Provincial Development Coordinator, Fiscal Analyst, Agricultural Analyst, WRA | LGOII, Acting T.O.I Water Resource Analyst Fiscal Analyst. | Training Officer, Water Resource Analyst | FIRO and Project Trainor Fiscal Analyst | Water Resource Analyst, Analyst, Cop Officer, Economic Researcher | Training Officer, Financial Analyst, Water Resource Analyst | Management Analyst, Water Resource Analyst | Project Analyst, Civil Engineer Aide I |

Programs Attended by Mindoro Oriental and Samar, in addition to those above:

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| a. Skills Training for Waterworks Technicians (Aug. 22-26, 1977) | -- | -- | -- | Instrumentation-Plumber, Mechanic | -- | -- | -- | -- | -- | -- |
| b. Provincial Trainors' Training (Sept. 27-30, 1977) | -- | -- | -- | Assistant PDC, WRA, FA (Acting) Chief Sanitary Inspector | -- | -- | Infrastructure Analyst, COOO II | | | |
| c. Engineering Design and Construction (Sept. 26-Oct. 7, 1977) | -- | -- | -- | Two (2) Jr. C.E.'s | -- | -- | -- | -- | -- | -- |

*Mindoro Oriental and Samar were originally with the 1978 Provinces

APPENDIX 6

## TRAINING PARTICIPANTS, ACCORDING TO POSITION, PER PROGRAM: CY 1980 PROVINCES

| | Abra | Albay | Agusan Norte | Cagayan* | Mindoro Occidental |
|---|---|---|---|---|---|
| Orientation Training for Barangay Water Program (Oct. 24-26, 1979) | Provincial Engineer, Assistant Provincial Treasurer, Provincial Administrator, Development Project Analyst, PDO, Provincial Auditor, Provincial Secretary | Provincial Governor, Acting PDC Provincial Engineer, PDO, Waterworks Administrators, Provincial Treasurer, Chief Provincial Auditing Division | Provincial Governor, Vice-Governor, Provincial Engineer, PDO, Provincial Development Coordinator, Provincial Treasurer | Provincial Governor, Provincial Development Coordinator, Provincial Engineer, Provincial Treasurer, Vice Chairman, S.P., PDO | Provincial Engineer, Sangguniang Member, Provincial Treasurer, Infrastructure Analyst |
| Programs attended by Cagayan in addition to the above: | | | | | |
| o Trainors' Training (Sept. 22-24, 1977) | -- | -- | -- | PDC, Assistant PDC, F.A., CODO II, Supervising CEO, Rural Sanitary Inspector | -- |
| o Engineering Design and Construction (Sept. 26-Oct. 7, 1977) | -- | -- | -- | Infrastructure Analyst | -- |
| o Feasibility Study (Nov. 14-17, 1977) | -- | -- | -- | Infrastructure Analyst, Researcher-Statistician, Agricultural Analyst, Fiscal Analyst | |

*Cagayan was originally with the 1978 Provinces.

APPENDIX 7

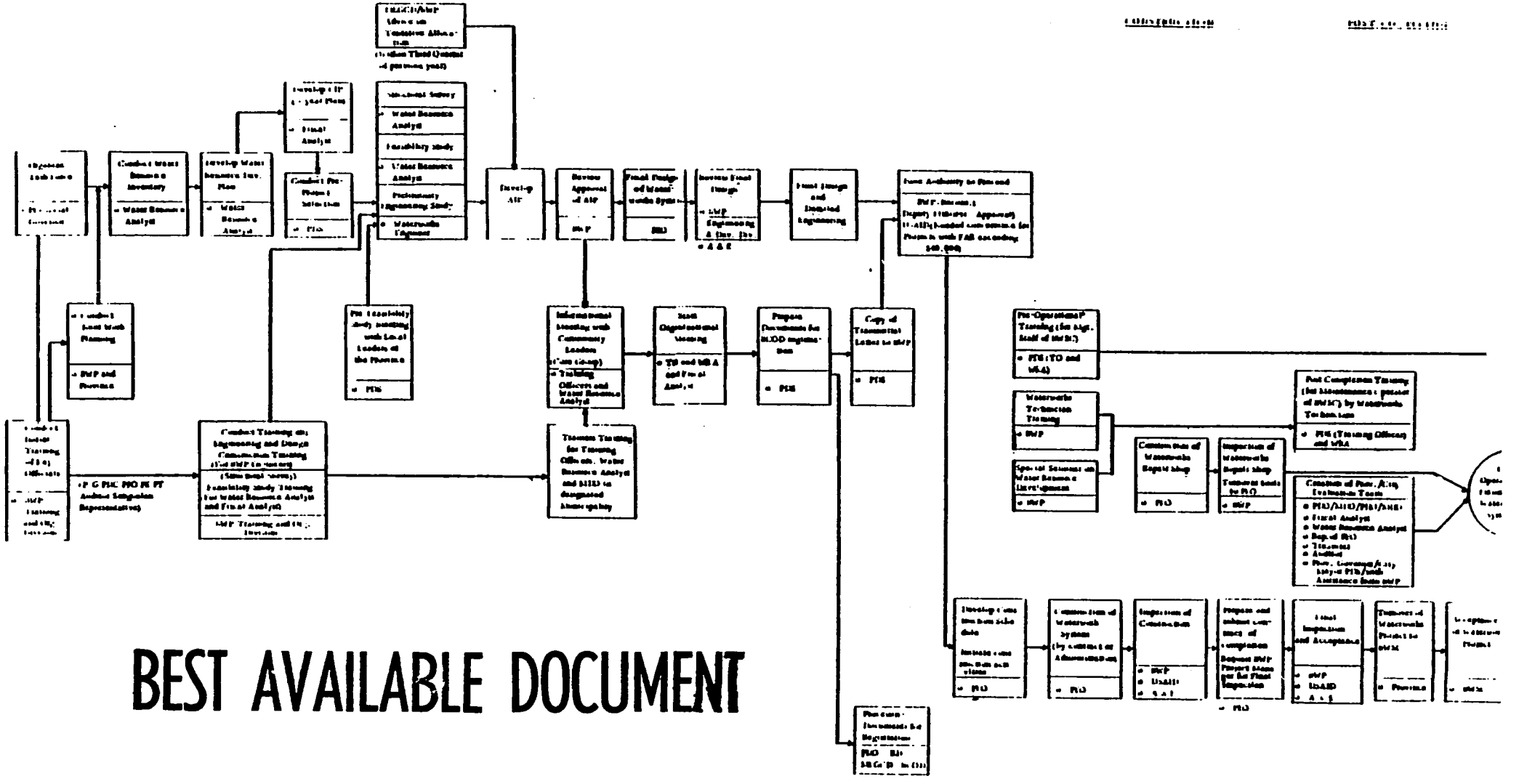
## TRAINING PARTICIPANTS, ACCORDING TO POSITION, PER PROGRAM: CY 1980 CITIES

| | Angeles City | Batangas City | Legaspi City | Lucena City | Zamboanga City | Tangub City |
|---|---|---|---|---|---|---|
| 1. Orientation Training for BWP (Oct. 24-26, 1979) | City Development Coordinator, City Development Officer | City Mayor, Mechanical Engineer, Sanggunian Member, Project Analyst, Auditing Examiner I, Assistant City Treasurer, ABC President, CDO, Sr. C.E.,City Engineer | City Mayor, Auditor, CDO, Sr. Planning Officer, Mechanical Engineer, Development Project Analyst, Statistician, Assistant City Engineer | City Mayor, Sanggunian Member, City Development Coordinator, Assistant City Engineer, Deputy Administrator (Treasurer/s Office) | COA Auditor, Sanggunian Bayan Member, Public Works City Planning Officer, Action Office, City Engineer, CDO, Assistant City Engineer | |

APPENDIX 8

# FINANCIAL CALCULATION SHEET

1. Total number of structures of categroy one _____
2. Total number of structures of category two _____
3. Total number of structures of category three _____
4. Total number of structures of category four _____
5. Total number of structures of category five _____
6. Total number of structures of category six _____
7. Total number of structures of category seven _____
8. Total number of structures of category eight _____
9. Total number of structures of category nine _____
10. Total number of structures of category ten _____
11. Total number of #10 that are commercial _____
12. Total number of structures _____
13. Average structural value _____
14. Total number of poorly maintained structures _____
15. Total number of normally maintained structures _____
16. Total number of exceptionally well maintained structures _____
17. Average conditional value _____
    (#14 x -1) + (#16 x 1) ÷ 12 _____
18. Adjusted structural value (#13 + #17) _____
19. Assumed average monthly income per household _____
    (#18 x ₱70.00)
20. Available for monthly payment (3% of #19) _____
21. Maximum monthly water bill per BWP policy ₱15.00 _____
22. Monthly water fee to be adopted _____
    (least value of #20 or #21)



APPENDIX 8(2)

23. Estimated number of member household _____

(assume 90% of total households within served area)

24. Monthly operating expenses for salaries and wages _____

(#23 x ₱1.50)

25. Monthly power bill (from design guide #15) _____

26. Monthly chemical cost (from design guide #22) _____

27. Monthly reserve for replacement, r and m, training, miscellaneous costs and contingencies _____

28. (40% of #24 + #25 + #26)

28. Total monthly operation expense _____

(#24 + #25 + #26 + #27)

29. Available for monthly amortization payment _____

(#22 x #23) - (#28)

30. Annual amortization (#29 x 12) _____

31. Total loan amortization _____ years

32. Repayment period _____

33. Estimated capital cost _____