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# VILLAGE WATER PROGRAM

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Project Manager  
Barangay Water Program  
Ministry of Local Governments  
& Community Development

~~MD 4647~~ (2nd copy)

Governments must be convinced that it is possible to achieve the goal of providing clean drinking water and sanitation for all by 1990 and therefore place the (Water) Decade's objectives ahead of other development initiatives.

-----Dr. Peter G. Bourne  
Assistant Secretary General  
UNDP

It is hereby declared to be the policy of the State to pursue in an orderly and vigorous manner the attainment of complete coverage of water supply services for the whole country.

-----Pres. Ferdinand E. Marcos  
(Executive Order No. 577)  
Republic of the Philippines

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## INTRODUCTION

Water supply programs, almost invariably, are associated with health improvement. In the Philippines, as in neighboring Asian countries, rural water supply programs are health oriented. Consequently, the attendant development of technology is aimed at providing more people with sufficient, safe water more efficiently.

In the Philippines, studies conducted by national agencies, as well as by international organizations, revealed that up to 1975 only five per cent (5%) of the approximately 36 million living in the rural areas have access to potable and adequate water supply. The findings also showed high incidence of mortality and illnesses due to water-related diseases. It should be noted, however, that as early as 1955, at least, three Philippine agencies were undertaking already village water supply programs. The studies, it could be inferred, suggested certain weaknesses in these programs.

Results of the said studies, and other related assessments subsequently made, brought about new water resource development efforts that are conceived to be more effective and more responsive to needs in the rural communities. To illustrate the characteristics of the present concepts in water supply in the Philippines, this paper shall make frequent reference to the project undertaken by the Ministry of Local Governments and Community Development, called NATIONAL WATER PROGRAM.

This program, familiarly called BWP, operates upon a few philosophies. For instance, the 36 million rural Filipinos live in about 45,000 villages, or political units called barangays. The needs of these barangays for safe water could be served more efficiently by capable provincial and city governments than by any entity operating from Metro Manila, the national capital. The beneficiaries themselves, properly trained and organized, could manage the water project more adequately than any other agency.

BWP, created in 1977, sought to develop an approach or a methodology for operating a water supply program that would not only improve health conditions in the rural areas, but would develop, at the same time, the capability of local government units to plan, finance and implement water projects that are responsive to the problems of barangays. The following discussions, therefore, focus on a strategy for implementing a water resource development program that will bring about capable local governments and viable communities.

### THE CONCEPT

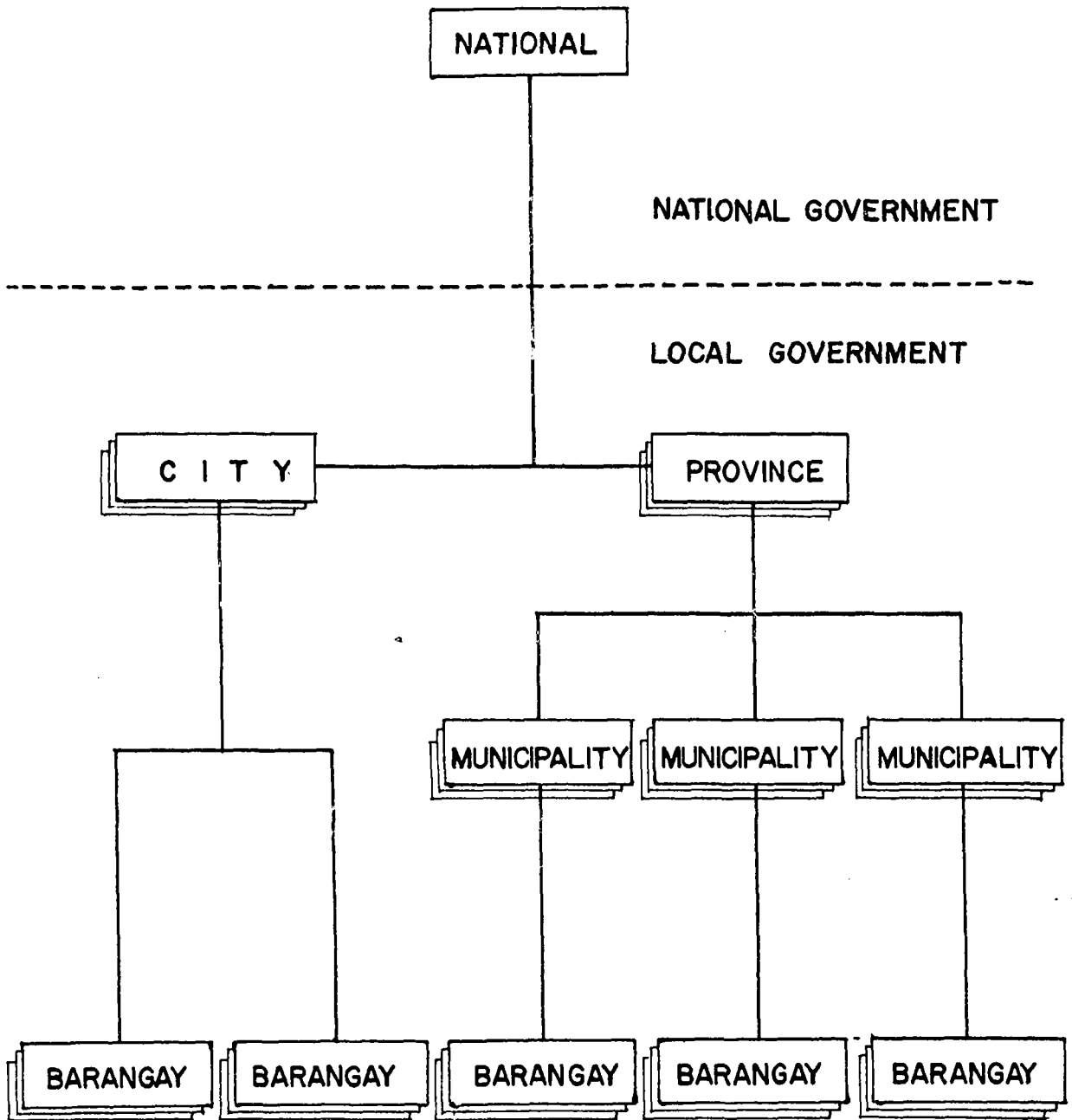
#### I. Simple, low-cost projects.

A rural community-oriented water supply program should include low-cost facilities that deliver maximum benefits at the most economical rate. The project costs should be compatible with the country's economic standard or level. In the Philippines, for instance, P400 (US \$53.33) per capita cost meets this criterion.

In addition to being inexpensive, the projects should be easy to plan, design and install. On the part of the local government units which shall



**STRUCTURE OF PHILIPPINE GOVERNMENT**  
(SHOWING ADMINISTRATIVE SUB-DIVISION)



In the Philippines, there are:

- 75 provinces
- 60 cities
- 30,000 municipalities
- 45,000 barangays (villages)

implement the program, the procedures should be consistent with conditions existing within administrative systems of city and provincial governments. Provinces and cities in the Philippines have limited resources, particularly in terms of manpower and funds. Therefore, the projects envisioned should entail small man-hour requirements, and design elements and standards that are simple and realistic.

## II. Program institutionalization.

If the water supply program is to be pursued by local governments with only minimum assistance from the national government, viable local governments are a necessary ingredient to the whole effort. "Viable local governments" mean capable development planning staff, capable engineering office, and local offices prepared to support the program. Capability of planning staff and engineering office is brought about by strengthening the local government unit (province or city), which, in turn, is accomplished through training or technology transfer. In addition to formal trainings, local government personnel should be provided the opportunity of learning by actually experiencing the implementation of one or two water projects. These initial projects should be subjected to close, process-oriented supervision.

Along with the development of local governments, the other most critical ingredient of a water resource development program is the organization of the recipient community. The people in the service area of the water project should form a group that shall be prepared to own, administer and manage the completed water project.

Philippine governmental authorities have decided that formation of

cooperative societies be promoted in the agricultural sector, and likewise for the water service sector. The beneficiaries of a water project, therefore, are trained and organized formally into a cooperative (some of these organizations, depending on the agency with which they are registered, are called associations). According to its capacity to pay, determined by a study, the community shall be assessed water fee per household per month at a rate not exceeding P15.00 (US \$2.00) or 5% of average family income (whichever is less). A part of this monthly water fees shall go to amortizing a portion or the total cost of the project, to the local government. This amount to be collected by the local government shall be used to finance other water projects.

#### THE APPROACH

##### I. Structure.

Although the actual implementor of the program shall be the local governments, there is a need to institute the operation at the national level. An appropriate agency shall host and support a program management staff (PMS) which shall develop the procedures of implementation and the subsequent policies. The PMS, in fact, should continually refine and strengthen operational strategies and methods.

Strategies and techniques for prosecuting a water resource development program developed by the PMS shall be employed by implementors at the regional or local level. Transfer of technology from the national staff to technicians of local governments shall be undertaken through a series of well-planned training activities. The learning process is enhanced by actual experience; initial projects shall be implemented which shall be small enough

to be easy to monitor.

Community involvement is necessary to the water supply program. The community that forms the service area of the water system shall be organized into a group that will manage and maintain the project, and earn full equity of the facility by repaying the local government unit a portion or the total cost of the project, depending on its capacity to pay.

A pilot program, or a field-test phase, should be pursued for at least a year, to test the validity of the general concepts of the water supply program. During this "laboratory" period, the PMS shall develop the mechanics of program operations and conduct a series of trainings for local government personnel. The local government unit, on the other hand, shall identify the target community, organize the prospective users, plan and design the water project, install the water system, and, upon completion, turn the facility over to the community. The community shall own the system, amortize the cost of this to the local government, and manage it in a manner that will keep the project financially viable.

## II. Aspects.

The three crucial aspects of an effective water supply program are: training, organization and infrastructure. Training activities are the vehicles for acquainting decision-makers of local governments with the concept and mechanics of the program; for teaching local government trainers the techniques of community training and organization; for teaching engineers the methodologies and standards of rural water supply design and construction; and for letting the community learn the concept and advantages of operating a functional organization.

The organizational aspect of water resource development concerns not only the recipient-community, but also the local governments. At the implementing level (the province or city), there should be formed a policy-making and steering body, e.g., a Water Resource Development Task Force or Committee. This body shall be headed by the local government chief executive and composed of representatives of agencies concerned with water supply projects. Also to be developed at the local government level are the working units, which deal with development planning and with engineering.

Infrastructure for water programs shall be the responsibility of local government engineering offices. In the Philippines, provincial or city engineering office conduct preliminary engineering study, accomplish the final design and estimates and supervise construction of water projects. The engineering office should be able also to assist community organizations undertake major repairs of water systems.

## ..II. Local program.

Provision of safe water to the rural areas should be a local government program. Local governments are in constant direct contact with the rural citizens and the village leaders. Supported with sufficient resources, local governments can implement water supply efforts that are aptly relevant to the rural communities' needs and problems. The role of the national government, therefore, may be as the provider of support, and as the agency that monitors, coordinates and regulates the whole water program.

Development planning by local governments shall take into account

the potable water needs of communities covered by the plan. Long range and short range objectives for the water supply sector shall be considered. In other words, the water supply program shall be a part of the whole development program of the local government unit; it shall be included in the system of priorities; and it shall be one of the sectors considered for funding. Installation of water projects as with roads and bridges, shall be undertaken by the local engineering office.

#### IV. Community development.

Carrying out a water project in a village is introducing a change in that society. The change is perpetuated when the physical improvement is accompanied by moral development. In the water supply program, the users themselves shall own, and therefore, operate and maintain the water project. An appropriate way of bringing this about is by organizing the beneficiaries into a functional duly informed group. This organization should feel a sense of ownership for the project, and should be willing to work together to operate it successfully. The cooperative concept and principle might be the approach for this type of endeavor.

#### V. Fixed amount reimbursement.

Funding water supply programs, in many cases, are largely borne by central or national governments. At this stage, in the Philippines, the bulk of fiscal investments in water resources development originate from the national government. It is envisioned that this, along with other needed resources available today at the national government, shall have been transferred, in the near future, to local governments, so that the provinces and cities can pursue water projects in the spirit of true autonomy.

One of the strategies conceived for effectively bringing about this transfer is the fixed amount reimbursement (FAR) scheme. This scheme, when adopted, merely means that a local government unit, participating in the water supply program, spends its own funds in the installation of the water project, and the national agency reimburses that local government unit the direct cost of the project, once this is completed. In the Philippines, this approach allows BWP to exercise necessary process-oriented controls upon project implementation, consistent with the province's or city's phase.

The amount of reimbursement, which is equivalent to the direct costs of the project, is determined and agreed upon by the local government unit and the national agency at the time that the final design is being considered by the PMS. At the start of project construction, the local government unit may be provided a fraction of the FAR (10% to 25%), as advance funding. (In BWP, this is termed "seed money" or grant-in-aid funds, intended to assist provinces and cities initiate the installation of water systems.) Some variations of the reimbursement scheme may be employed, depending on suitability to financial conditions in local governments. Progress payments, or making available some funds at certain stages in project construction, may also be introduced into the approach, if necessary. What is vital in the use of this scheme is that local government units undertake the project in the manner that will lead to the realization of the goal for which the activity was envisioned, and that water facilities completed shall be according to acceptable engineering and health standards.

## PRE-CONDITIONS & REQUIREMENTS

A water supply program should prescribe certain pre-conditions and requirements that local governments should comply with in order to be qualified to participate. Based on the Barangay Water Program experience, here are some of the requirements that local government units should fulfill to be able to carry out an effective water supply program.

### I. Personnel and organizations.

Under the economic development council, or a similar body in the province or city, which determines general policies on development ventures, there should be created by the local chief executive, a water resource development task force. This task force, or an equivalent group, formulates guidelines and targets for the local water supply effort, and generates inter-office coordination on water resource development. The development planning and the engineering units are local government organizations that should be strengthened and staffed with the minimum number of technicians consistent with workloads of the development programs contemplated.

For the water supply sector, the number of personnel required in either the development planning or the engineering units shall be dependent upon the size of the program. In the Philippines, for provinces or cities implementing up to five projects a year, it was seen that in the development planning staff there should be one Water Resource Analyst and one Training Officer, in addition to the other personnel who attended to other development programs; and in the engineering office there should



be one waterworks engineer (either a civil, sanitary or mechanical) and two waterworks technicians (sub-professional type, either plumber, mechanic or electrician), in addition to the other personnel who manned the other technical chores.

These personnel shall be full-time civil service employees, and they shall be provided adequate training by the national agency administering the water program. Because of constant personnel turnovers in the local governments due to transfers to other offices (in many cases, movement to private companies) and resignations, the water program should include a continuous training system at the national or regional levels. Supervision and technical assistance shall be provided by the PMS to the local government technicians, especially during their learning phase.

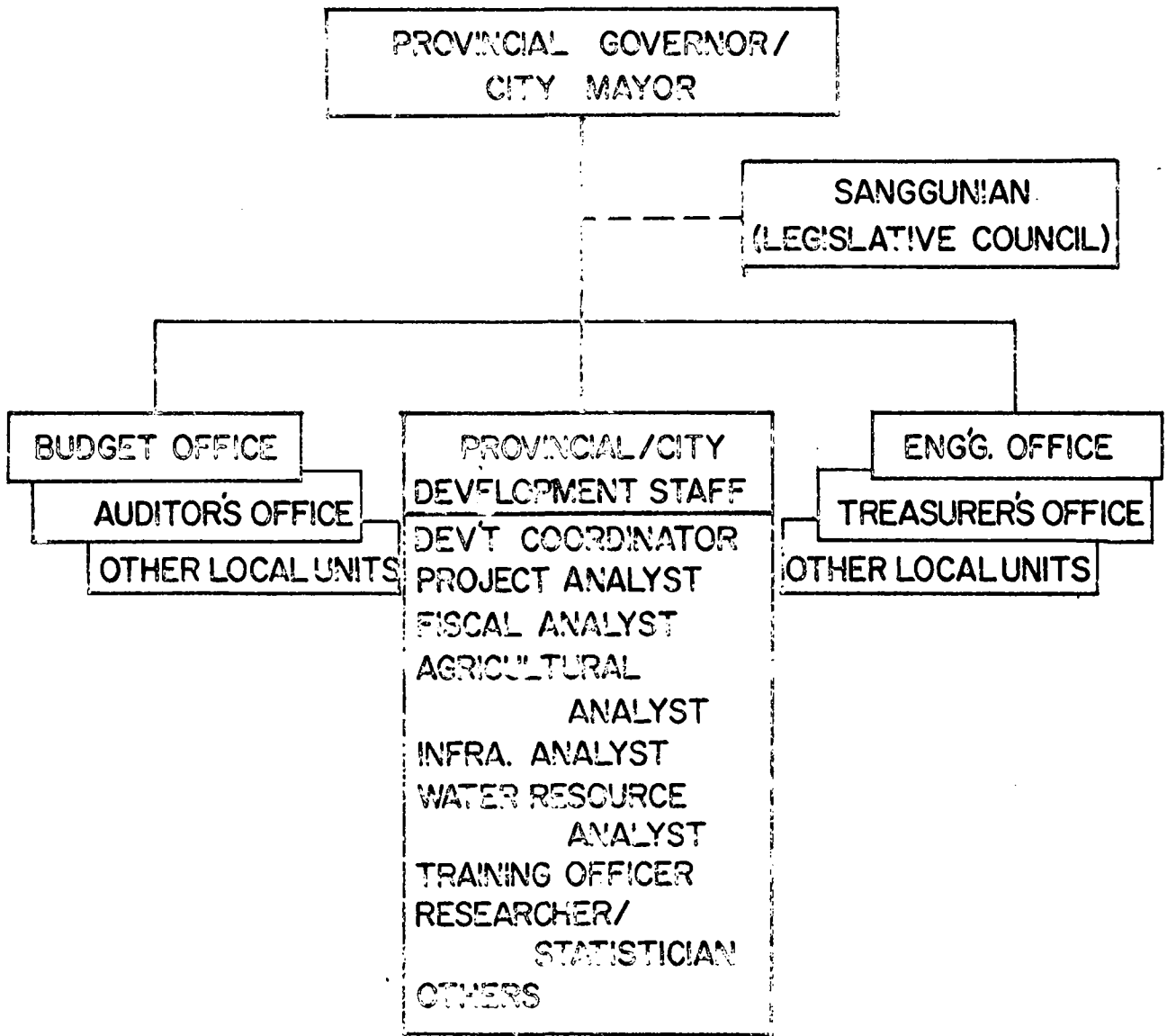
## II. Waterworks repair shop.

The waterworks repair shop is a facility operated by the two waterworks technicians mentioned above. This is intended to provide repair and maintenance assistance to water projects in that local government unit. In order to be capable of extending technical support to water projects, particularly with jobs that are beyond the competence of the recipient communities, the shop should be adequately equipped, and designed to include a work area and modest office space.

Constructed and administered as a local government investment in the water program, the waterworks repair shop shall be located, preferably, within the equipment pool compound. For provinces and cities, in the Philippines, it is virtually a must to have equipment pools which support

# ORGANIZATIONAL CHART

## THE LOCAL GOVERNMENT DEVELOPMENT STAFF



NOTE: There are as many technicians in the staff as required by the local development programs.

infrastructure activities. These equipment pools are operated by the engineering offices and in almost all cases situated in central areas or at the capital towns. The repair shop could be installed in a corner of the pool compound; or where there is a limitation of available spaces, a repair bay at the end of the maintenance section could be converted into a waterworks repair shop.

### III. Budget.

The budget of a local government unit participating in the water supply program should reflect all pertinent activities concerning water resource development. Appropriations should be made for the needed personnel (particularly, the technicians mentioned above), for the training of these personnel, and for attendant operating expenses. In addition, because the local government unit shall initially fund construction of projects, the budget should include appropriations equivalent to cost of proposed projects plus administrative overhead and contingencies. In the Philippines, local government budgets are divided into General Fund and Infrastructure Fund. Under EWP, a local government unit is required to appropriate in the General Fund, in addition to salaries of needed personnel, at least P30,000.00 (US \$4,000.00) for training or staff development; and in the Infrastructure Fund, in addition to salaries of engineers and technicians, the total direct costs of projects and additional 5% of those direct costs. (The amount required is: Proposed FAR x 1.05.)

The water supply program should be part of the development planning effort of a local government unit. In the establishment of priority

system, the value of water projects and their relevance to current rural development problems should be considered, along with other programs. As for other pursuits, cash flow projections shall also be accomplished for water supply projects. Under the current budget practice, 80% of the proposed fixed amount reimbursement is considered (and entered in the budget) anticipated income. (The "good money" is only treated as income when it is actually received by the treasurer. )

The local government budget in the Philippines is deliberated upon and legislated by the Sangguniang Panlalawigan (province) or Sangguniang Panlungsod (city). Acquainting, therefore, the members of the legislative council on the mechanics, principles and importance of the water supply program is crucial; so that when decisions are made concerning priorities for financial support, the water resource development effort is accorded the consideration it is due.

#### IV. Documentation.

Records depicting and describing the entire operation of the water supply program shall be made and kept by the local government unit. Copies of these documents shall be furnished the national agency, for proper monitoring and as references in subsequent evaluations. Documentation shall start with the formalization of the local program, which should involve a Memorandum of Agreement between the local government unit and the national agency, and terminate with assessment of completed projects, which should entail evaluation reports on water systems already being managed by rural waterworks associations or cooperatives.

The paperworks involved in the program are not only important to recording accurately the chronology of events in a water supply effort, but also necessary for improving approaches and methodologies currently employed. The value of, and the different kinds of documents attendant to water project implementation shall be discussed in more detail in the topics following.

#### JOINT WORK-PLANNING

The water supply program should be a joint venture by the national agency and the local government unit. The tasks involved should be planned jointly and agreed upon; responsibilities should be clarified and appropriately assigned. Before the start of an implementation year, therefore, representatives of both national and local units should meet in conference and identify the various activities to be accomplished. To be clearly defined also are the goals to be realized, the types and amounts of resources needed, the logical framework involved, and the deadline-dates to be borne in mind.

The first stage of a work-planning conference could be an orientation, not only on the water resource development program, but on the concept and aim of the conference as well. The next stage could be a workshop to identify what activities, why, where, when and how these are to be achieved. The concluding phase could be the solicitation of commitments from both sectors.

#### PROJECT IMPLEMENTATION

##### I. Training.

Before local government units can start to make the first step towards project implementation, their leaders, decision-makers, planners and technicians should be made cognizant of the policies and procedures of the water supply program. This involves training, or the transfer of technology. Local personnel have to be acquainted with the process of identifying target communities, organizing the cooperatives, planning and designing the projects, constructing the facilities, and maintaining the projects. All these involve a series of well-planned, correctly timed training activities.

Under the Barangay Water Program, a province or city participates in six basic training activities, namely:

1. General Orientation. - This is also called initial training, and it provides the local chief executive and the local heads of offices concerned with a working knowledge on the concept, policies and procedures for implementing a water supply program.
2. Water Resource Development Planning. - This course provides technicians of the local development staff with the knowledge for developing the short and medium range water resource plan, and the establishment of a realistic priority system.
3. Feasibility Study Methodology. - This activity provides local development technicians with skills for conducting feasibility studies that reveal the soundness of the projects, and more important, the financial capabilities of target communities.
4. Design and Construction Techniques. - This course provides local government engineers with adequate knowledge on designing low-cost, rural water projects and relevant approaches for instal-

ling the same.

5. Community Organization or Trainers' Training Course. - The activity provides local government disseminators and educators with thorough understanding of waterworks organizations and sufficient skills in order that they may efficiently train and organize prospective recipient communities, and supervise these organizations so that they remain always functional.
6. Waterworks Technicians' Course. - This activity provides the sub-professional level technicians who operate the waterworks repair shop the necessary know-how to assist in the repair and maintenance of water supply projects, and in training community-based maintenance personnel.

Expenses to be incurred in the conduct of these training activities, as well as other similar endeavors, may be shared by the national agency and the local government units. It is also necessary, for these exercises to be productive, that lecturers and resource persons be adequately equipped and prepared, and that they possess the required communication skills.

## II. Formalizing working relationships.

The partnership in the program of the national agency and the local government unit shall be formalized by a memorandum of agreement. This document defines the roles and responsibilities of each party, particularly as regards to pre-conditions, funding, supervision and other aspects in project implementation. This agreement shall remain in force until either party decides to terminate it. The appropriate time for signing

the document could be during or immediately after the general orientation seminar.

The next step after signing the agreement should be the creation of the water resource development task force, the inter-agency coordinating body. The local government unit should now be ready to nominate the needed personnel so that they may be available for training. Sufficient amounts shall be appropriated in the local budget to fund the expenses of personnel who shall participate in the pertinent training exercises.

### III. Pre-planning.

#### 1. Inventory and development planning.

As a long-range program, the water supply effort should be viewed in relation to the total development of the local government unit. This brings to the fore the need for the water resource inventory (WRI) as part of the entire socio-economic profile. The WRI shall be a complete inventory of all the villages or communities within the local government unit. Various entities, both public and non-governmental should be involved in the completion of this inventory.

The WRI is made with a view to utilizing all possible resources for a successful water supply program, and it becomes one of the important planning document in the local government unit. It shall contain all information regarding all villages, pertinent to water supply; for instance: whether or not the community is served by a water facility; if not, the nearest possible water source and its capacity; the water-borne diseases common in the area; if served, the type and condition of the



facility; the size and management system of the project; and the number of people served. In short, the inventory should provide local planners with adequate data for directing an effective water resource development program.

Information provided by the WRI become inputs to the Water Resource Development Plan (WRDP). The accomplishment of the WRI and the 5-Year WRDP shall be taught to local government technicians in the water resource development planning seminar-workshop. Under EWP, the five-year WRDP has been found to be appropriate and workable. This 5-year plan is a listing, by year, of water projects that a local government unit shall implement, based on its capability and the resources available. The "first year" of the 5-year WRDP becomes the current year implementation schedule, and the "second year" in that planning document shall become the implementation schedule for the next year. The WRDP, therefore, shall be updated yearly. In addition, the listing of proposed projects should be in accordance with a priority system that is based on need, which in turn should be suggested by indicators, viz., related to health, economic returns or other social implications.

## 2. Selection and identification.

There should be sound bases for the identification of the target community and the selection of project. One of the most critical criterion would be the willingness of the people in the proposed service area to undergo training and form an association, and later, assume ownership and management of the project. If this condition on willingness is met and the community falls within program criteria, the next

WATER RESOURCE DEVELOPMENT PLAN

TABLE I  
IMPLEMENTATION SCHEDULE

USE OF NUMBERING SYSTEM

Page \_\_\_\_\_

PROJECT No.	PROJECT TITLE/DESCRIPTION	IMPLEMENTING AGENCY	SOURCE OF FUND	IMPLEMENTATION SCHEDULE					LATER
				CY <u>78</u>	CY <u>79</u>	CY <u>80</u>	CY <u>81</u>	CY <u>82</u>	

TOTAL

step should be a determination of the appropriate technology to be used. The choices in the levels of service could be either point-source development, piped water system with public faucets, household connections, or a combination system with household connections and public stand-posts.

The above indicates the need to conduct both feasibility and technical studies of the proposed recipient community. Where there are several choices for project installation, these studies could tell planners and implementors where the probability of success is greater. A training on feasibility study methodology should help local government technicians identify priority indicators. The local government unit should not feel compelled to provide satisfaction of all water needs within its jurisdiction within one or two years. Its program should be phased realistically. The number of projects a local government decides to implement for a given year shall go into the implementation plan. In BWP, the annual implementation plan (AIP) is supported by an appropriate number of feasibility studies. A study indicates the average monthly family income in the community, the estimated cost of the project, the monthly water fee the user-family shall have to pay, and the amount of amortization the community shall pay to the local government unit. These data shall be communicated to the community in a village meeting.

#### IV. Project Planning.

##### 1. Infrastructure design.

The basic requirement for infrastructure design for rural water

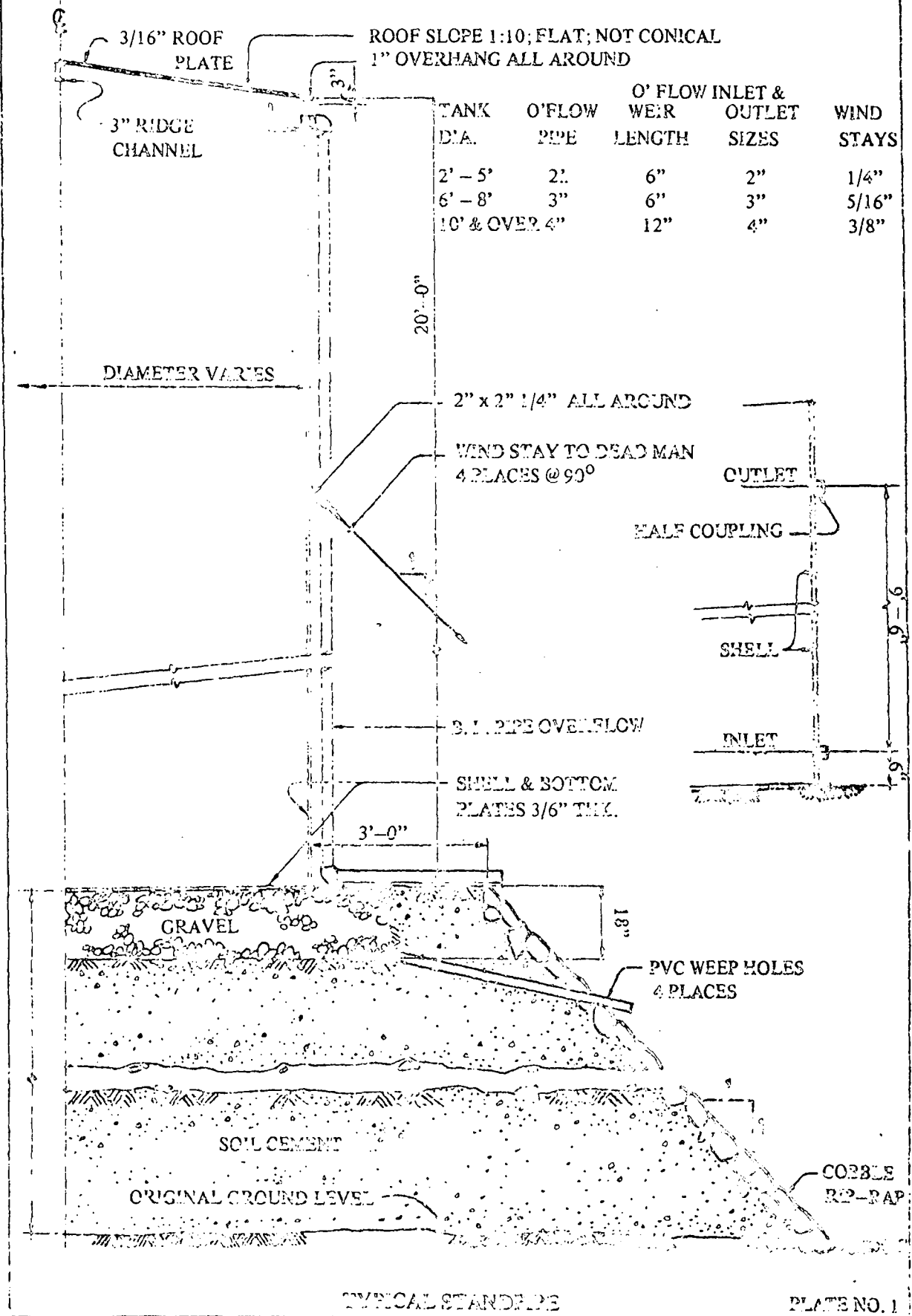
supply projects should be simplicity. Simplicity implies low cost without sacrificing quality or acceptability according to established engineering standards for waterworks. Project design is based on topography or terrain and size of the service area, the capacity of the water source, and per capita demand. The program management staff should develop and establish standards to be adopted uniformly by local government units. The water program should institute as part of the policies these infrastructure standards, for instance, the economic life of the water facility, design periods of the different components of the project, and the per capita need (in gallons or liters).

In the Barangay Water Program, water systems are projected to have economic lives of 20 years. Design period for source development is 10 years; for transmission lines, 5 years; for pumps and motors, 5 years; and storage tanks, present year. The development of standards are made with a view to cutting costs in terms of financial investment in the project, and of the man-hours required for planning and supervising project installation. Under SWP, local government engineers acquire design skills by undergoing water supply design and construction seminar-workshop, and use cost figures based on cost of materials in the locality or delivered to the site.

## 2. Community preparation.

At the same time that plans are being accomplished for a proposed project, the community shall be informed of the planned installation. This entry phase into the community shall be made through the core of leaders, who might either be formal (elective officials) or informal

MINISTRY OF LOCAL GOVERNMENT AND COMMUNITY DEVELOPMENT  
BARANGAY WATER PROGRAM



(elders, professionals, and traditional opinion leaders). Community trainers or organizers, assisted by technicians of the PMS, shall work with the village core group in order to campaign for a more popular acceptance of the proposed water project and the proposed waterworks association/cooperative.

A series of meetings should be held in the target community, the first of which should be for introducing the project and gaining the acceptance of the people. The next assembly, to be led by the core group, shall be to explain to the intended beneficiaries the community's responsibility and the project's advantages. In succeeding meetings, the formation of the association shall be broached; the technical plan of the project and location of standposts shall be discussed; the administrative and management aspects of the project shall be elaborated upon; and the amount of amortization to be assumed by the community organization shall be clarified. The formation of the association or cooperative society, and the required course leading towards the formation, shall already be planned during one of the meetings.

#### V. Organization.

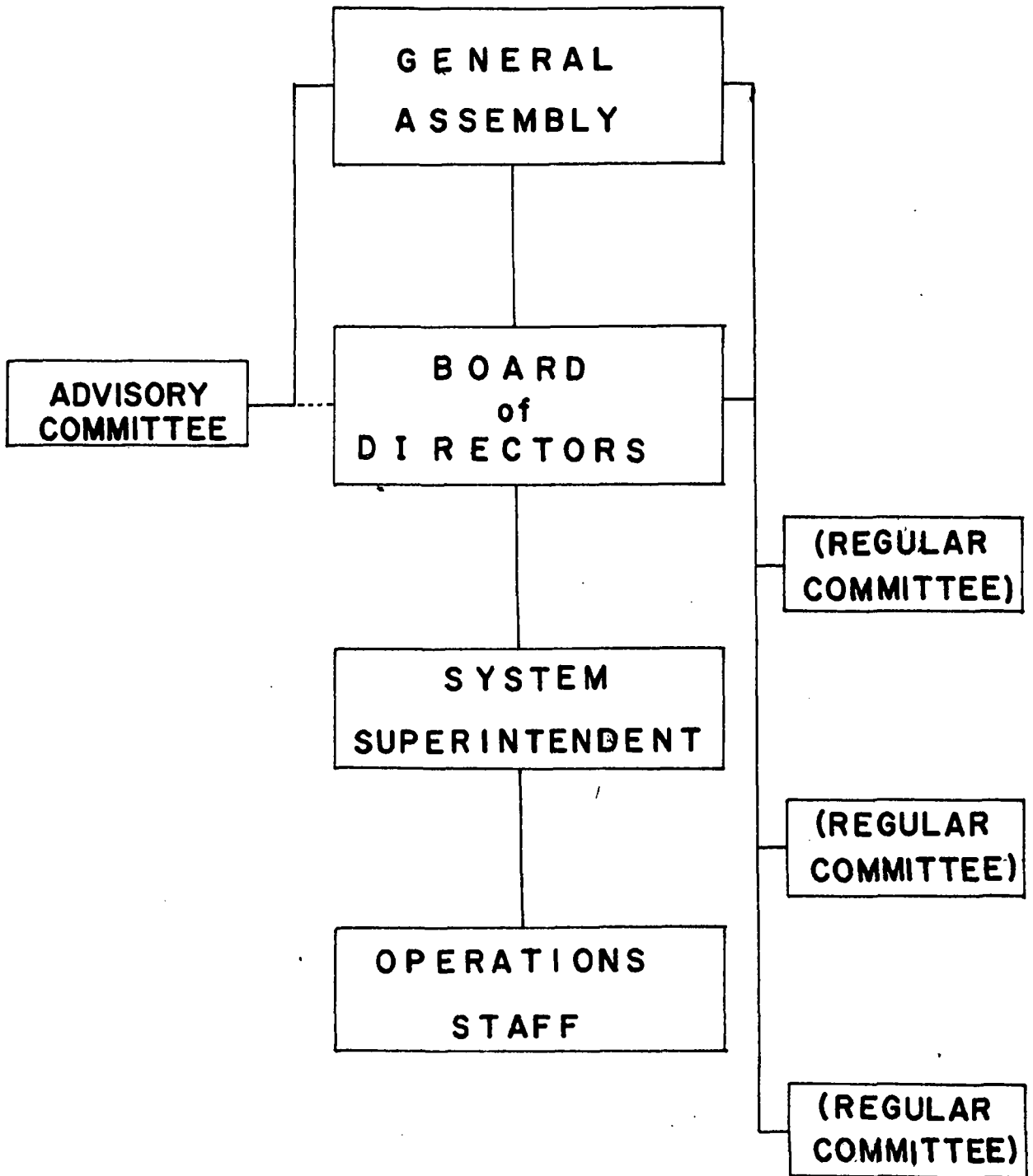
A water project will be perpetuated when the introduction of the physical change is accompanied by a moral change. Laboring under this principle of development, Philippine authorities introduced the formation of cooperative societies in the water resource development sector. The cooperative or association is a forum for exchange of ideas, for formulating decisions, for problem-solving. Another staunch rationale for the cooperative in this program is the rule that who benefits from a

public service facility should maintain, and therefore, own it. The cooperative, therefore, shall be responsible for perpetuating the water project, and this saves the government from having to appropriate annually large amounts for the repair and maintenance of water facilities.

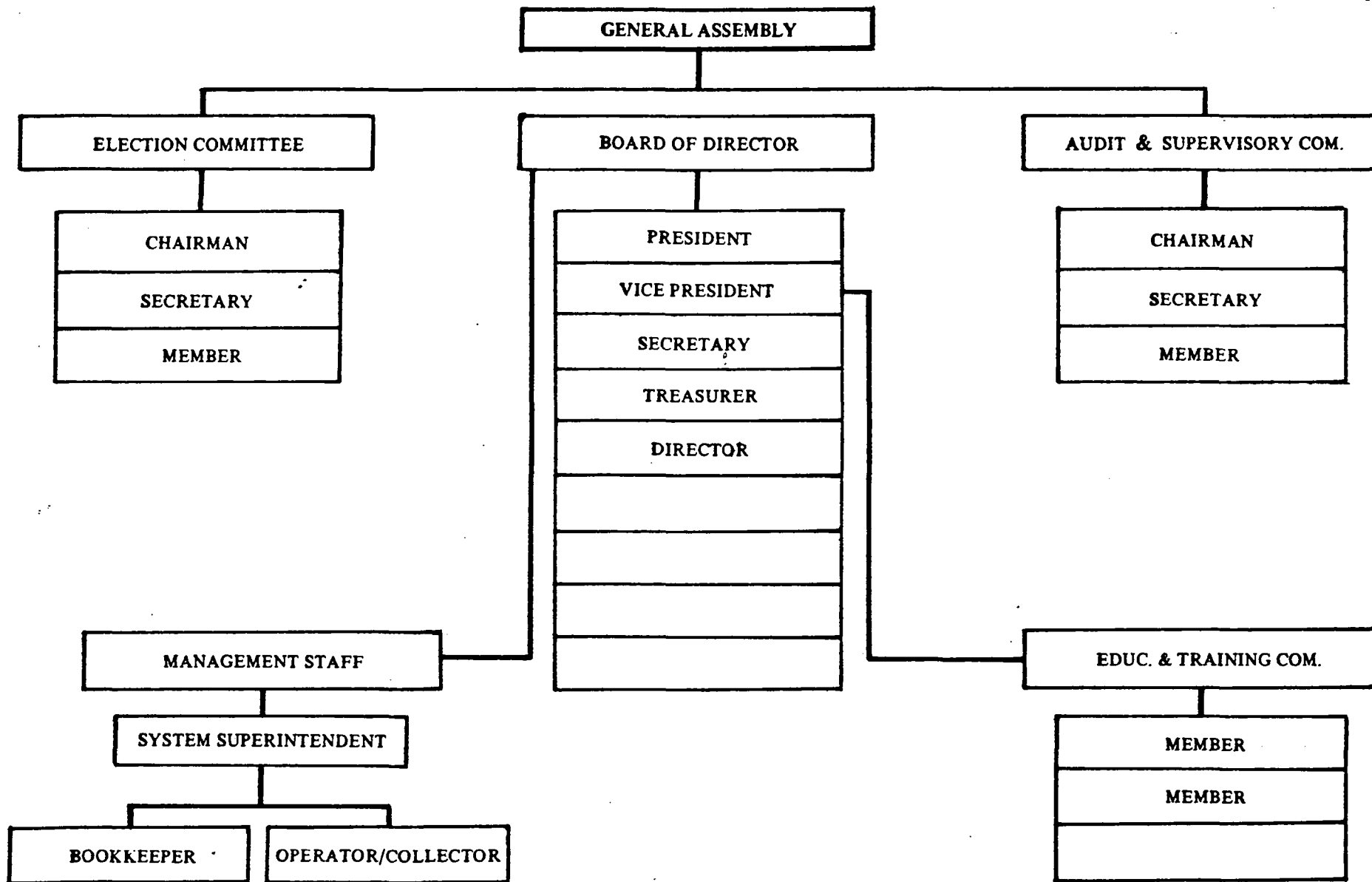
In the training and organization of rural water associations, local government technicians shall be drilled and shall acquire skills by participating in a trainers' training course for this purpose. In BWP, the associations are formed once the AIP has been approved by the PMS. Persons of legal age in the community, particularly family heads, undergo a pre-membership education course before becoming a member of the association. This educational activity is almost an informal affair, but prospective members learn about the philosophies of cooperatives, the mechanics and policies of operating a water facility, the responsibilities and privileges of membership, the election of officers, and other relevant subjects. The election of the board of directors shall be done during the conduct of the pre-membership education course, and this shall be a practical exercise in the residents' political and leadership development. The first meeting of the board shall be held immediately after the training course, establishing, at the same time, the regular committees and the dates of regular board meetings.

Organization of the waterworks association should be done simultaneously with the pre-membership training. Likewise the required documents for registration should be accomplished immediately after the organization. Registration of the community organization should be required, so that once a legal personality, the society shall have the

**ORGANIZATIONAL STRUCTURE**  
**RURAL WATERWORKS COOPERATIVE**







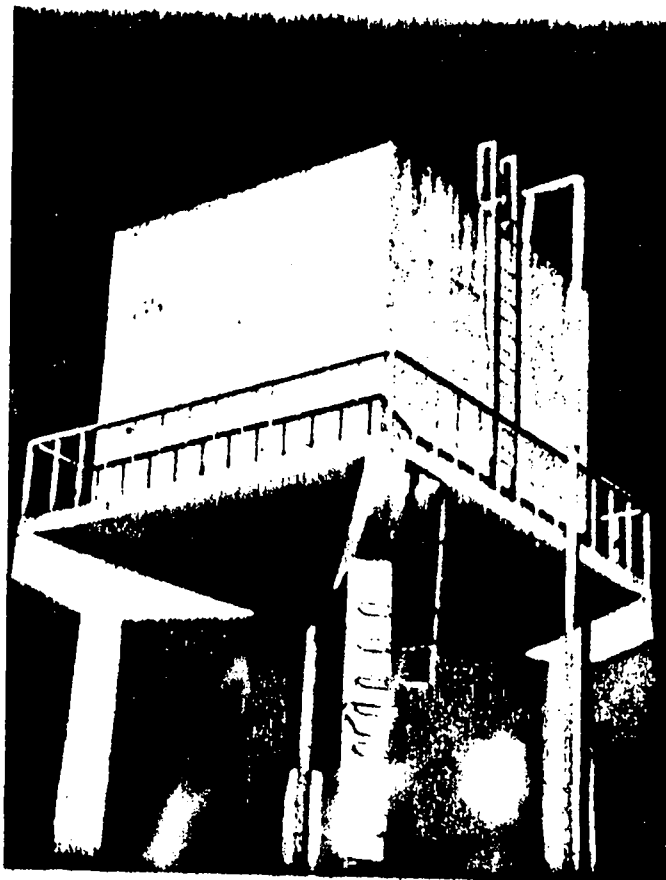
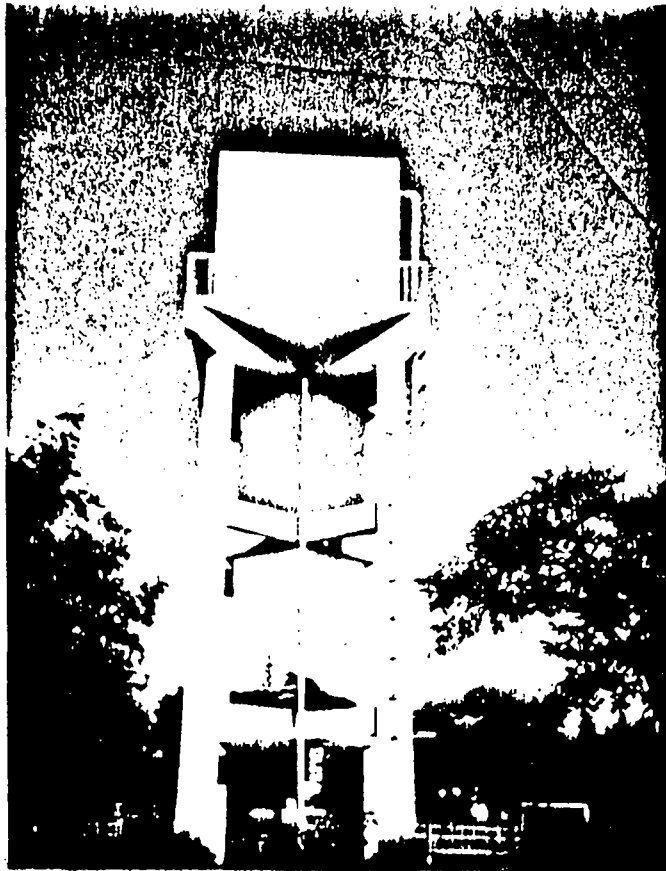
corporate powers with which it may run the water project in a business-like fashion. Although ready to assume administration of the water system after its formal organization, the association should be provided further trainings on management and other skills relative to project operations.

#### VI. Project installation.

Implementation of the water supply project shall be by the local government unit. Construction of the water system shall be the responsibility of the local engineering office, and the works may be done by administration, by contract, or by combination of contract and administration (some components to be done by a contractor, and some to be done by force account). The installation of the project should be an exercise to develop the capability of the local engineering office in the implementation of this type of facilities. The efficiency with which this phase of the program is carried out is, in many cases, dependent upon the kind of inter-office coordination existing in the local government unit. The offices of the Treasurer, the Auditor, the Engineer, and the Development Coordinator inevitably have to be all involved in the pursuit of the project, If one of these office chiefs fails in his responsibilities, or refuses to assume his role in the development effort, success in the water supply activity shall not be achieved.

The usual elements in a piped community water system are: source development; storage; pump and motor; pipes and fittings; and public standposts and water meters. Under BWP, the additional elements are: association office building; office furnitures; and maintenance tools.

TYPICAL BWP CONCRETE STORAGE TANKS



In the Philippines, a number of provinces do all these elements by administration, or wholly by the provincial engineer's office. Usually, however, especially when a local government unit is implementing five or more projects, source development (in the case of well drilling and casing), installation of pump, and erection of storage tanks are done by duly licensed contractors; while the rest of the components are done by administration. Some projects are also installed wholly by a construction company. In any case, none of these manners of project implementation should prejudice quality. The progress of construction shall be monitored by both the local government unit and the national agency.

The involvement of the community is also encouraged, particularly in terms of the labor components of projects. The utilization of local labor should be in accordance with existing labor standards and statutes; the workers should be hired and paid according to law. It should not be made a responsibility of the community to provide labor for free. The community shall take over completely once the project has been completed and turned over to the cooperative. Whether local labor is availed of or not, the water supply program should make no compromise with established engineering and health standards, and with strict adherence to agreed plans and specifications.

#### VII. Project completion.

A water supply project shall be deemed completed when certain conditions agreed upon by both national and local governments have been met.

##### 1. Community trainings.

The waterworks association shall be adequately prepared to efficiently



The STANDPIPE, a steel storage tank resting on a dirt mound; and a typical village water association building/office with 25 sq. m. floor space.

run and maintain the water system. The activities leading to this preparation shall be the responsibility of the local government unit, but the national agency should support this endeavor. In BWP, before project turnover, or about two or three weeks before the completion of the infrastructure facility, a Pre-Operational Training is conducted in the community. This activity aims to provide the officers and leaders of the community organization with basic administrative and management skills; like, simple parliamentary procedures, taking of minutes, resolution and ordinance-making, and records-keeping. The most immediate concern, however, of this training is the discussion and clarification of fiscal management procedures; viz., billing and collection plan and practice to be adopted, the accounting forms and records to be accomplished and maintained, and the manner of accomplishing and maintaining these.

Immediately after acquiring the prerogative of operating their own water system, the association should be strengthened, both in terms of administrative and technical competence. For this purpose, the Post-Completion training is conducted for the management/operations staff of the project. Skills and know-how for organizing and handling this training are provided for the local waterworks technicians in the Waterworks Technicians' Course. With the system manager/superintendent and the association-hired technicians participating in this activity, discussions focus on: proper operations of the facility, care and maintenance of motor and pump, installation of faucet, extension of pipe network, and the manifold practical repair works done in the course of operating a water system. The two community trainings mentioned here and other

undertakings of this sort shall be planned to prepare the community organization for the eventual ownership of the water project.

## 2. Final inspection.

Upon completion of the project the head of the local engineering office shall certify to its completion and request the national agency to conduct final inspection. A final inspection shall be made by representatives of the national agency to ascertain that the water supply project has been completed according to approved plans and specifications and is delivering the required service for which it was designed. If deficiencies in the construction of the facility are found in the course of the inspection, the local government unit shall be given a reasonable period of time in which it can correct them. A succeeding inspection should be made to ascertain that the deficiencies had been corrected and that approved plans and specifications have been adhered to. Final acceptance of the project, by the national agency, shall be conditioned by substantial compliance with agreed upon quality criteria, and no project shall have its direct costs reimbursed which has not been finally accepted by the national agency, under which the project was proposed, approved and implemented.

## 3. Reimbursement of direct cost.

A project that has been finally inspected and accepted shall be eligible for reimbursement. As has been discussed in a previous section of this paper, fixed amount reimbursement refers to "direct costs" items agreed upon by the proposing local government unit and the reviewing national agency, at the time that the plans and estimates of the project

were considered for approval. In BWP, after the project has been accepted, the agency (Ministry of Local Governments and Community Development) prepares a treasury warrant for the amount corresponding to the agreed reimbursable items. Because the capital outlay of BWP, or project construction costs, is supported by a loan from a foreign agency, acknowledgement receipts for treasury warrants covering reimbursements are part of the supporting documents when requesting for fund drawdowns from that foreign loan.

#### 4. Deviations from plans.

When determined to be necessary and unavoidable under the purview and ends of the water supply program, deviations from agreed plans shall be considered. All modifications of the approved work program shall be examined closely, and their extent and costs agreed upon by the local government unit concerned and the national agency before they are put into effect. Final inspection shall likewise be done for projects with altered plans and estimates, based on "as built" plans to be submitted by the local engineering office when its head requests for final inspection. In this case, reimbursement shall be for the agreed amount. Change in plans entailing additional costs (termed under BWP as "Change Order") shall also be considered by the national agency upon proposal by the local government unit. These changes shall be of the nature that have not been foreseen during the planning and designing of the project.

#### VIII. Project Turn-over.

The completed project shall be formally turned over to the water-works association, preferably in a public ceremony witnessed by residents



of the village. The board of directors, represented by its president, shall receive the project in behalf of the organization; administration by the community shall thus commence. The association, upon assumption of responsibilities over the project, automatically shall incur a loan from the local government unit, equivalent to a portion of the project cost indicated by the feasibility study conducted for the project. This "portion" shall range from zero (0) to 100% of the cost of the project, in accordance with the community's capability to pay. The amortization shall be in equal annual installments and shall be for a period of either 5, 10, 15 or 20 years, depending on the choice of the community, and at minimal interest rate. Full equity to the water system shall be earned by paying the amortizations regularly, and the sense of ownership among member-users shall be inculcated by compliance with financial obligations and assessments.

#### IX. Evaluation Teams.

The turn-over of responsibility for the project to the community organization shall not entirely sever the local government unit's obligation to further develop the waterworks association. It shall be in keeping with the program's ultimate goals to build viable communities which shall perpetuate water projects. In aid of this, an evaluation team shall be formed in each local government unit where a water system is already operating. The evaluation team shall be created by an administrative or executive order (or a similar directive) of the head of the local government unit. It shall be composed of the waterworks engineer, water resource analyst, a cooperatives specialist, a health

technician, a community worker, and other personnel who could help strengthen the management competence of the community.

The visits of the evaluation team to a village with a water system, for a whole year, shall be prepared in advance. During the first 6 months of operations of the water project, the frequency of the visits is recommended to be monthly; and for the next year and a half, visits should be quarterly. For the next two years, the frequency of the team's visit may be semi-annually, and the visits may be made less frequent when it is seen that the association could function effectively on its own. The visits shall be supervisory in nature, aimed at developing the community's administrative capacity and maintaining the quality of service of the water system. In accordance with the team's assessment of the operations of the project, it shall apply problem-solving strategies upon aspects of management where the association is found to be weak, and recommend solutions to the pertinent office chiefs and the national agency, if the required actions are beyond their capabilities or authority. After each evaluation visit to a project, the team shall render a report to the chief executive of the local government unit, furnishing copies to heads of offices concerned and the national agency.

#### RECERTIFICATION

After the first or second year, the PMS should look again at the status of the local governments, particularly in the matter of compliance with participation requirements and pre-conditions (discussed in previous sections of this paper). The ultimate objective of the program is to institutionalize the process of implementing water activities in such

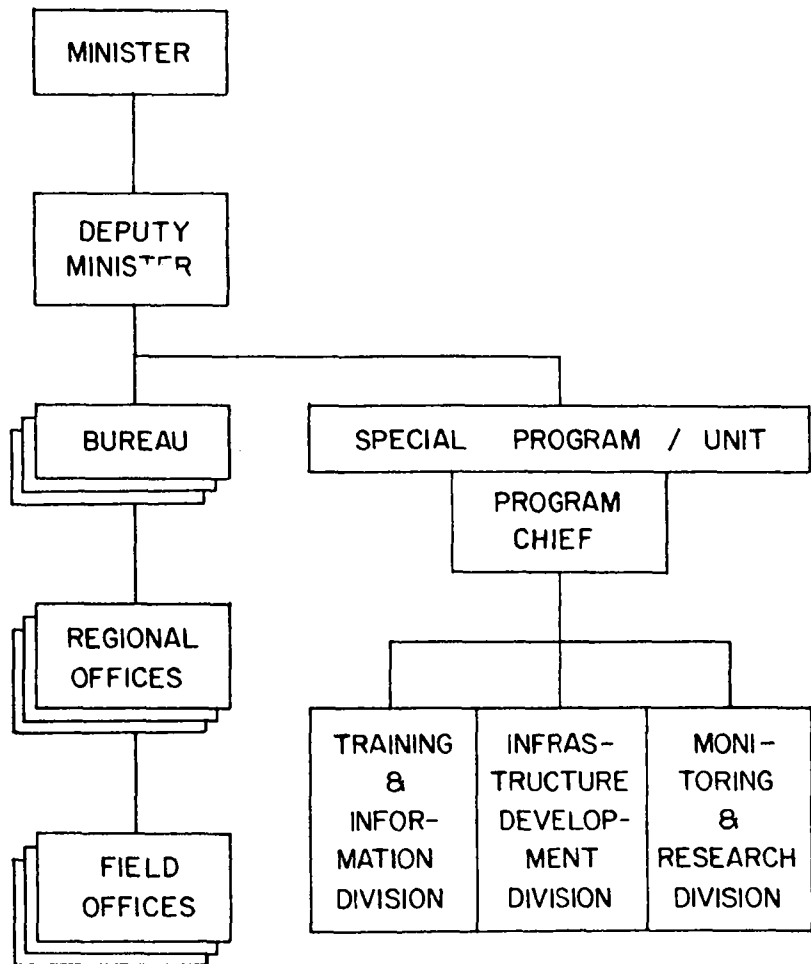
a fashion that they become part of the permanent discipline of the local government units. A test to this proposition shall be the compliance by local governments with the prescribed requirements; and, therefore, a recertification for participation of local government units may reveal areas of weaknesses where the national agency could assist these units. For instance, if the local government unit no longer has the necessary personnel, or the required appropriations in the budget for the succeeding year (as revealed by a recertification evaluation), then it should be suspended from undertaking new activities until the pre-conditions have been completely fulfilled. The recertification-evaluation of local government units shall be done either annually or bi-annually, to insure the institutionalization of the water supply program.

#### PROGRAM MANAGEMENT STAFF

The development and administration of the water supply program shall be the responsibility of a PMS, which should be formed specifically to develop the concept, procedures, and policies of the effort. It shall be located within an appropriate national office or entity that shall provide it the necessary logistics and administrative support. The PMS may be a new unit created in the national entity or an existing group formed into a unit for the required purpose.

If it shall be a new unit, it should be composed of skilled technicians and specialists recruited for the implementation of the program; and if it shall be from an existing group, the members should be adequately trained so that the level of their skills and expertise is com-

ORGANIZATIONAL CHART  
OF A SPECIAL UNIT (NATIONAL AGENCY)  
FOR A WATER SUPPLY PROGRAM



patible with the demands of the program. The functions of the PMS shall be concerned with three crucial areas, namely: training and information, infrastructure development, and monitoring and research. The management staff, operating at the national level, shall develop the operating procedures for water supply (and consequently continue to improve the same), and the prescribed curricula for training. It shall train local governments, work with them, and supervise them; it shall also conduct studies, researches, and evaluations with a view to further strengthen the water supply program. In effect, the PMS shall be working itself to extinction; because when the local government units become viable enough to implement the program with autonomy, there shall no longer be a need for the project development agency.

#### PROGRAM EVALUATION

The water resource development effort shall have provisions for evaluation after a given period, or assessment after every phase of the program. The evaluation approach should be twofold: an examination of the national effort, and an examination of some selected village projects. (Evaluation may be directed by the national authority, by a foreign lending institution, or launched by the PMS.) The first type should be problem-solving in orientation, aimed at discovering weaknesses and means of further reinforcing program approaches and methodologies. The second type examines the actions taken by the local government unit, as the implementor, in pursuing their own program: from identification of project to turn-over of responsibility to the association. The latter kind should indicate phases where the implementor requires the greater

amount of assistance. A third type of evaluation could be undertaken, which shall focus on the impact of the project upon the socio-economic life of the village.

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