

Chapter

9

**SECTOR MANAGEMENT FOR
MEDIUM-TERM DEVELOPMENT**

9. SECTOR MANAGEMENT FOR MEDIUM-TERM DEVELOPMENT

9.1 General

In order to manage the water and sanitation sector effectively, the provincial and municipal governments will have to make some adjustments in their current structures and policies. This Chapter proposes the mechanisms, processes and structures needed in the medium-term to achieve the coverage targets with sustainability. Not all recommendations can be laid out with the same level of detail at this time as some are dependent on further policy guidelines being formulated at the national level. These include the on-going study on access of LGUs to external financing assistance and the sector devolution process.

9.2 Sector Management

(1) Development of the vision

One glaring institutional need at the local level is a common vision and mission statement for the sector. A critical mass of people and resources that share in the vision must be identified and harnessed for project implementation. Local planners need to focus on the long-term requirements i.e., beyond forming users' associations, drilling wells, distributing bowls, etc. Based on a realistic assessment of constraints, opportunities and demand, the province has set its vision and mission for the sector.

Initial vision statement: The province will adopt a two-phased plan, which seeks to dramatically improve the provision of water supply and sanitation. In the medium-term (1999-2003) plan, the province seeks to increase water supply coverage in urban areas to 65% and in rural areas to 58%. On the other hand, household toilets will be made available to 85% of the urban population and 75% of the rural population; 80% of the students in public schools will have adequate sanitary toilet facilities; 100% of public utilities will have sanitary toilets; and 90% of the urban population will be covered by solid waste collection services. For its long-term (2004-2010) plan, the province will pursue a more vigorous program to increase water supply coverage in urban areas to 95% and in rural areas to 93%. For the sanitation sub-sector, individual household toilets will increase up to 93% in both urban and rural areas; public school toilets will rise up to 90%; public utilities will have 100% sanitary toilet coverage; while sewerage service will cover 50% of the urban population.

(2) Sector management

A Sector Management Model is presented in Figure 9.2.1 for sector management and project development. It is envisaged that this PW4SP will be used as a basis for the Annual Sector Plan and/or as an input into Loan or Grant Negotiations in the future. The Annual Sector Plan, together with the budgets, will be reviewed by the Governor and passed upon by the legislation as part of the annual provincial budget approval process.

The sector level implementation activities consist principally of three broad areas: social marketing; technical assistance; and monitoring. Project selection follows on from a self-selection process. The identification of a responsible community-based association and technical studies, as needed, will be done. Construction or rehabilitation will take place only after the institutional, financial and technical studies have been done. Operation and maintenance, including arrangements for finances of the system, will be the responsibility of the community organization. The Monitoring Function, on the other hand, will be augmented with water quality surveillance by the Provincial Health Office (PHO) and operational audits done by the LGU.

(3) Service provision policies and objectives

The LGU seeks to provide an adequate level of water and sanitation facilities defined as follows:

- Level I facilities serve at most 15 (fifteen) households per source; Level II public taps serve 5 (five) households per faucet; and Level III systems provide individual household connections.
- Water supply provision will be at least 20 lpcd for Level I; 60 lpcd for Level II; and 100 lpcd for Level III.
- A critical mass of 90% of the individual households in every barangay has sanitary toilet facilities.
- All schools shall have adequate water supply and at least one sanitary toilet facility for every 40 students.

(4) Operating policies

The Provincial Government adopts the following policy and strategy statements. These may be reviewed and revised from time to time by the Provincial Government. The key policy statements include the following:

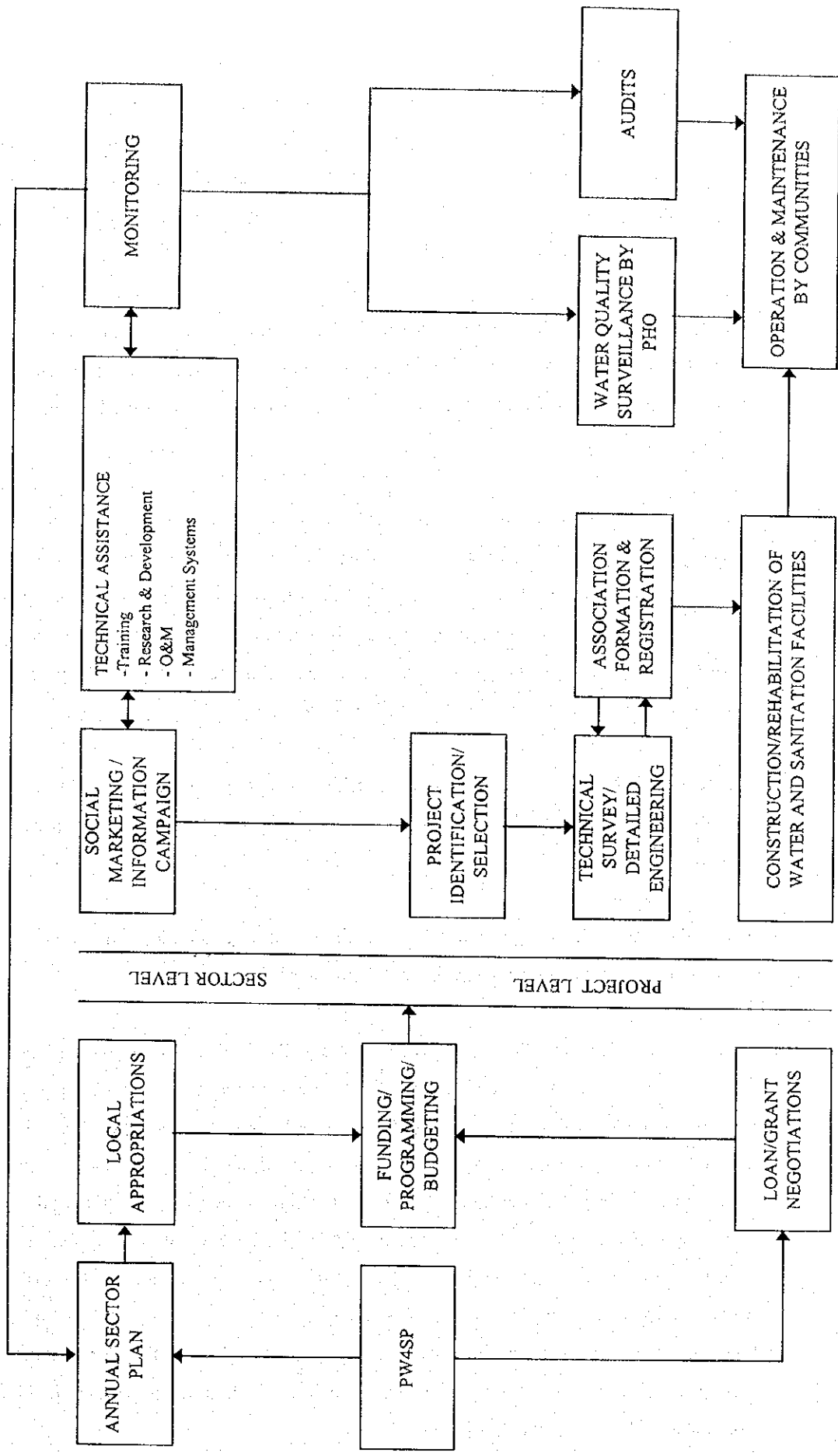


Figure 9.2.1 Sector Management Model

- 1) Sustainability shall be promoted through increased community responsibility for the management of facilities. Unless potential users demonstrate initiative and commitment (beyond making the request for assistance) to maintain the systems, no support shall be provided by the LGUs. To the extent possible, the LGUs should utilize existing local resources (self-reliance).
- 2) Selection and prioritization of projects shall be based on demonstrated commitment of the beneficiaries to participate in the project and their willingness to pay; the current water, sanitation and overall health conditions; potentials for growth; and cost implications.
- 3) Technology to be used for the projects shall be appropriate to the local conditions and resources. However, construction of economical facilities shall be pursued not necessarily insisting on low-cost. Phased upward integration and future upgrading of systems and facilities shall also be promoted utilizing to the extent possible previously constructed facilities. In urban centers, a range of technologies may be adopted for wastewater collection and treatment, as well as for drainage.
- 4) An integrated approach to the provision of potable water supply, sanitation and hygiene education shall be promoted. All projects to be developed by the LGU must involve these three elements.
- 5) The LGU shall seek to provide water and sanitation in an equitable manner between rural and urban areas; between wealthy and depressed areas.
- 6) Cost Recovery and Cost Sharing (Subsidy Policies): The LGU shall enforce a rational and consistent policy on the application of subsidies and loans for water supply and sanitation. In May 1996, the Investment Coordination Committee (ICC) of the NEDA adopted a policy "to support the financing of devolved activities with social and/or environmental objectives" based on three considerations namely: Equity, Externalities and Economies of Scale. Accordingly, NEDA advised DILG of the revised cost-sharing arrangement which clearly limited the national government subsidy to Level I water supply systems for 5th and 6th class municipalities up to a maximum 50% of the total project cost. No subsidy from GOP is provided for Level II and III. For sanitation facilities, the national government subsidy for the 3rd to 6th class municipalities shall be from 50% to 70% of the total project cost.

7) Private Sector Participation: The government shall give the private sector a substantial and preferential role in the attainment of the PW4SP objectives. In harnessing their participation, less government intervention shall be exercised in areas where the private sector is or can be a key player. An environment designed to empower them to absorb new social responsibilities and proactively convey to the government their aspirations and interests shall be established. The formation of private sector groups, NGOs, community organizations, cooperatives and people's organizations shall be encouraged. The implementation of programs to develop their capabilities in the sector development programs shall be promoted.

8) The province's fiscal management, in terms of capital funds generation capability, budget and disbursement, shall be improved. The assistance of the legislative branch in the enactment of the proposed revenue-generating measures shall be sought. Financing through the private sector will also be encouraged.

9) Sector development shall be consistent with broader concerns for environmental protection and management. Pollution control, conservation and proper utilization of water and land resources are critical issues. An environmentally responsive management approach to resource use shall be pursued.

10) Disaster Response and Emergency Coordination: The LGU shall formulate, as part of its contingency plans, a program to address emergency conditions. The program shall include maintenance of stocks of chlorine, organization and training of local communities on restoration of water supplies and provision of emergency sanitary facilities. The LGU should coordinate closely and regularly with the local officials of the Regional Disaster Coordinating Council (RDCC).

(5) Regulatory policies

In coordination with appropriate national and local agencies, the LGU shall endeavor to set up an effective regulatory framework considering the following:

1) Water allocation and water rights policies (conflict resolution) which are within the mandate of the National Water Resources Board. The LGUs or the concerned water utility shall apply for water rights from the Board, prior to implementing a project that would require extraction of water.

- 2) Water Rate Review: While the rate setting and approval functions remain largely as a concern of the associations or the Water Districts (and LWUA), a vehicle for resolving grievances against unrealistic tariffs (or other practices) can be instituted by the LGUs. The court system, of course, remains as the final arbiter in conflicts.
- 3) Association Registration: The LGUs shall likewise adopt a registration and franchising system for associations responsible for water supply facilities outside the WD franchise areas. Annual reporting requirements will have to be established for monitoring and possibly, auditing purposes.
- 4) Water Quality: The National Drinking Water Standards have been established. The LGUs will have to establish a viable mechanism, including water testing and standards enforcement, to ensure that water delivered meets the potability standards. The DOH currently has the responsibility and the regulatory power to stop the operations of water systems not delivering potable water.

(6) Financing system

In financing water supply investments, the LGUs may tap their Internal Revenue Allotment and/or locally generated revenues, or leverage these resources to borrow from government and private financial institutions. Overall, it is the LGU's responsibility to raise funds to support capital development sector projects and to ensure that adequate O&M reserves are raised by the beneficiary communities.

In the medium-term, the primary sources of funds are envisaged to be provincial & local taxes, allocation from the IRA 20% Development Fund and Municipal Development Fund. Also, in the medium-term, it is envisaged that national & external funds will, although diminishing, continue to be channeled through local offices of central agencies.

Studies are underway to look into the feasibility of direct access of LGUs to external funds. The LGU will continue to monitor the developments and policy decisions to be established as these will invariably affect local financing mechanisms.

To support sanitation activities, housing improvement loans for installing in-house sanitary facilities should be studied and instituted by the LGU. Such a mechanism can be organized with the rural banks or the existing credit cooperatives. Seed funding for this revolving fund also needs to be raised. Upon agreement by the parties, the enabling local legislation establishing the sanitation revolving fund will have to be enacted.

9.3 Institutional Arrangements

This section of the report discusses both existing and proposed roles and responsibilities of agencies involved in WATSAN sector projects. Agencies that are presently involved include national government offices precisely because the devolution of functions related to WATSAN activities is not yet complete. As the province's capability to implement WATSAN projects is enhanced in the medium term, there will be a need for a unit that will coordinate WATSAN project implementation activities between and among national and local office. This coordinating body is the proposed PWSU.

9.3.1 Roles and Responsibilities of Agencies Concerned

In the implementation of WATSAN sector projects, respective governmental agencies from national to barangay levels shall play their roles as described below.

(1) National government agencies

1) Department of the Interior and Local Government

The DILG, through its Water Supply and Sanitation Program Management Office (WSS-PMO) shall coordinate with the funding agency, LGUs and other national government agencies involved in the project implementation. It shall be responsible to:

- a) develop the capacity of PWSU (Provincial Water Supply and Sanitation Unit) and MSLT (Municipal Sector Liaison Team) members in planning, training and organizing, WATSAN technologies, health and hygiene education, gender responsiveness, implementing, monitoring and evaluation of water and sanitation projects. The formation and tasks of PWSU and MSLT are discussed in the following section (9.3.2).
- b) provide staff and administrative support for the project. A Coordinator in each province shall be assigned to ensure project coordination at the provincial level. Its field personnel at the regional, provincial and municipal offices shall be utilized to assist in the capability building programs for LGUs. Monitoring of WATSAN projects shall be integrated in their regular functions.
- c) execute a Memorandum of Agreement (MOA) with the concerned LGUs. MOA shall include cost sharing arrangements with concerned province and municipality, utilization of vehicle and equipment support and possible allocation of LGU's amount out of their internal revenue allotment for the operation, repair and maintenance in the future.

- d) select NGOs to assist its capability building and community management programs for the LGUs and project beneficiaries to improve the delivery of project services and ensure sustainability.
- e) conduct orientation and information dissemination for the provincial officials on the project including requirements and strategies to obtain their support and commitment in pursuing the project;
- f) coordinate and utilize the technologies of DPWH and DOH including equipment and existing facilities; and
- g) procure vehicle, well rehabilitation equipment, maintenance tools, and water quality testing kits by means of bulk contract.

The other national government support agencies concerned and their respective functions in the project are:

2) Department of Public Works and Highways

The DPWH shall be responsible to:

- a) set and/or update, as and when necessary, technical standards for engineering surveys, design, construction, operation and maintenance of water supply system.
- b) upon agreement with the LGUs, assist in the conduct of engineering surveys and in the preparation of plans, specifications and programs of work, through its District Offices.
- c) upon agreement with the LGUs, assist in construction management, through its District Offices.
- d) conduct technical researches in coordination with the LGUs

3) Department of Health

The DOH shall be responsible to:

- a) set and/or update, as and when necessary, standards on water quality testing, treatment and surveillance, and sanitary practice.
- b) provide technical assistance to the LGUs in the conduct of periodic water quality control (once in every three months as stipulated in the Philippine National Standards for Drinking Water) and surveillance-related activities.
- c) monitor and evaluate, on a regular basis, health and hygiene education programs implemented by local health officers, particularly in areas where waterworks systems are expected to be constructed.

4) National Water Resource Board

The NWRB shall be responsible to:

- a) regulate the use of water resources through the issuance of water rights (for the Level I water supply projects, water right permit shall be confirmed upon the site selection is completed);
- b) establish and manage a user-friendly water resources data management system.

(2) Province

The province, through its PWSU that is to be newly organized, shall handle all activities related to the development of the sector in the province. The PWSU shall engage the services of private contractors, and undertake construction supervision and administrative arrangements of the projects with the assistance from DILG and Consultants.

The PWSU shall be composed of staff representatives from PPDO, PEO and PHO. The role and responsibility of each member as well as the joint tasks to be undertaken among them shall be clearly defined. The PPDC shall act as a head of the unit and decides on WATSAN project issues and problems arising therein. The Team member shall work hand in hand with the CO/NGO supervisor who shall be primarily responsible for the coordination of project activities at the municipal level. A focal person shall be designated from the PWSU members, preferable from PPDO, to serve as understudy of the CO/NGO to ensure social technology transfer before the phase out of the NGO intermediary. The PWSU, together with the Municipal Sector Liaison Team (MSLT) shall be primarily responsible to:

- a) annually update the PW4SP;
- b) prepare the program of work and implementation schedule;
- c) conduct information dissemination and consultation with the municipal and barangay officials;
- d) select and prioritize project sites using the selection criteria developed for the project;
- e) assist in organizing BWSAs for Level I water supply and skills training for the BOD/officers, bookkeeper and caretakers of the operating body on operation, repair and maintenance;
- f) periodically apprise the Governor of the project developments;
- g) manage and monitor the utilization of vehicle and equipment procured under the project;

- h) monitor, evaluate and prepare reports on the progress of project implementation for submission to WSS-PMO in case of ODA assisted projects; and
- i) provide continuing technical and institutional assistance to the MSLT and project beneficiaries.

(3) Municipality

Each municipality shall create a Municipal Sector Liaison Team (MSLT) from MPDO, MEO and MHO. The role and responsibility of each member as well as the joint tasks to be undertaken among them shall be clearly defined. A focal person shall be designated among them, preferable from MPDO, to serve as understudy of the CO/NGO to ensure social technology transfer before the phase out of CO/NGO intermediary. The MSLT shall work hand-in-hand with the CO/NGO and with the PWSU support. It shall be responsible to:

- a) select the priority sites/barangays in close coordination with the municipal development council;
- b) conduct consultation meetings with the barangay officials/development councils and community members;
- c) facilitate the barangay water and sanitation survey and spot map, and prepare the survey summary report and spot map;
- d) organize BWSAs for Level I water supply, if necessary, and conduct skills training for the BOD/officers, bookkeeper caretakers of the operating body on operation, repair and maintenance;
- e) assist the operating body in the establishment of proper systems and procedures for the collection of water charges, sanction for delay and non-payment, opening and operating bank accounts and budget allocation for the operation, repair and maintenance and cost recovery of the facilities;
- f) through its MHO/RHU and its network of barangay health workers and volunteers, conduct information campaign on proper health and hygiene education in the community;
- g) periodically apprise the Mayor of the project development;
- h) manage and monitor the maintenance tools and water quality testing kits procured under the project;
- i) monitor and prepare report on the status of project implementation for submission to the PWSU; and
- j) provide continuing technical and institutional assistance to the project beneficiaries.

(4) Barangay

The barangay acts as a basic unit for the development. Barangay officials and development councils serve as the entry point for all development activities in the community.

The barangay officials will play an important role in planning and implementation of WATSAN projects. They shall collaborate with the PWSU/MSLT in gathering data /information and in undertaking various activities in the barangay such as in conducting survey and spot mapping by men and women volunteers, general assembly meetings and mobilization of resources in the community. The barangay officials/development council shall serve as advisor/facilitator of the operating body and community members.

Upon completion of the Level I water supply project, the facilities shall be turned-over to the operation body. A certificate of acceptance serves as a document of ownership of the beneficiaries and acceptance of their responsibility in the project. Upon decision of the community members, existing people's/community based organization, otherwise, a new water association (BWSA) shall be formed as an operating body.

The operating body shall own the project and shall undertake the responsibility for the operation, repair, maintenance and cost recovery of the facilities. Specifically, it shall be responsible to:

- a) regularly collect contributions from member-users for the operation, repair, maintenance and cost recovery of the facilities;
- b) maintain proper and updated financial records and transactions of funds;
- c) undertake minor repair of the facilities for Level I and II water supply facilities and in case of major repair, request assistance from the MSLT/PWSU members;
- d) encourage members to attend meetings and training activities mainly for Level I water supply;
- e) implement policies and procedures approved by the BOD/officers; and
- f) encourage members to observe proper health and sanitation practices.

The duties and responsibilities of member-users include the following:

- a) pay monthly water charge contribution to the operating body;
- b) attend meetings and training activities designed for members;
- c) observe rules and regulations and policies approved by the BOD/officers;
- d) remind other water users to use the facility properly, especially for Level I and II water supply;

- e) keep the premises of the water facility clean, sanitary and free from excess water which may cause contamination of the water source; and
- f) adopt proper health and sanitation practices.

9.3.2 Institutional Arrangements

In the medium-term, it is recommended that a full-time Provincial Water Supply and Sanitation Unit (PWSU) be set up possibly under the PPDO. The main functions of the PWSU will be:

- to coordinate the planning and implementation activities related to the PW4SP, among the concerned national, provincial and municipal agencies; and
- to continue to implement, assist and monitor all water supply and sanitation services in the province in coordination with the municipalities.

Over the long-term, the PWSU may be elevated to the same level as the PPDO to underscore the importance of the WATSAN sector in the development of the province, although modification of the LGC may be necessary.

The South Cotabato provincial government has limited WATSAN project implementation capabilities among its offices (PPDO, PEO, PHO, etc.). It will be the principal task of the proposed PWSU to coordinate and harness whatever WATSAN project implementation capabilities are available at the national and local offices for future large projects such as the PW4SP and other ODA- and locally funded initiatives.

During the formation years of the proposed PWSU, the provincial government should ensure that the unit will be provided adequate logistical and financial support. The DILG – PMO should also continue providing technical and managerial assistance to the unit. Upon agreement with the LGU concerned, the DPWH – DEO should also continue to lend its water supply facility development capability with the province.

The initial professional-level staffing of the proposed PWSU will be as follows:

| | |
|--|---|
| Provincial Water Supply & Sanitation Coordinator | 1 |
| Assistant Provincial Water Supply & Sanitation Coordinator | 1 |
| Community Development & Training Specialist | 2 |
| Water Supply & Sanitation Engineer | 2 |
| Monitoring Specialist | 1 |
| Total Personnel Required | 7 |

The Governor will make the appointment based on the short list. The draft Terms of Reference for the various posts is proposed as follows:

(1) The Provincial Water Supply & Sanitation Coordinator (PWSC) will lead an interdisciplinary PWSU Team. The PWSC will ensure timely preparation, implementation and reporting of sector and project progress based on the annual sector plan. For day to day operations, the PWSC will report to the Governor. The PWSC will also liaise with all project implementors at the municipal level. The PWSC shall be the key contact person of the DILG-PMO. Specific duties include:

- 1) Prepare guidelines, work plans and schedules for project implementation work at the municipal level; coordinate the work of consultants and NGOs in their various tasks.
- 2) Prepare a detailed work plan and program of activities for project implementation at the provincial level (including technical, financial and organizational aspects) and ensure regular reports on the progress of activities.
- 3) Guide the conduct of sector and project management and the supervision, and coordination of the PWSU; ensure the quality and timeliness of the outputs of the other agencies and consultants.
- 4) Assess all future inputs required for project planning, design, supervision of construction and monitoring in subsequent phases of project implementation.
- 5) Take steps to ensure that adequate financing is available to support the sector capital development requirements.
- 6) Assist in the negotiations for external grants and loans.
- 7) Recommend policy and policy revisions to govern sector and project management activities.

(2) An Assistant Provincial Water Supply and Sanitation Coordinator will likewise be appointed to assist the PWSC in discharge of his/her duties and responsibilities of the PWSU.

(3) The Community Development and Training Specialist (CDTS) will be particularly responsible for implementing the community development and involvement aspects of the project. His/her task will include frequent contact with the municipal liaison staff and barangays to ensure that all project activities are demand-driven and sustainable. The CDTS will report to the PWSC. Specific duties include:

- 1) Identify initial areas and develop implementation arrangements for launching the project in the various municipalities.
- 2) Conduct regular dialogue and disseminate information among local leaders on water, sanitation and health issues.

- 3) Assist municipalities in overseeing the organization (or accreditation) of associations which will be responsible for water supply and sanitation facilities.
 - 4) Coordinate the health and hygiene education program province-wide.
 - 5) Review past training programs for water supply and sanitation, hygiene and sanitation education, and community organization and development, including any manuals or other training materials used.
 - 6) Guide municipal liaison staff in developing/adapting a community training strategy and methodologies based on the principles of participation, adult education, experiential learning and task specific activities, including the review and development of training materials.
 - 7) Prepare the overall provincial training plan enhancing management skills, institutional strengthening, improving technical skills, and community promotion, awareness and development. This should include: training methodologies; types and numbers of training events for staff and communities; training of trainers; training packages, manuals and audio visuals; management aspects of training program; and staff requirements and cost estimates for all categories of training including equipment and materials.
 - 8) Assist municipal staff in identifying and selecting target communities and sites based on agreed upon criteria; develop methodologies and coordinate preliminary village surveys and gender analysis.
 - 9) Assist in coordinating activities of the municipal liaison.
- (4) The Water Supply and Sanitation Engineer (WSSE) will be responsible for all the technical aspects of the project including feasibility studies, design, construction, operation and maintenance. The WSSE will report to the PWSC. Specific duties include:
- 1) Review the existing technical and environmental situation relating to water supply and sanitation facilities and assess the needs for new facilities and rehabilitation.
 - 2) Prepare and update criteria and process for the selection of water supply and sanitation facilities appropriate to the conditions prevailing in the project areas focusing on systems that can be operated and maintained by the community.
 - 3) Review design standards for water supply and for on-site sanitation (human excreta disposal) facilities for individual households, communal and school latrines.
 - 4) Establish appropriate design standards and technical specifications for water and sanitation materials and equipment applicable to systems proposed in the project. Establish quality control mechanisms for the procurement of materials and equipment as appropriate.

- 5) Prepare standard contract documents, specifications and cost estimates for civil works and procurement.
 - 6) Ensure proper construction supervision and monitoring in coordination with the municipal liaison. Ensure timely transport of LGU-provided materials to project sites.
 - 7) Provide for adequate maintenance of LGUs equipment and tools for water and sanitation facilities, including drilling rigs and vehicles.
 - 8) Supervise major repair or rehabilitation work beyond the capacity of communities to undertake.
 - 9) Implement, in coordination with the PHO, the water quality surveillance system. Assist the PHO in enforcing sanctions or remedial measures in controlling drinking water quality.
- (5) The Monitoring Specialist (MS) will be responsible for ensuring that the status of sector projects and outputs are properly reported and fed back to management. His/her task will include frequent contact with the municipalities to ensure that all project activities are demand-driven and sustainable. The MS will report to the PWSC and liaise closely with the PPDO who has the responsibility for monitoring all development activities and needs in the province. Specific duties include:
- 1) Draft all project reports and documents including the quarterly and annual Sector Report.
 - 2) Maintain the Registry of associations responsible for water and sanitation in their respective communities.
 - 3) Coordinate and develop indicators for monitoring and evaluating the achievement of project objectives.
 - 4) Monitor actual costs for typical water supply and sanitation systems.
- (6) At the municipal level, a Municipal Sector Liaison (MSL) will be appointed by the respective mayors. Staff appointed may be the municipal development coordinator, the municipal engineer, the municipal health officer or any other qualified staff selected by the mayor. The role of the MSL will be very critical at all stages of sector and project management. The MSL should ensure that the activities guided by PWSU are implemented at the barangay level, particularly information dissemination about funding opportunities. The MSL receives all requests for water and sanitation facilities including the commitment of the barangays to provide counterpart funds or labor for the projects. The MSL also programs the municipal funds (from municipal IRA allocation or other sources) to provide counterpart support or to fully finance the projects.

Supported by the PWSU, the MSL ensures that a viable organization is set up or appointed to handle the operation, maintenance and fee collection for the water system. The MSL also reviews the detailed project plan and design. During implementation, the MSL monitors the construction and drilling activities. The activities of the MSL will be closely coordinated and reported to the PWSU. If warranted, the mayor should establish a municipal water and sanitation office in the long-term future to handle all the above functions when the level of activities shall have become substantial.

- (7) At the barangay level, the Barangay Council (BC), through its Committee on Health, and the Rural Health Unit (RHU) plays a major role in concretizing the community aspiration for improved water and sanitation services.

The BC is the entry point for all development activities in the community. Particularly, it will play an important role in preparatory stage before setting up the association (or appointment of the responsible group). The BC prepares the request for assistance and assembles available local resources (funds, manpower, materials) to serve as initial community counterpart to demonstrate barangay commitment.

The RHUs and their network of barangay health workers (volunteers), on the other hand, have established an effective primary health care delivery system in the province. The system will continue to provide, among others, health and hygiene education services focusing on the interdependence of safe water supplies and sanitary toilet facilities to achieve overall health and environmental benefits. The RHUs will be the principal data collectors to monitor the conditions in access and coverage of water supply and sanitation services.

- (8) At the national level, DPWH, DOH and DILG will continue to provide technical assistance to LGUs per NEDA Resolution No. 4, either directly or through their local field offices. In addition, mandated government agencies, such as LWUA, will continue to provide technical and managerial services and loans to duly-organized water districts and RWSAs. Through the DOF and DBM, the IRA allocations will continue to be provided, from which a portion can be allocated for sector projects. Since this IRA allocation for water and sanitation projects will likely be very limited, the LGU will have to coordinate with appropriate national agencies to gain access to external funds. Regulations, promulgated and enforced by national regulatory bodies, like the NWRB, will have to be complied with by the LGU.

9.4 Project Management Arrangements

In implementing specific WATSAN projects, there are several approaches / strategies which are recommended that will increase the likelihood for success and sustainability over the long term. These general approaches/strategies should be treated as minimum project requirements, which can be enhanced or improved upon to further ensure the project's success and sustainability.

9.4.1 Project Approach/Strategy

(1) Capacity Enhancement

- a) Creation of support structure at the provincial and municipal levels (PWSU and MSLT, respectively) with clearly delineated roles and responsibilities of each member as well as the joint tasks to be undertaken by them.
- b) Improving information dissemination to and consultation with local officials at the provincial, municipal, and barangay levels to secure full support and cooperation in the execution of the project.
- c) Tapping NGO intermediaries to assist in the capability building and community management programs for the LGUs and project beneficiaries.
- d) Capability building shall be undertaken at various levels, from the national to the beneficiary levels. A Consultant shall develop the capacity of the WSS-PMO and NGOs, who in turn shall be responsible to develop the capacity of LGUs (PWSU, MSLT) and CO/NGOs). Finally, LGUs shall develop the capacity of the project beneficiaries who are to operate and manage the projects.
- e) Consultancy services shall be availed of to assist the executing and implementing agencies' capabilities in the successful implementation of the project.

(2) Service Level Determination

- a) The appropriate service level for a geographical area shall be determined in the following manner:
 - at the initial stage of the project, the people will already be consulted regarding their needs, desires, and willingness to pay;
 - before construction begins, all parties will sign an agreement acknowledging their respective roles and responsibilities;
- b) Communities with no existing water system will be encouraged to adopt level II systems instead of Level I systems, subject to a validation of the technical

feasibility and the prospective users' willingness to participate in the construction, operation and maintenance of the system

- c) Existing Level III systems will be encouraged to expand their coverage to the fringe areas, subject to the results of studies on prospective demand, technical feasibility, and financial feasibility.
- d) Existing Level III systems that are in close geographical proximity to other existing Level III systems will be encouraged to merge in order to achieve economies of scale.

(3) Community Participation

- a) The selection criteria for the priority sites will be the community demand for the level of service. Demand assessment shall be made through participatory beneficiary assessment prior to construction of facilities in the barangays.
- b) Tapping existing people's/community-based organizations as operating body of the project. Merger or consolidation with the existing water association in the barangay shall be considered before forming a new one.
- c) Community participation shall be incorporated in all phases of the project -- from planning to evaluation. Community participation shall be undertaken through consultation and interactive participation with the community members.
- d) A greater participation of women shall be required in the planning, implementation, management, and monitoring of WATSAN projects.
- e) Integration of water supply, sanitation and hygiene education and provision of information, education and communication materials to the community members.

(4) Cost Recovery

- a) LGUs shall adopt commercial principles in the operation and management of water utilities in order to provide cost effective and reliable services to consumers.
- b) Community equity contributions and LGU counterpart shall be required and will serve as an indication of willingness and commitment to participate in the project.
- c) Cost recovery through regular water charge collection from the end-users shall be a requisite of the project.

- d) Funds collected from the end-users shall be utilized for operation and maintenance and future rehabilitation and reconstruction.
- e) Merging of small Level III systems into one operating body may be studied to save on O&M cost and maximize the utilization of limited manpower resources.

(5) Feedback Mechanism

- a) A participatory monitoring and evaluation system shall be installed in partnership between the LGUs and beneficiaries.
- b) Monitoring and evaluation shall start during the project implementation. The system must have clear objectives and the right indicators - sustainability, effective use, and replicability.

The success of water and sanitation projects in most cases depends on the strength of the institutional arrangement and mechanism that was adopted. Therefore, it is imperative that each institution as well as those personnel involved in the project should have a clear grasp of their respective responsibilities in the various stages of project implementation. Figure 9.4.1 and Figure 9.4.2 in the Supporting Report shows the project implementation arrangement and procedure for Level I water supply and sanitation from the national to barangay levels. These have been designed to encourage active participation of implementers and beneficiaries in undertaking the project.

9.4.2 Project Implementation Arrangement

(1) Level I

- 1) Project Selection: Self-selection and local initiative should be the basis. All barangays should be well-informed about sector opportunities and policies. The barangays should take the first step by assessing their needs, deciding that they want to improve their water and sanitation above all other needs and expressing their aspiration. The initial tasks of LGUs will be social marketing and information dissemination. The barangay should also decide desired service level/s, with a full understanding of the cost recovery aspects and other responsibilities.
- 2) Organization of associations: More flexibility is needed in order to tap local community resources. The issue of the necessity of forming BWSAs has been raised on several occasions. The proliferation of single-purpose associations for every government-sponsored project tends to divide barangay resources and complicate barangay structures. Many socio-civic groups have in fact "adopted" facilities and are

looking after their maintenance voluntarily. Actual success rate seems to be higher in areas where water supply is extremely difficult regardless of whether there is monitoring or not.

The basic principle is that the community agrees that a particular group at the local level will be responsible. Existing local groups with other socio-civic objectives, an active track record and which are ready, willing and able to take on the BWSA functions may be tasked with the responsibility for the facilities. LGUs will assess the situation and, if justified, approve alternative non-BWSA arrangements. BWSA formation, of course, remains an option. An "institutional accreditation" system can be organized. If the association fails to live up to its responsibilities, it can lose its accreditation to another group.

The association can decide how to organize itself internally in coordination with the municipal sector liaison. The important condition is that all functions have to be attended to. Thus, an association may subdivide itself by "puroks" or it may choose to operate as one institution.

- 3) Technology and Technical Design Standards: The former Rural Waterworks Development Corporation (whose functions were absorbed by LWUA) and the DPWH have developed a simplified procedure for conducting the initial data gathering. The formats, which are appended (Table 9.4.1 Supporting Report), may be adopted and used by the LGUs. If necessary, these forms can be revised to suit the specific needs of the barangay or municipality.
- 4) Bidding of works and procurement of services and materials should follow provision of PD 1594 and other appropriate government policies and practices. Where possible, major capital procurement shall be sourced within the province.
- 5) Construction and Drilling: Drillers and civil work contractors will be needed for any major rural water supply and sanitation undertaking. Construction inspection shall be done with the municipal sector liaison.
- 6) Right of Way Acquisition: Deed of Donation (or written permits to grant use of land) for proposed facility sites should be executed in favor of the municipal government/barangay prior to project approval.

- 7) Major rehabilitation work, beyond the capacity of the associations, shall be referred to the municipality for action. Clear definition of "major rehabilitation work" is needed. All costs incident to the rehabilitation shall be to the account of the association O&M reserve fund. The municipality supported by PWSU will assist, if needed, the association in securing soft loans, if the reserve funds are inadequate.
- 8) Operation & Maintenance will generally be the responsibility of the association. To support the caretakers, a franchising system for major O&M activities may be instituted by the municipality (through a private firm, a major Water District in the area or any other competent group). Mechanics and plumbers can organize well-equipped "mobile service centers" which visits all the facilities monthly to check-up facilities and provide technical advice on behalf of the LGUs.

With standardization, local hardware stores will find it more profitable to stock up on needed spare parts. The LGUs should not maintain spare parts, although it is expected to maintain a ready stock of fast-moving spares.

- 9) Water Rate Setting: Fees and rates shall be established and approved by the community prior to construction. The fees shall be sufficient to cover all monthly operation, maintenance and administration costs, as well as to establish a reserve fund.
- 10) Fees Collection and Funds Management: The association shall collect monthly fees. All funds of the association shall be deposited in a bank to be selected by the association.

Project implementation for Level I water supply and sanitation , 9.4.2, Supporting Report refers to the phased approach to the implementation of Level I.

(2) Level II

- 1) Project Selection: Guidelines similar to that of Level I project selection shall be followed, i.e., self-selection and local initiative. Two or more barangays (or puroks) may agree to have a joint water and sanitation project.
- 2) Organization: The RWSA model may be followed by the participating communities. Again, flexibility will be followed and alternative models for managing the system may be considered.

- 3) Technology and Technical Design Standards: Technical standards have been in use by LWUA for RWSAs and by DPWH for Level II systems. (refer to Table 9.4.2 with annexes, Supporting Report). As these are considered as national standards, they will be adopted by the LGUs.
 - 4) Bidding of works and procurement of services and materials should follow provision of PD 1594 and all other applicable national and local legislation on bidding and award of contracts using public funds. LWUA uses standard formats and procedures for this process, which may be adopted by the LGUs.
 - 5) Construction would usually be done by a contractor: Inspection would be undertaken by the RWSA; by the cooperative or the private developer; or by the LGUs depending on the institutional arrangement adopted.
 - 6) Right of Way Acquisition. The association shall negotiate for the purchase of land on which facilities will be constructed. Should negotiations fail, the government may exercise the power of eminent domain to secure needed land.
 - 7) Operation & maintenance and rehabilitation will be the responsibility of the association. It shall ensure that adequate tools and spare parts are available. It shall employ needed staff and caretakers.
 - 8) Water Rate Setting: All fees shall be subject to public hearing and approval by the appropriate regulatory authority.
 - 9) Fees Collection and Funds Management: Same policies for Level I shall apply. However, fee computation shall include provision for debt service and possibly a higher reserve requirement.
- (3) Level III
- 1) Project Selection: Most Level III systems are to be initiated by the municipal governments. In principle, all communities, including rural areas, may request Level III services, provided that they are willing and able to take on the financial and managerial obligations for higher service levels. The point is that service level selection is community decisions.

- 2) Organization: There are several viable Level III models, which may be adopted: the Water District Concept; a LGUs-managed system; a cooperative-run system; or a privately-owned and managed system (refer to 5.2 Data Report). The LWUA-water district concept was briefly described in the preceding chapters. For detailed information, the LGUs should contact and coordinate with LWUA. The second option for the LGUs is to maintain operational control over the utility. Current experiences, however, revealed many difficulties because of numerous government controls and restrictions. The private sector may be a viable option using the BOT mechanism or even as a longer term investment for private entrepreneurs for larger systems.
- 3) Technology and Technical Design Specifications: Regardless of the institutional model adopted, the technical design standards to be enforced should be uniform. Technical standards used by the water districts and LWUA will be adopted and enforced by the LGUs.
- 4) Bidding of works and procurement of services and materials shall follow the provision of PD 1594 and all other applicable national and local legislation on bidding and award of contracts using public funds. LWUA uses standard formats and procedures for this process, which may be adopted by the LGUs.
- 5) Construction would usually be done by a contractor. Inspection would be undertaken by the water district; by the cooperative or the private developer; or by the LGUs depending on the institutional arrangement adopted.
- 6) Right of Way Acquisition: The waterworks will have to negotiate for the purchase of land on which facilities will be constructed. Should negotiations fail, the government may exercise the power of eminent domain to secure needed lands.
- 7) Operation & maintenance and rehabilitation will be the responsibility of the waterworks. It shall ensure that adequate tools and spare parts are available. It shall employ needed staff and caretakers.
- 8) Water Rate Setting: All rates are subject to public hearings and approval by the appropriate regulatory authority.
- 9) The waterworks shall establish a formal billing and collection system. In addition, business practice systems shall be adopted. The LWUA has established a

comprehensive commercial practice system, which may be adopted by the organization.

9.5 Community Development

9.5.1 General

The success and sustainability of water and sanitation projects largely depend on the active participation of the users and unwavering commitment of the beneficiary community. Past WATSAN projects have failed because government planners and implementors gave only cursory attention to the felt needs and demands of the beneficiary communities. Thus, the lack of involvement and participation of the people led to the steady deterioration and/or non-operation of the WATSAN facilities.

This section presents the recommendations on how to harness the participation of the individual members of the beneficiary community in sector projects in order to ensure that the gains derived from WATSAN projects are sustained long after these have been constructed. In proffering these recommendations, it is necessary to take on the side of the project planners/ implementors from the central government, the provincial and local government units, down to the barangay level so as to complete the cycle where both the supply side and demand side of the planning approach to this sector study are linked.

For the WATSAN sector, greater involvement of both the LGUs and the people shall be promoted not only in service delivery and implementation but also in project prioritization, identification and in the decision-making process. Their contribution to development efforts shall be in terms of articulating their demands to guide concerned government and private institutions and of initiating community-based activities. In this way, they shall not just be passive recipients of projects and services but shall be harnessed as active partners in the identification and solution of community problems.

9.5.2 CD Structure and Linkage for Sector Projects

Participatory community development is a process that enables the members of the community to become action-oriented and self-reliant. This process is not easy to start, much less complete, because it takes time and resources. It also requires the genuine involvement, participation and collaboration of all the parties involved in sector development – from the national agencies, to the provincial governments, down to the municipal and barangay levels.

It is only through having set the proper structures and linkages among these parties that participatory CD can take off as an important part of the entire sector.

(1) National

The Department of the Interior and Local Government (DILG), through its Water Supply and Sanitation Program Management Office (WSS-PMO), shall retain the role as the central government agency that will promote the community development component of water supply and sanitation projects with its regional offices providing close coordination with the LGUs in this fundamental sector activity.

To attain this, DILG shall develop the capacity of the provincial and municipal sector teams in undertaking (1) community development/management programs, particularly in the areas of community mobilizing and organizing and in capacity building; and (2) information, education and communication management programs. It should also be able to identify national NGOs that can assist its capability building and community management programs for the LGUs and project beneficiaries.

The Local Water Utilities Administration shall continue to provide assistance to the LGUs in the formation of LGU-WS into water districts, particularly in community participation on (1) the decision on whether or not to form a water district in the locality; and (2) the nomination of representatives to the five sectors that will compose the WD Board of Directors.

The LWUA shall also continue to provide regular CD assistance to the water districts particularly in consultation with the community on new projects, (called project hearings), the information/approval of new loans, and the approval for adjustments or increases in water rates (called water rate hearings).

(2) Provincial

Since WATSAN projects would be on-going in the long term, it is recommended that a CD Unit should be established within the proposed "Provincial Water Supply and Sanitation Office," discharging functions as important as the technical, financial, administrative units. The CD Unit will serve as the coordinating arm for all CD activities for WATSAN projects in the Province. It will mainly be responsible for establishing an over-all Comprehensive CD Management Plan for the province and implement this together with the LGUs. It will also be equally responsible for the conceptualization or the over-all Comprehensive IEC Plan for province and execute this together with the

LGUs. The CD Unit shall also closely coordinate with NGOs/CBOs/POs in the province to augment their manpower and experience in doing community organizing and mobilization work. It will also obtain/furnish the inputs articulated by the people in all the phases of the project – that is, from project planning, implementation, operation and maintenance, monitoring to evaluation – thus contributing significantly in extending the life of the facilities as well as in promoting the health and productivity of the community as a whole.

Appointment of a Provincial CD Specialist

The province shall, within one year, provide for a regular plantilla position for at least one CD Specialist who will be appointed to take charge of the CD Unit. The CD Specialist will plan, implement and/or coordinate CD management programs, IEC programs, and the capacity building activities for sector projects. He/she shall also be responsible for the assisting in the training of municipal CD specialists and barangay CD coordinators. Within two years, or when the specific projects under this sector materialize, another CD Specialist position shall be opened, if resources permit. If not, said NGOs/CBOs/POs can be tapped for the purpose (refer to Supporting Report for the responsibilities and qualifications of a CD Specialist).

(3) Municipal

The municipality is the next link in the delivery of services to the people. There may be a need to establish a more permanent office/unit, such as a “Municipal WATSAN Office” in the long term; but for the medium term, the Municipal Sector Liaison Team (MSLT) concept will do. Among this team’s multi-functions are to undertake and/or coordinate all CD and IEC work for the sector. It shall also collaborate with the water district on their CD-IEC programs, when and where practicable. It shall also coordinate with the NGOs/CBOs/POs that find their presence in the municipality. It will obtain/furnish the inputs articulated by the people in all the phases of the project – that is, from project planning, implementation, operation and maintenance, monitoring to evaluation to be utilized by those concerned.

Assignment of a Municipal CD Specialist

Within the medium term, the municipal government shall endeavor to assign a CD Specialist to the MSLT who shall undertake and/or coordinate actual CD and IEC work, together with the CD Specialist of the province. The CD Specialist shall closely coordinate CD work with NGOs/CBOs/POs and the private sector. He/she will also be

responsible for assisting the Province in capacity building/training programs for barangay CD coordinators.

(4) Barangay

Not all barangays have established water supply and sanitation committees. It is recommended, therefore, that each BDC should establish a WATSAN Committee that will undertake and/or coordinate all WATSAN projects in the barangay. The committee, to be headed by the BDC's infrastructure committee chairman, shall have four members, preferably coming from the health, education, socio-civic and NGO sectors of the barangay. They shall be responsible for coordinating all the activities/phases in the project, including community development, such as but not limited to barangay meetings, surveys, mapping, project identification and planning, formation of a suitable WATSAN association/organization and other decisions regarding the acceptance of the water facility and the barangay counterpart in the construction of WATSAN facilities.

Designation of Barangay CD Coordinator

The barangay council should designate one person, preferably a member of the BDC or the WATSAN committee, who can be trained on CD work, particularly community organizing. Once trained, he/she will be the permanent CD coordinator of all CD activities related to WATSAN projects. The Barangay Health Worker can be an ideal candidate since he/she is already familiar with the work and the whole community.

9.5.3 Training on CD

The DILG WSS-PMO should immediately develop a capacity-building program on CD and IEC for LGUs, utilizing existing training institutions such as the Local Government Academy (LGA). While the importance of CD is acknowledged by the LGUs, there is an urgent need to raise the general level of CD awareness of the officials who would be involved in making decisions for the sector. For those who have a direct hand in the planning and implementation of sector projects, there is also a pressing need to upgrade their knowledge on CD-CO processes and approaches because methods being currently applied have been found to be very limited in scope, coverage and effectivity.

In this connection, it is recommended that the following measures be done in the medium term: (1) conduct a training needs assessment to determine the appropriate type of training program suited and relevant to the proposed participants' level of attainment; (2) upgrade the knowledge of the PPDO and PHO staffs, the MPDO and the MHO staffs, as well as the

members of the BDC's WATSAN committees of improved CD frameworks available as well as CO approaches developed from the experience gained from other WATSAN projects; and, (3) develop other training programs to enhance CD and IEC as shown from the result of the training needs assessment.

Suggested seminar workshops are the following: (1) Trainors' Training on CD – duration, 4-5 days; to be conducted by the DILG WSS-PMO, with the proposed participants as select PPDO/PHO staff and CD Specialists of the municipalities who belong to the priority list for the medium-term; (2) Seminar Workshop on Community Organizing – duration, 4-5 days; to be conducted by the Province with the assistance of the DILG WSS-PMO, the proposed participants being the barangay CD coordinators; and (3) Seminar Workshop on IEC – duration, 4-5 days; to be conducted by the DILG WSS-PMO with the assistance of the Philippine Information Agency (PIA), the proposed participants being CD Specialists of the LGUs.

These training programs should be conducted on a regular basis until the all the municipalities/barangays are covered. Each of the parties/participants to the training will shoulder their own costs, such that the DILG will be financially responsible for its trainors, the instructional materials, and the training venue. The LGUs, on the other hand, will pay for their own participants' expenses such as transportation and room and board. Eventually, when the Province has been fully trained and equipped to be the trainor, it shall conduct said CD/IEC training programs and will charge the LGUs and the barangays their proportionate share in the training costs.

9.5.4 Utilization of NGOs

On the national level, the DILG should screen and select national NGOs, with local networks or offices, that specialize in community management programs and tap these to assist the LGUs in organizing project beneficiaries to be more active partners in sector development.

The province, through the proposed Provincial Water Supply and Sanitation Office, must harness the participation of the private sector in community organizing and training of project beneficiaries. Initially, the provincial CD Specialist should make an updated inventory of all NGOs, CBOs and POs that do work in the province. It must identify and categorize these organizations according to the following: (1) expertise in community organizing and training; (2) sector-related experience in water supply, sanitation, solid waste; (3) expertise in communications planning, information dissemination and education.

9.5.5 Approaches to Participatory Community Development

(1) Manner of Participation in Sector Development

There are three levels of service where both the LGUs and the beneficiaries can participate in sector development. These are the following:

- Level 1 – Participation in (1) planning and implementing sector projects in the province/municipality/barangay; (2) the formation, management, operation and maintenance of the WATSAN association, usually a BWSA or a water cooperative.
- Level 2 – Participation in (1) planning and implementing sector projects in the province/municipality/barangay; (2) the formation, management, operation and maintenance of the WATSAN association, usually a RWSA or a water cooperative.
- Level 3 – Participation in the formation of water districts or LGU-operated waterworks, and in determining acceptability of new projects and corresponding water rates, among others.

LGU Participation

The LGUs, to be able to participate fully in all the phases of the sector project, should be made to decide on the type of project and its scope to be implemented in the province that would be appropriate to its ability to support in the long term.

To attain this, the LGU must encourage active community participation for the sector and open venues that will allow the beneficiary communities actual involvement in all the phases of project development such as in planning and design, monitoring and evaluation. These include activities as project identification, site selection, water rate setting, managing the WATSAN association, and the operation and maintenance of the constructed facilities.

It is recommended, therefore, that the LGUs utilize the following approaches to facilitate various levels of community participation:

- a) **Information Sharing.** In community projects where external assistance is provided, project planners and implementors should not only share information with beneficiaries to facilitate collective and individual action but should share information as a means to assess the demand of the beneficiaries as they disclose their felt-needs and experience to the planners and implementors. This arrangement enables both sides come to understand and perform their tasks better. Information sharing/demand assessment can be achieved

through formal and informal meetings, house-to-house visits or surveys and/or barangay meetings.

- b) Consultation. The LGUs should consult the beneficiaries on key issues during all the stages of a project cycle in order to increase their level of community participation. The beneficiaries are the people to be actually served by the WATSAN improvement or project, including their locally elected leaders, sectoral representatives and other acknowledged informal leaders. This broad-based consultation gives the beneficiaries the opportunity to interact freely and provide valuable feedback to the planners and implementors. In WATSAN projects, the people should be consulted as early as the planning/study period when level of service, facilities sites, costs and other important data are determined. Consultation will be crucial during the construction of facilities, as it is in this stage that participation is most needed through the provision of free labor and donation of locally available materials.
- c) Decision-making Role. The LGUs should give the beneficiaries and their leaders a genuine decision-making role in planning and implementing sector projects, exclusively by the beneficiaries alone or jointly with others on specific issues or aspects of a project. Decision-making implies greater control or influence on the project and, therefore, a higher level of community participation.
- d) Initiative or Action. The LGUs should provide the beneficiaries and their leaders ample room to take initiative in terms of actions and/or decisions pertaining to a project, such as initiating the organization of a WATSAN association, requesting for training, and upgrading its system from one service level to another.

Beneficiaries' Participation

There are many ways that the beneficiaries participate in sector projects. These can be categorized into four ways, namely:

- a) The Provision of Free Labor and/or Materials. The beneficiaries should continue to contribute needed labor and materials, as this is one way of increasing the people's identification with the system being built. But, contributing labor or donating materials as a demonstration of participation should not be the only form of participation available because pride of ownership is also dependent on what the people's other priorities might be.

- b) **The Sharing of Costs.** Project beneficiaries should also be made to contribute in cash or in kind in maintaining the system – an indication that they value the service and are committed to keeping the system in good working order. This sharing of costs, through cost recovery schemes or O&M agreements, may not in themselves be a reliable indicator of local commitment, if the average community members and, in particular, women have not been involved in decisions concerning the system. Thus, other forms of participation are recommended to be explored.

- c) **Participation through Contractual Obligation like MOAs.** The participation of the beneficiaries in the project can be detailed in a listing of the roles and responsibilities that apply to each partner in the project, that is, national government with the LGU, and the LGU with the community. To make these requirements more formal and binding, a contract or a Memorandum of Agreement may be drawn. The elements to be considered in the MOA should be the how to solicit the continuous support of the community's leadership, the WATSAN association's leadership, and the maintenance volunteers in order to keep the WATSAN association and its facilities functioning.

It is recommended that the participation of the beneficiary community should, therefore, shall be demonstrated through: (1) the organization of water and sanitation committee in all BDCs that would coordinate and monitor local contributions in the sector; (2) the organization of a WATSAN association that will promote, manage, operate and maintain the system; (3) the training of volunteer mechanics, pump operators and other technicians.

It should be noted, however, that this approach might not sufficiently involve the average person in the community or barangay, since agreements made with the community leadership and presented at large meetings may not be fully understood by the mass community. So, this must still be augmented by other forms of participation.

- d) **Participation through Community Decision-Making.** This is the most highly recommended form of participation because it creates a strong sense of local responsibility for using the improved WATSAN resources well and sustaining these in good order. The community's participation, therefore, must evolve and be developed through participatory community development and education processes (explained later in this report) which must involve both the male and women members of the community in decision making right from the start.

The measure of success can be confirmed by: (1) the collective decision to organize the community WATSAN association where the members can articulate what responsibilities they are willing to assume in the general management, operation and maintenance of the WATSAN facilities; (2) the collective decision on matters pertaining revisions in project plans and designs and the type of training required that shall reflect the demands of the people in the community; (3) the collective decision on the type of WATSAN organization and level of service suitable for the community; and (4) the collective decision for the criteria on site selection and water fees to be charged, among others.

(2) The CD-CO Process

For Levels I and II service, it is suggested that the Province should utilize and/or adopt the Community Development Process developed from the recent WATSAN UNDP-PHI assisted project, and modify this to suit local conditions and requirements. The recommended typical CO-CD process or manner for Levels I and II comprises three phases of community activities.

The first phase, called Formation of Organization Phase, consists of activities intended to mobilize the members of the community. The second phase, Development of Organization, involves activities aimed at building the capability of the user's group that includes training. The third phase, Consolidation of Organization, consists of activities that strengthen the capacity of the user's group to sustain the operation of the association (refer to Supporting Report for the detailed community development process).

As entry point of all development activities, the BDC is primarily responsible for the identification and prioritization of sector projects/needs. The decision whether to accept Level I or II facility and the council's counterpart shall emanate from the BDC with a parallel consultation with other community leaders. In this way, the community demand could be assessed and the support and commitment of the entire community secured.

Once an agreement is reached with all concerned, and the BDC decides to undertake the WATSAN project, the Barangay CD Coordinator, with assistance coming from the provincial and municipal CD Specialists and/or the NGOs hired for the purpose, must undertake a barangay survey to validate the assessment of the BDC as compared with the beneficiaries' demand for the level of service. The survey will also provide the information on the users' willingness to take the responsibility for the O&M of the facilities, willingness to pay and to be trained on O&M as well as the provision of local counterpart. Such

discussions will generate a demand assessment from the barangay officials to be validated and/or confirmed against the results of the barangay survey. The survey results, together with the spot map, must be presented to the community for further validation and/or confirmation (refer to Supporting Report for the Community Organizing Handbook for Water Supply and Sanitation).

In forming the water districts, LWUA, in coordination with the LGUs concerned, conducts a series of sectoral consultations with the community. Since water districts are formed at the option of the LGU, LWUA first consults the people, through a succession of public hearings, to arrive a consensus on whether or not to form the water district. LWUA also encourages the community to participate in the selection of the WD's' five-man board of directors, who are nominated from various sectors. Once formed and operating, the water district conducts regular dialogues with its concessionaires on issues such as water rates formulation and adjustment, expansion program and other matters that may affect the people-WD relationship.

9.5.6 Information, Education, and Communication (IEC)

In the long term, it is the power of information, education and communication programs that would sustain the gains of the sector. Proper attitudes and values towards water and sanitation would be developed only if the LGUs and the users are fully informed of sector developments, opportunities and projects and made thoroughly aware of their responsibilities towards sustaining the operation and management of WATSAN facilities. Thus, IEC should be looked upon as a long-term activity, which should ideally start as a foundation activity even before a project begins.

It is recommended, therefore, that conceptualizing a comprehensive and systematic IEC program be undertaken from the national levels, down to the provincial, municipal and barangays. For the sector planners and implementors, an IEC program would foster interest and support needed from local officials and thus pave the way to a smoother implementation of projects in the national, provincial, municipal and barangay level. On the side of the people, an IEC program would promote better awareness and understanding of the benefits and responsibilities, thus giving them a basis for better decisions for the sector.

(1) National

As an interim measure, the DILG's WSS-PMO should periodically provide information on sector policies, plans, initiatives and programs for regular dissemination to the public, as

well as to its regional and provincial offices. It can do so by utilizing the Department's Public Information Office (PIO) and other existing communication linkages with the LGUs, as well as the government information and mass media networks, such as the Philippine Information Agency, Philippine Broadcasting System, and PTV-4.

In the medium term, the DILG's WSS-PMO should work for the creation of a public information unit within the PMO to take care of multifarious IEC tasks, such as, but not limited to: (1) planning and execution of a nationwide comprehensive public information and education program on water supply and sanitation utilizing the print, broadcast and television; and (2) undertaking capability and capacity building programs on IEC for provincial and municipal counterparts.

In the long term, the WSS-PMO should introduce WATSAN education formally into the school system, as an enhancement in both the grade and high school curricula. Simultaneously, it should attract national and local vocational schools to offer courses in support of the operation and maintenance of WATSAN facilities. As such, it should officially come into agreements with the Department of Education, Culture and Sports (DECS) and the Technical Education and Skills Development Authority (TESDA).

In order to maximize existing IEC programs on the national level, it is recommended that the DILG link or tie-up with the Local Water Utilities Administration (LWUA) which already has a nation-wide IEC program on water utilizing all communication media.

(2) Provincial

The proposed Provincial Water Supply and Sanitation Office, through the CD Specialist, shall be responsible for filtering down information on sector developments to the municipalities, barangays, as well as the general public utilizing all forms and channels of communication. As an interim measure, the CD Specialist shall utilize the provincial public information officer for the purpose of information dissemination only. However, it should slowly develop its own expertise in information and communications planning so that the comprehensive IEC program can be further improved and better executed in the long term.

It is suggested that relevant provincial events (meetings, fora, training programs, etc.) be utilized to discuss sector projects and distribute informational/educational materials. General information, that is, news on current projects, technologies, health and hygiene tips – can be channeled through local radio stations. These strategies should be replicated at the

municipal levels. The Province, assisted by the DILG-WSS PMO, should sponsor an IEC seminar workshop among the municipal CD Specialists.

(3) Municipal

It is suggested that the IEC strategies of the province be adopted by the Municipal Sector Liaison Team, particularly the assigned CD Specialist. If broadcast media facilities are absent in the municipality, it is also recommended that the CD Specialist employ the interpersonal approach in communication, such as group discussions, community meetings, dialogues, household visits, and one-on-one talks with the barangay officials and people. Furthermore, the municipality should maximize the use of non-traditional media in disseminating information, such as school exhibits, fiestas, special town events and the local movie houses. The CD Specialist may seek the assistance of the water districts in their respective localities. The water districts generally implement comprehensive IEC programs.

(4) Barangay

Aside from CD work, the barangay CD Coordinator shall also disseminate all sector information to the barangay officials and constituents. Thus, the CD coordinator should endeavor to attend all regular barangay council meetings to discuss relevant sector information. For urgent information, the coordinator can call special dialogues or meeting to announce important messages. He/she can also take advantage of special community gatherings such as civic and religious group meetings, PTA (school) meetings, to distribute informational/educational materials. The coordinator can also print messages on posters that can be placed in strategic places.

9.5.7 Health and Hygiene Education

In the medium term, the proposed Provincial Water Supply and Sanitation Office can adopt the health and hygiene education program of the Department of Health (DOH) which already has a comprehensive program planned at the central level and executed by its local health offices. This Office should ask the assistance of the PHO in the implementation of a province-wide health and hygiene education program, utilizing existing channels and methods as well as available materials. It should also include health education information in its training programs for WATSAN associations.

As revealed in the group surveys, the people learned about health and sanitation mostly from health workers and from the radio. The province can, therefore, take a cue from this by giving

emphasis on the utilization of health personnel to undertake health education and on airing health education materials over the radio.

9.6 Gender

9.6.1 General

The LGUs must recognize and give vital emphasis on the role of gender sensitive participation as critical factors in ensuring the project's success. Sustainability of water supply and sanitation services and hygiene programs depend on responding to the demands of men and women in communities. Use, maintenance and financing of water supplies and sanitation systems require the participation of both the men and women in the planning, implementation and monitoring and evaluation of projects.

This section presents the recommendations on how to harness the equal participation of the men and women of the beneficiary community in sector projects in order to ensure that the gains derived from WATSAN projects are sustained long after these have been constructed.

9.6.2 LGUs and Gender

The LGUs should always conduct "gender sensitivity analysis" when determining water supply and sanitation projects that are appropriate for the men and women members of the beneficiary community. This means that the difference between men's and women's activities, roles and resources will have to be identified in order to determine their development needs.

Through this, the constraints and opportunities of both men and women within the water and sanitation sector can be ascertained, a process that can help in the provision of services that men and women want which are appropriate to their circumstances. Thus, data collected, such as, but not limited to, population, type of participation, morbidity and mortality rates, shall be gender-disaggregated. Among others, the following data shall be collected:

- National-level policies and programs on gender;
- LGU-level policies and programs on gender;
- Local NGOs and their programs in promoting gender and development;
- Experiences of sector agencies in mainstreaming gender in sector projects;
- Actual views of women and men regarding their demands and their perceived roles and responsibilities.

It is important to note that since gender issues are usually localized, all concerned LGU staff be equipped with knowledge of gender and development as well as gender analysis skills prior to making any approaches to the target community. In this connection, to ensure the gender responsiveness of WATSAN projects, the province should be trained through a "Trainers' Training Program on Gender", and later on transfer what has been learned to municipal/barangay staff involved in sector projects.

9.6.3 Gender Participation in WATSAN Projects

It is recommended that both the men and women of the beneficiary communities must be given equal opportunity to be appointed in (1) the water supply and sanitation committee in the barangay; (2) the Board of the WATSAN association to be organized; (3) and other committees/task forces that may be formed in order to realize sector projects and goals.

On WATSAN training, both genders should be given equal chances in articulating the type and duration of training they would like to attend. The same should be done in determining the functions that the men and women would like to assume in the WATSAN association, especially in operation and maintenance. In other words, the roles traditionally held by men or women should be made available to the opposite genders as well.

A simple checklist, developed from the OECF-funded Special Assistance for Project Sustainability of the Rural Water Supply Project III, of the issues to be considered for gender responsiveness is presented below:

- a) For construction of Level I facilities and sanitary latrines:
 - Are the designs (specifications) of Level I facility and sanitary latrines friendly to both sexes and based on their needs?
 - Do system/procedures allow both sexes to participate in construction?

- b) Capacity enhancement program:
 - Are all project personnel aware of gender issues?
 - Is gender training incorporated in the capacity enhancement program?

- c) Community development program:
 - Can both women and men participate in any kind of meeting?
 - Can both sexes freely express their opinion in the meeting?
 - Is all uncompensated work shared equally among women and men?

- Do both women and men participate in the decision process for determining construction equity (fees and labor)?
- Do both women and men participate in the WATSAN association's formation process?
- Are both sexes represented in WATSAN association as board members?
- Do both sexes participate in a pre-construction/formation training?
- Is all training opportunity shared by both sexes?
- Do both sexes participate in O&M activities?
- Do both sexes participate in monitoring and evaluation activities?
- Will the project effects be shared equally among women and men?

9.7 Human Resources Development and Training

The training is a planned strategy to strengthen individual competencies to meet appropriate standards of excellence to achieve the goals of the program. It is a planned process of helping and enabling other people acquire attitudes, skills and knowledge by themselves. The objectives of training are individual competence, organizational effectiveness and efficiency, and national development. Training helps ensure the availability of qualified and able manpower, the shortage of which is considered as one of the major obstacles to improvements in the water supply and sanitation sector.

In planning and implementing training activities, trainers must keep in mind that there are two processes simultaneously taking place - skill/knowledge acquisition and attitude formation. To illustrate the process, a brief exercise may be conducted during the session to show the two simultaneously occurring processes - those related to task and/or subject on one hand, and those related to attitude formation on the other.

(1) Training Principles

The effective application of teaching and learning principles is vital to achieve optimal learning. Trainers must bear in mind the following principles:

- 1) Perceived Purpose: Participants should recognize why a particular topic is being discussed or presented, i.e., the relevance. This is the first element that should be established and agreed upon in any training activity.
- 2) Graduated Sequence: The subject matter should be presented in a logical sequence, which can be followed by the trainees.

- 3) Knowledge of Results: At every point during a training activity, participants must know how well they are performing, i.e., feed-back.
- 4) Appropriate Practice: If the objective of a training effort is to develop specific skills, there must be opportunities to practice and demonstrate these within the training activity.
- 5) Individual Differentiation: Attention must be paid to the fact that every person learns at a different pace.

(2) The Training Process

- 1) Needs Assessment: The first step is to determine the problem to which a training solution will be able to make an impact. A careful analysis is necessary because the training should address and focus on precisely those deficiencies in knowledge, attitudes or skills that hinder reaching certain goals. However, one must bear in mind that not all problems or training alone can solve deficiencies. In most cases, complementing interventions will be needed.
- 2) Setting Learning Objectives: In the second step, the learning objectives need to be set. Training designers shall present these objectives in behavioral terms, i.e, what should a participant be able to do at the end of the training period (not what the session will accomplish). It is necessary to formulate them with care because they also serve as criteria for evaluation at the end of the training process.
- 3) Methods and Techniques: Different methods of training are appropriate for different types of learning; the methodology should be appropriate with the set learning objectives. Participatory methods, like group exercises, group discussions, role plays etc. are most effective in attitude formation. The choice of methodology is mainly based on the learning principles and objectives. Human factors, resources available (time, facilities) and the subject area will also affect the choice.
- 4) Evaluation of Training: Training evaluation assesses whether a course was adequately designed and implemented to meet the set objectives. There are four levels of evaluation presented. Each level focuses on a specific area and involves a specific set of standards and evaluation tools.

(1) The Training Design

Training design is more than simply putting up a schedule. It is a plan of action to be followed by a trainer in implementing his activities. It consists of:

- 1) Rationale: Why set up a training program in the first place, and why would people have an interest in it?
- 2) Learning objectives: Workshops should aim to develop a strong understanding of concepts like: participatory development, demand, etc. An ability to analyze and apply participatory development in their local setting or to articulate water supply and sanitation demand and supply concepts are key capacity building objectives. Methods should be more participative and consultative, i.e., allowing planners to interpret the principles with an awareness of their local conditions.
- 3) Assumptions about the participants' background; define who would best benefit from the program - the target audience.
- 4) Curriculum: Determine what the potential trainees need to know before they participate in the program, decide on the training methods and materials, draw up session plans and sequence the sessions logically.
- 5) Evaluation: Decide how the program itself and the participants are evaluated.
- 6) Administrative aspects: The budget for the program, the total costs, possible costs to the trainees. Also important are things like housing (for the program itself, for facilitators and trainees), registration of trainees, logistics, etc.

(2) Responsibilities

Needs Assessments will be conducted as the basis for the design of the courses. Participants will be selected based on their tasks and responsibilities. The PWSU will establish and maintain a reference library and information/ documentation center, which will include training materials and equipment to service needs of the municipalities. The DILG, in coordination with the International Training Network (ITN) - Philippines and other agencies and NGOs, will provide inputs to these training activities.

The LGU role entails not only to run courses but also to ensure that training programs take place and are effective. As an alternative, training activities may be contracted out to well-functioning water districts. NMYC training centers were established; NMYC can be tapped to provide testing and skill certification for caretakers. NMYC regularly conducts plumbing and pipefitting courses and the national trades certification system. Finally, there are technical and vocational schools who may be tapped to provide technical training and to award diplomas and certificates to those who undergo their programs. These schools however, do not have at this time, any special courses for water and sanitation caretakers. A program can be set up with these institutions.

External training assistance must be viewed as participation within this process. Its purpose is to guide and motivate (not replace) local trainers. Local trainers need to go through the process of, e.g., designing courses or developing materials, etc. Many learning opportunities are missed when non-local experts replace local trainers in doing need assessments, course designs, materials development, etc.

1) For staff operating Level I systems

- a) Preparatory orientation training activities will be organized leading to the formation of associations. These community-level orientation activities will consist of briefings about the health situation, the relationship between health, water supply and sanitation. The LGU program for water and sanitation improvement will be presented, including policies and procedures for accessing technical and financial support.
- b) Technical training of caretakers will consist of: water source protection (for deep wells, shallow wells, spring boxes and surface water intake structures); water quality protection; operation and maintenance of hardware (pumps, pipes), including simple replacements of parts; plumbing and pipefitting.
- c) Management training will include: fee setting, bookkeeping and funds management, preparation of improvement plans and monitoring and reporting requirements. Detailed policies of the LGU will be discussed.
- d) Current training activities and materials for the BWSAs by the DILG will be reviewed and adopted by the municipalities. UNICEF assisted DILG in updating these materials.

2) For staff operating Level II systems

- a) Preparatory orientation and training activities will be organized leading to the formation of associations. These community-level orientation activities will

consist of briefings about the health situation, the relationship between health, water supply and sanitation. The LGU program for water and sanitation improvement will be presented, including policies and procedures for accessing technical and financial support.

- b) Training of technicians and operators will generally consist of: water source protection (for deep wells, spring boxes and surface water intake structures); water quality protection; water storage; chlorination; operation and maintenance of hardware (pumps, pipes), including simple replacements of parts; plumbing and pipefitting. Pump operation and electrical controls will be a major focus of this program; metering will be presented.
 - c) Management training will generally include: organization aspects, operations policy formulation, water rate computation, preparation of bills, bookkeeping and funds management, preparation of improvement plans and monitoring and reporting requirements.
 - d) Training activities for the RWSAs prepared by LWUA will be reviewed and adopted by the municipalities.
- 3) For staff operating Level III systems
- a) Technical training of engineers, technicians and operators will generally consist of: water resources conservation and protection (for deep wells, spring boxes and surface water intake structures); water quality protection; hydraulics; transmission lines; water storage; treatment and chlorination; construction inspection; and operation and maintenance of facilities. Implementation of a metering program will also be discussed. Methodologies for feasibility analysis for system expansion will be presented.
 - b) Policy and management training will include the full commercial practices system including budgeting and cost controls, bookkeeping and accounting, procurement, maintenance of stock inventories, rate formulation and capital budgeting. The policy formulation process and the various areas of policy for utility operation will be presented in detail. Long-range planning, financial analysis and review, and monitoring with reporting requirements will be discussed.
 - c) The DPWH, LWUA and MWSS developed a comprehensive set of programs and materials for both technical and management training. Inputs from these three agencies and also from local water districts should be sought.

- 4) Training of PWSU staff and municipal liaison staff: Based on the task descriptions presented, the following training programs will be required. At least one program is conducted annually for each of the workshops and courses. The programs will explain the basic concepts and procedures. Succeeding programs will review the adopted policies and procedures and lay the bases for improving operations at the provincial and municipal levels. Municipal sector liaison staff will participate in these programs. They should be organized by the PWSU; except for the Provincial Coordinators' Workshop, which is best handled nationally by DILG to provide a wider base for sharing of experience among the PWSC. In addition, DILG will provide basic guidelines for the design and implementation of the workshops and courses.
- a) The Provincial Coordinators' Workshop will be an annual activity intended to facilitate the exchange of experience among the coordinators. New national policies, opportunities and constraints will be discussed. Case studies will be presented. Sector management & technical experts will be invited to speak on current issues and trends.
 - b) The Community Development Course is intended for trainers, community development specialists and municipal liaison staff. The scope of the course will include: social marketing & public information programs, community organizing skills, training skills (needs assessment, design, implementation & monitoring).
 - c) The Technical Course seeks to acquaint technical staff at the provincial and municipal levels on the physical aspects of the sector. Its scope will generally include: water resources, overview of water supply systems (source, transmission, treatment, storage, distribution), drilling and source development, water quality protection, feasibility study and design procedures and standards, and operation and maintenance.
 - d) The Project Monitoring Seminar will provide an overview of the monitoring functions and the sector reporting requirements. The process of sector monitoring and updating the PW4SP will be presented in detail. Project monitoring procedures will also be discussed.

(3) Health and Hygiene Education

- 1) Policy: The LGUs shall establish hygiene education programs through appropriate methods and channels referring to on-going national program. These shall include immediate short-run programs: information campaigns; as well as long-term value formation interventions, possibly through the formal school system. If the LGUs are to

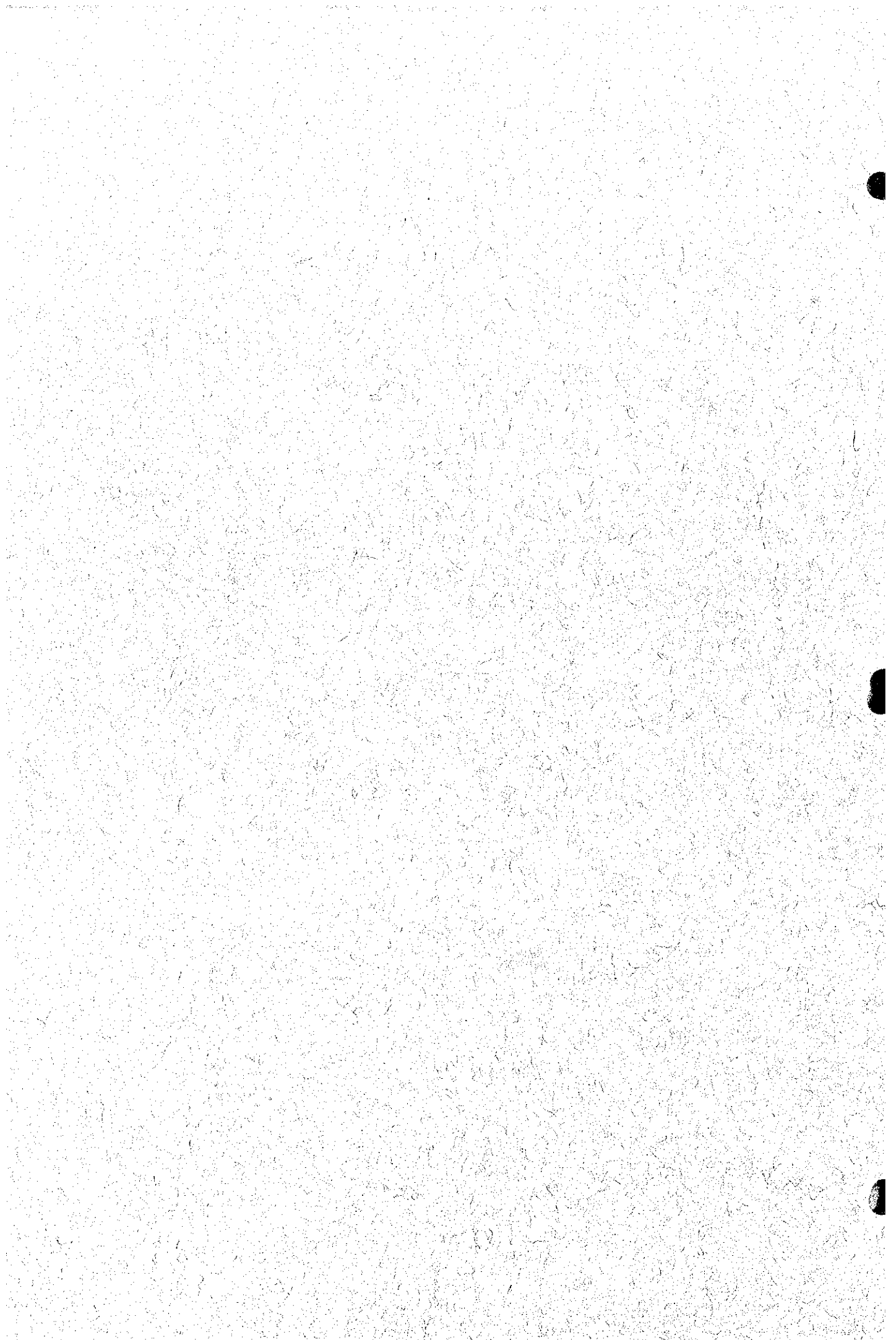
attain the full economic benefits of improved water and sanitation services, household behavior and hygiene need to be addressed. Three approaches will be used:

- a) Community-based Approach: Direct house-to-house campaigns can be implemented through the Rural Health Units, as part of their current functions. Meetings by house "clusters" to discuss relevant health issues can also be organized. This will also be done through direct person-to-person contact with PHO staff, the municipal health staff, midwives, sanitarians and the barangay health volunteers. Special presentations can also be done during the regular meetings of community-based socio-civic clubs. Various flip charts and IEC (Information, Education and Communication) materials are already available.
 - b) School-based Approach: Students are the main targets of this approach, either directly or through their teachers. Special focus activities, such as Water and Sanitation Week or Nutrition Week can be introduced with programs or convocations to make the student aware of the issues and solutions. Posters, flip charts, and other audio-visual materials will be required.
 - c) Media-based Approach: This approach utilizes radio and print media to introduce and reinforce health messages. Many NGOs and the Philippine Information Agency (in coordination with the DOH) have developed interesting and attractive materials.
- 2) Responsibility: The community development and training specialists at both provincial and municipal levels will be responsible for the health and hygiene education function. The CDTs will formulate an action plan and implementation will be done by the municipal liaison staff and other local officials. At the barangay level, its implementation will involve the close coordination among the midwives, the barangay health workers and the Committee on Health of the barangay council. Materials for this efforts have been previously developed and can be found with the various PHOs and RHUs. UNICEF provided strong support in the preparation of these materials.
 - 3) A continuous health and hygiene education program will be launched by the LGU. Simple and clear messages and approaches will have to be defined. These messages may include the following: relationship among health, water supply and sanitation; sector opportunities and services available at the rural health units. The relevance of these or other messages will have to be determined by the municipal sector liaison.

Chapter

10

**COST ESTIMATES FOR
FUTURE SECTOR DEVELOPMENT**



10. COST ESTIMATES FOR FUTURE SECTOR DEVELOPMENT

10.1 General

The total investment cost required in the two phases was studied for implementation of the future requirements identified in Chapter 8 and Chapter 9. The investment cost is defined to include direct cost for construction/rehabilitation of required facilities and sector management, as well as physical and price contingencies. Cost requirements for the equipment and vehicle are discussed as a reference to the LGUs and considered in the long-term development. In addition, recurrent cost is estimated for the operation and maintenance of facilities.

Conditions and assumptions to come up with investment cost were established covering all sub-sector components referring to the National Sector Master Plan and current standards of relevant sector agencies (DPWH, DOH and LWUA). Of the total investment cost required, only construction cost for sector components by municipality was included in this Chapter. The total investment cost is presented in Chapter 11 as a total requirement of the province.

With regard to construction cost, unit construction cost per person/household/facility was first prepared under contract-out basis for respective sub-sector component facilities in 1997 price level (refer to Supporting Report).

Recurrent cost was also included in this Chapter taking into account of regular operation, spare parts and equipment replacement for sector components concerned.

10.2 Assumptions for Cost Estimates

(1) Unit Construction Cost

Unit construction cost per person (household or facility) of each sector component was estimated based on the current standard unit cost of relevant sector agencies and typical standards developed for previous PW4SP as contract-out basis in 1995 price level. Referred cost data are urban water supply of LWUA, rural water supply of DPWH and sanitation of DOH. For price adjustment of construction materials, the NSO price index of 1995 to 1997 was referred to.

Unit construction cost consists of, in general, direct cost (mobilization/demobilization, material and labor), indirect cost (profit and VAT of contractor) and government expense (de-

tailed engineering, institutional development and water quality analysis-when deemed necessary).

Freight cost of construction materials excluding indigenous materials, i.e., sand and gravel, was counted for sanitation and rural water supply in consideration of the distance from Manila. The cost is estimated at fixed percentage (11%) based on the standard practice being adopted by sector agencies.

Table 10.2.1 shows a summary of unit construction cost and their descriptions are given below (details are referred to Supporting Report).

Urban water supply:

- Unit cost for three different sizes of Level III system covering served population of 5,000, 10,000 and 15,000.
- Unit cost for Level III system shall be applicable to both systems utilizing spring source and deep well. However, especially in case of utilization of spring source, it is desirable to confirm by surveying in the implementation stage, since the location (distance/elevation) of untapped spring might be affect the construction cost.

Rural water supply:

- Unit cost for four types of Level I wells (shallow well at 18m in depth and deep wells at 40, 80 and 120m in depth).
- Unit cost for deep well was estimated in combination of open hole with gravel packed well and natural gravel packed well based on water source study results. The profile of the two kinds of wells, gravel packed and natural gravel packed wells is assumed to be 90% and 10%. Required costs for iron removal facility shall be included as required for deep wells at high iron contained area.
- Unit cost for Level II system to cover 600 served population.

Sanitation:

- Household toilet: (Construction cost is not considered since it is out of public works; unit cost is a reference for financial study in terms of affordability.)
Unit cost for four types of sanitary toilets (flush, pour-flush, VIP and Sanitary Pit Latrine) to cover one served household in urban or rural areas. Cost of flush toilet includes costs for demolition, water closet and water line.

Table 10.2.1 Unit Cost of Facilities by Type and Service Level

| Sector Service Level | Unit Construction Cost per Facility (Pesos) | Service Coverage | | Unit Cost | | | Rehabilitation Cost of Level I Deep Well (Pesos/Well) |
|--------------------------------------|---|-------------------|-------------------|---------------|------------------|-----|---|
| | | Served Population | Served Households | Pesos/ Person | Pesos/ Household | | |
| Urban Water Supply | <i>New System</i> | | | | | | |
| | For 5,000 population | 22,227,500 | N/A | 4,500 | N/A | | |
| | For 10,000 population | 33,122,500 | N/A | 3,400 | N/A | | |
| | For 15,000 population | 48,038,750 | N/A | 3,300 | N/A | | |
| | <i>Expansion</i> | | | | | | |
| | For 5,000 population | 20,437,500 | N/A | 4,100 | N/A | | |
| | For 10,000 population | 31,332,500 | N/A | 3,200 | N/A | | |
| For 15,000 population | 46,248,750 | N/A | 3,100 | N/A | | | |
| Level II | 1,105,302 | 600 | 120 | 1,850 | 9,300 | | |
| Level I | | | | | | | |
| Rural Water Supply | <i>Deep Well</i> | | | | | | |
| | 40 meter depth | 261,100 | N/A | N/A | 17,410 | | |
| | 80 meter depth | 443,500 | N/A | N/A | 29,570 | | |
| | 120 meter depth | 618,600 | N/A | N/A | 41,240 | | |
| | <i>Shallow Well</i> | 60,900 | N/A | N/A | 4,060 | | |
| | <i>Spring Development</i> | 670,300 | N/A | N/A | 44,690 | | |
| | 71,200 | | | | | | |
| Sanitation | <i>Household Toilet</i> | | | | | | |
| | Flush | 21,300 | N/A | N/A | 21,300 | | |
| | Pour Flush | 13,000 | N/A | N/A | 13,000 | | |
| | VIP Latrine | 6,600 | N/A | N/A | 6,600 | | |
| | <i>Public School Toilet</i> | 274,100 | 250 | N/A | 1,100 | N/A | |
| | <i>Public Toilet</i> | 344,100 | N/A | N/A | N/A | N/A | |
| | 7,300 | | | | | | |
| <i>Urban Sewerage</i> | | | | | | | |
| <i>Disinfection of Level I Wells</i> | 70 | | | | | | |

- Public school toilet:

Unit cost for one facility with 5 toilet bowls to cover 250 served students.

- Public toilet:

Unit cost for one facility with 6 toilet bowls.

- Well disinfection:

Unit disinfection cost per well based on DOH standard cost. The unit cost shall be applied to all existing and new wells once a year.

Urban Sewerage:

- Unit cost per served population. Preliminary estimates derived from the Philippine National Urban Sewerage and Sanitation Strategy and Feasibility Studies report.

(2) Unit Cost of Equipment

Unit cost of equipment shown in Table 10.2.2 was prepared based on the standard unit cost and recent procurement experience of the relevant sector agencies (details are referred to Supporting Report).

Table 10.2.2 Unit Cost of Equipment and Vehicle

| Name of Equipment | Unit Cost (Peso 1,000) |
|---------------------------------------|------------------------|
| Truck-mounted rotary drilling rig | 32,314 |
| Truck-mounted percussion drilling rig | 25,582 |
| Well rehabilitation equipment | 280 |
| Service truck with crane | 1,200 |
| Support vehicle (Pick-up with winch) | 590 |
| Refuse collection truck | 2,057 |

(3) Sector Management Cost

Sector management cost consists of:

- Engineering studies (F/S, D/D and construction supervision) for water supply, public toilet and school toilet facilities.
- Community development and training including health & hygiene education and logistic support.

Cost of engineering studies was estimated based on the fixed percentages to the total construction cost; 9% for F/S and D/D and 4% for construction supervision.

Community development and training with logistic support was also estimated on the same manner; 12% of respective construction costs for rural water supply and sanitation, and 3% of construction cost for urban water supply.

(4) Recurrent cost

Recurrent cost was estimated for water supply and sanitation (school and public toilets) facilities to cover the regular operating cost and the cost for spare parts and equipment replacement based on the following cost assumptions, while household toilet is assumed to be maintained by the owner.

Regular operating cost normally includes salaries of operation staff, electricity, fuel and chemicals. Due to the nature of this cost, it is only applied to urban water supply (Level III system). As a typical unit cost being applied to preparation of PW4SP referring to LWUA data, 365 Pesos/household/year was employed.

Cost for spare parts and equipment replacement was considered by different service level as described below.

Level III system:

- Mechanical and electrical equipment has normally a life cycle of 8 to 12 years and is considered in depreciation cost, i.e., 10% per annum. Assuming that the equipment cost comprise 10% of construction cost, annual depreciation will be 1% of the construction cost.
- Accordingly, cost of spare parts was assumed to be 10% of the equipment cost or equivalent to 1% of the construction cost.
- As a whole, 2% of the construction cost was applied for the cost of spare parts and equipment replacement.

Level II system:

- Operation and maintenance (O&M) cost of Level II system utilizing spring sources includes minor repair of pipeline and communal faucets (1% of the direct cost) and salaries of maintenance staff.
- A unit cost of 180 Pesos/household/year was assumed for cost estimates.

Level I system:

- O&M cost of Level I facility simply includes spare parts of handpump and caretaker.
- A unit cost of 100 Pesos/household/year was assumed for cost estimates.

School and public toilets:

- O&M cost includes the salaries of maintenance staff, cost of pumping sludge from septic tanks (periodically) and rehabilitation cost (for depreciation).
- For cost estimates, 5% of the construction cost was applied per facility per year.

Management cost:

- Management cost of water supply, sewerage and sanitation sector is part of the cost required for public services of LGUs mainly consisting of salaries of officers and workers and normally included in the annual budget of each LGU. The rest of management cost, such as equipment for information processing and dissemination was considered as part of logistic support under the sector management cost. Owing to the nature of this cost item, the management cost pertaining to salaries of officers/workers depends largely on the population size and institutional set-up of each LGU.
- Management cost was not estimated in this PW4SP considering the above mentioned reasons.

10.3 Cost of Required Facilities and Equipment

10.3.1 Cost of Required Facilities

The construction cost of required facilities as public investment of LGUs was summarized in Table 10.3.1 by sub-sector by municipality for target years. In this regard, the construction cost of household toilets is limited to the procurement and distribution of toilet bowl for pour-flush type toilets as being implemented by DOH under the FW4SP (refer to over-all construction cost requirements, Supporting Report).

During the medium-term development period, a total of 266 million Pesos will be required for construction of required facilities. Of the requirements, urban water supply and rural water supply will share 42% and 28%, respectively. While, remaining 30% will be required for urban and rural sanitation.

Table 10.3.1 Construction Cost of Required Facility by Municipality

Unit: P.1,000

| Name of Municipality | Phase I (2003) Requirements | | | | | | | | | | Phase I (2010) Requirements | | | | | | | | | | | |
|-------------------------|-----------------------------|---------------|----------------|---------------|---------------|----------------|----------------|----------------|---------------|------------------|-----------------------------|----------------|----------------|----------------|------------------|-----------|-------------|--------------|------------|-----------|--|--|
| | Urban Area | | | | | Grand Total | Rural Area | | | | | Urban Area | | | | | Grand Total | Rural Area | | | | |
| | Water Supply | Sanitation | Sub-total | Water Supply | Sanitation | | Sub-total | Water Supply | Sanitation | Sub-total | Water Supply | Sanitation | Sub-total | Water Supply | Sanitation | Sub-total | | Water Supply | Sanitation | Sub-total | | |
| Banga | | 274 | 274 | 8,921 | 1,964 | 10,885 | 11,159 | 50,064 | 1,096 | 58,291 | 109,451 | 35,539 | 20,528 | 56,067 | 165,518 | | | | | | | |
| Koronadal (Capital) | 17,974 | 1,096 | 19,071 | | 1,211 | 20,282 | 20,282 | 208,735 | 6,240 | 291,547 | 506,523 | 32,710 | 20,087 | 52,797 | 559,320 | | | | | | | |
| Lake Sebu | 18,275 | 3,264 | 21,539 | 20,735 | 15,080 | 35,815 | 57,354 | 26,451 | 2,134 | 52,414 | 80,999 | 35,454 | 22,082 | 57,536 | 138,536 | | | | | | | |
| Norala | | 3,191 | 3,191 | | 1,401 | 4,592 | 4,592 | 63,773 | 1,919 | 116,917 | 182,608 | 7,510 | 5,763 | 13,273 | 195,881 | | | | | | | |
| Polomolok | | 4,252 | 4,252 | 3,825 | 3,400 | 7,225 | 11,477 | 111,599 | 6,557 | 241,331 | 359,487 | 53,222 | 19,202 | 72,424 | 431,911 | | | | | | | |
| Santo Niño | 8,267 | 12 | 8,279 | 268 | 26 | 294 | 8,573 | 49,578 | 1,396 | 68,503 | 119,478 | 12,338 | 7,513 | 19,851 | 139,329 | | | | | | | |
| Surallah | 9,430 | 3,299 | 12,729 | | 5,572 | 5,572 | 18,301 | 76,235 | 2,537 | 112,683 | 191,455 | 23,883 | 17,048 | 40,931 | 232,386 | | | | | | | |
| Tampakan | 9,576 | 1,451 | 11,027 | | 2,369 | 2,369 | 13,396 | 31,645 | 1,118 | 47,399 | 80,162 | 5,582 | 8,908 | 14,490 | 94,653 | | | | | | | |
| Tantangan | 7,821 | 354 | 8,175 | 1,073 | 1,002 | 2,075 | 10,250 | 28,605 | 1,166 | 41,026 | 70,797 | 13,143 | 8,105 | 21,248 | 92,045 | | | | | | | |
| T'Boli | 35,135 | 5,066 | 40,202 | 39,350 | 17,518 | 56,868 | 97,069 | 47,328 | 2,607 | 102,207 | 152,142 | 46,455 | 29,151 | 75,606 | 227,748 | | | | | | | |
| Tupi | 5,633 | 1,459 | 7,092 | 2,341 | 4,848 | 7,189 | 14,281 | 27,862 | 1,441 | 45,457 | 74,760 | 21,883 | 15,965 | 37,848 | 112,608 | | | | | | | |
| Provincial Total | 112,112 | 23,718 | 135,829 | 76,512 | 54,392 | 130,904 | 266,733 | 721,876 | 28,212 | 1,177,775 | 1,927,862 | 287,719 | 174,353 | 462,072 | 2,389,934 | | | | | | | |

10.3.2 Cost of Required Equipment and Vehicle

The procurement cost of required equipment was estimated as shown in Table 10.3.2 (details are referred to Supporting Report), however, in this PW4SP, one set of well rehabilitation equipment and one unit of support vehicle shall be incorporated in the medium-term investment plan (Phase I). While one set of truck-mounted drilling rig shall be procured by the province in long-term development plan (Phase II) considering budgetary constraints and technical capability.

Table 10.3.2 Cost of Equipment and Vehicle

| Name of Equipment | Unit Cost (₱ 1,000) | Quantity (set) | Cost (₱ 1,000) |
|---------------------------------------|------------------------|-------------------|-------------------|
| Truck-mounted rotary drilling rig | 32,314 | 0 | 0 |
| Truck-mounted percussion drilling rig | 25,582 | 4 | 102,328 |
| Well rehabilitation equipment | 280 | 1 | 280 |
| Service truck with crane | 1,200 | 4 | 4,800 |
| Support vehicle (Pick-up with winch) | 590 | 1 | 590 |
| Refuse collection truck | 2,057 | 11 | 22,627 |
| Total Equipment Cost | | | 130,625 |

Note: Truck-mounted rotary drilling rig is not applicable based on water source study.

N.A: Not applicable

Aside from the above, one set of maintenance tools and one set of water quality testing kits shall be provided to all municipalities for O&M of Level I facilities (details are referred to Supporting Report).

10.3.3 Cost for Laboratory

Required cost for a new laboratory including building/facility and instruments/chemicals is estimated at 1,585,800 Pesos and additional cost for upgrading of existing laboratory is estimated at 445,800 Pesos (details are referred to Supporting Report).

10.4 Recurrent Cost

Recurrent cost is estimated in 1997 price level as a provincial total of each sub-sector covering existing facilities and additional facilities to be constructed during the medium-term development as shown in Table 10.4.1.

In the year 2003, the recurrent cost will increase to 32.9 million Pesos/year from 23.4 million Pesos/year in 1997, which is 41% increase from the base year corresponding to the implementation of the medium-term development.

Table 10.4.1 Recurrent Cost

Unit: P 1,000

| Sector Component | Item | Base Year Existing Facilities | 1999 | 2000 | 2001 | 2002 | 2003 | Total (1999-2003) |
|-----------------------------|---|-------------------------------|---------------|---------------|---------------|---------------|---------------|-------------------|
| Urban Water Supply | Operating Cost | 5,126 | 5,126 | 5,381 | 6,265 | 6,948 | 7,403 | 31,323 |
| | Spare Parts Equipments | 4,423 | 4,423 | 4,816 | 5,406 | 5,995 | 6,388 | 27,028 |
| Rural Water Supply | Spare Parts Equipments for Level II System | 1,632 | 1,872 | 2,112 | 2,112 | 2,112 | 2,112 | 10,321 |
| | Spare Parts Equipments for Level I Facilities | 5,269 | 5,269 | 5,469 | 5,769 | 6,068 | 6,268 | 28,843 |
| Sanitation | Public School Toilets | 6,432 | 6,432 | 7,158 | 8,249 | 9,339 | 10,066 | 41,243 |
| | Public Toilets | 555 | 555 | 585 | 630 | 675 | 705 | 3,150 |
| Total Recurrent Cost | | 23,436 | 23,676 | 25,722 | 28,430 | 31,137 | 32,943 | 141,908 |