

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 decision to be established as these will invariably affect local financing mechanisms.

In the long-term, the Provincial Sector Trust Fund approach (Fig. 9.2.2) may be an additional mechanism for financing project-related activities. This Trust Fund can be the transition arrangement as the line departments gradually reduce their direct control over sector funds. The Trust Fund could also raise the LGUs responsibility for effective and efficient utilization of these funds. The Trust Fund may be regularly replenished by the line departments upon liquidation. The controlling device at the national level will be in the replenishment of the trust fund. If the results are not satisfactory, national government should be able to institute changes as conditions to fund replenishment. Reviews can be done regularly. This arrangement is subject to agreement with respective line departments.

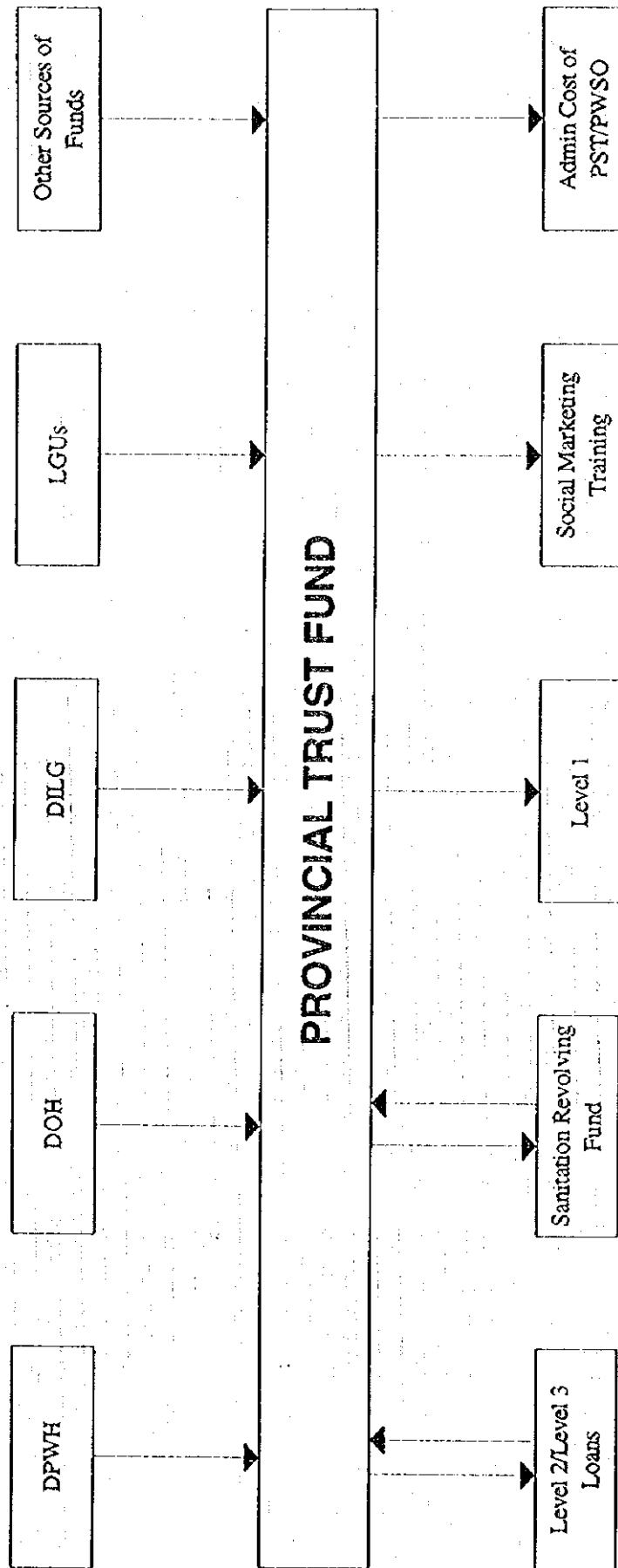
To support sanitation activities, housing improvement loans for installing in-house sanitary facilities should be studied and instituted by the LGU. Such a mechanism can be organized with the rural banks or the existing credit cooperatives. Seed funding for this revolving fund also needs to be raised.

Upon agreement by the parties, the enabling local legislation establishing the Trust Fund and the sanitation revolving fund will have to be enacted.

9.3 Institutional Arrangements

In the medium-term, a full-time Provincial Sector Team (PST) for coordination and institution-building shall be set up. The LGU should ensure that adequate logistics and incentives are provided. This Team may be supplemented by staff detailed full-time from national and local agencies, as needed. In the long term, the core group from the Team will form a new Provincial Water and Sanitation Office (PWSO). The PWSO will continue to promote, assist and monitor all water supply and sanitation services in cooperation with the municipalities. The DILG-PMO shall continue to provide technical and managerial assistance in the formative years of the PST/PWSO.

Figure 9.2.2 Flow of Funds



With the on-going discussions, it is not entirely clear at this time, how the water supply development capacity at the DPWH-DEO may be harnessed. One scenario is for the DEO to provide technical services at cost and in competition with other private contractors. Another scenario might call for the actual transfer of resources (equipment and staff) to the LGU. Policy decision and guidelines will be taken shortly at the national level.

The initial professional-level staffing of the PST/PWSO are estimated 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. DILG will assist in preparing the shortlist of candidates for PST/PWSO Coordinator. 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 Provincial Sector Team. He 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. He/she 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 PST/PWSO; 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 PWSO.

(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 PST/PWSO 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 PST/PWSO, 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 PST/PWSO. 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 and staff. 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. Further national policy guidelines will be issued by NEDA and the Office of the President.

9.4 Project Management Arrangements

(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 PST/PWSO 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.

(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. (See 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 are community decisions.
- 2) Organization: There are several viable Level III models which may be adopted: the Water District Concept; an LGUs-managed system; a cooperative-run system; or a privately-owned and managed system. 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 and 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 Models

Policy: The LGU views community development and involvement principally as regular multisectoral activities, not project-related activities. This implies the need for the LGU to establish an institutional mechanism at the provincial and municipal levels to enhance trust and confidence of communities to the LGU and its ability and motivation for provision of vital services. Community management of the systems is a vital element for sustainability of the facilities. Communities are viewed not merely as beneficiaries but as decision makers for critical aspects of local projects. Communities will be encouraged to collectively take stock of their resources and constraints and agree on a development program.

The LGU will review the roles and responsibilities of central and local governments, NGOs, the private sector and communities themselves. It shall assess community participation activities and related institutional arrangements of past community projects and constantly look into creative ways to promote and enable local participation.

The LGU shall promote the participation of NGOs to catalyze the involvement of women, youth, people's voluntary organizations (PVOs) and other segments of the community in project decision-making and management. It will focus on the role of women in the context of the design of institutional arrangements at all service levels. The review shall include: brief overview of women's socio-economic situation and their role in water and sanitation services; analysis of relevant NGOs, women's groups and private agencies that support community; and assessment of support action for women's participation essential for project sustainability.

For specific sector projects, the LGU will adopt a three-phase community involvement model. The model will outline the decision and action points, for which community inputs will be sought. These inputs are categorized according to the Pre-Construction Phase, the Construction Phase and the Post-Construction Phase.

Responsibilities: At the municipal level, the Municipal Sector Liaison will play a leading role in ensuring involvement of the beneficiaries at all phases of the project. The Community Development and Training Specialist of the municipality trained by PST/PWSO will provide technical assistance and advice.

One of the key activities in the PW4SP preparation is the formulation of viable models to promote community development in the projects. Each one model for Level I, II and III service was formulated based on socio-economic profiles, service needs and experience in selected communities. It is important to have a clear sequence (a strategy) to enable the communities to participate in the project through all the process.

Three sites were selected based on a set criteria which includes: needs, health situation, source availability, accessibility, potentials for replication, etc. The sites selected for the province are outlined in the table below; full write-up of the case is included in 9.5 Supporting Report.

Table 9.5.1 Summary of Community Development Study Sites

Model Study Site	Proposed Service Level	Urban or Rural	Potential Service Area		Potential Water Source	Sanitation Issues
			Population	Households		
Purok Calawang, Bgy. Guinobatan, Catapan	I	R	400	80	Deep Well	Yes
Purok Silanagn, Bgy. Loyal, Victoria	II	R	545	200	Spring or Deep Well	No
Bgy. Masagana & Evangelista, Naujan	III	R	1,200	350	Spring &/or Deep Well	No

(I) For Level I facilities, community involvement and participation shall be promoted in the following manner.

1) Pre-Construction Phase

- (a) Dissemination of information
- (b) Establishment (or selection) of barangay or purok association and of the working relationships with other agencies
- (c) Election of officials

- (d) Assistance for the selection of potential water sources
- (e) Agreement on O&M arrangements
- (f) Computation and approval of water charges
- (g) Preparation of work plan
- (h) Agreement to proceed the project
- (i) Assistance for the selection of contractor/s
- (j) Securing right-of-way (deed of donation or permit to use) for facility sites

2) Construction Phase

- (a) Provision of labor counterpart
- (b) Provision of materials
- (c) Dissemination of information
- (d) Inspection and feedback of the project activities
- (e) Provision of access to the contractor/s

3) Post-Construction Phase

- (a) Payment/collection of fees; fund-raising activities
- (b) Getting water samples regularly for quality testing
- (c) Preventive maintenance
- (d) Minor repair and parts replacement
- (e) Dissemination of health and hygiene information
- (f) Auditing of finances
- (g) Attendance in community meetings
- (h) Provision of adequate source protection, including maintenance of drainage to protect well site from contamination
- (i) Formulation of future improvement plans
- (j) Approval of major capital or rehabilitation budgets
- (k) Collection and provision of information as requested by the RIU or MSL
- (l) Preparation/maintenance of the barangay or site maps

(2) For Level II facilities

1) Pre-Construction Phase

- (a) Establishment of barangay or purok arrangements and working relationships with other agencies
- (b) Identification and selection of potential water sources
- (c) Identification of the location of communal faucets
- (d) Agreement to proceed the project

- (e) Dissemination of information
 - (f) Election of officials
 - (g) Agreement on O&M arrangements
 - (h) Computation and approval of water charges
 - (i) Preparation of work plan
 - (j) Securing right-of-way (deed of donation or permit to use) for facility sites
 - (k) Selection of local contractor/s
- 2) Construction Phase
- (a) Provision of labor counterpart
 - (b) Provision of materials
 - (c) Dissemination of information
 - (d) Inspection and feedback of the project activities
 - (e) Provision of access to contractor/s
- 3) Post-Construction Phase
- (a) Payment/collection of fees; fund-raising activities
 - (b) Getting water samples regularly for quality testing
 - (c) Formulation of improvement plans
 - (d) Preventive maintenance including cleaning of storage tank/s
 - (e) Dissemination of health and hygiene information
 - (f) Preparation/maintenance of the barangay maps
 - (g) Auditing of finances
 - (h) Attendance in community meetings
 - (i) Source protection measures
 - (j) Approval of major capital or rehabilitation budgets
 - (k) Minor repairs and parts replacement including leak repairs
 - (l) Collection and provision of information as requested by the RHU or MSL
 - (m) Safe disposal of wastewater
- (3) For Level III facilities
- 1) Pre-Construction Phase
- a) Attend public hearings and briefings on formation of institutional arrangements (WD, cooperative, etc.) for the proposed improvement project
 - b) Dissemination of information
 - c) Assistance in securing right-of-way (deed of donation or sale or permit to use) for facility sites

- 2) Construction Phase
 - (a) Dissemination of information; road traffic control, etc
 - (b) Feedback on construction progress
 - (c) Provision of access to contractor/s
 - (d) Installation of in-house plumbing and sanitation facilities
- 3) Post-Construction Phase
 - (a) On-time payment of water bills
 - (b) Prompt reporting of leaks and illegal connections
 - (c) Conservation of water
 - (d) Dissemination of health and hygiene information
 - (e) Attendance in further public consultation meetings
 - (f) Assistance in campaigns for new service connections
 - (g) Safe disposal of wastewater

9.6 Human Resources Development and Training

Policy: 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) 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 which 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., feedback.
- 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 deficiencies can be solved by training alone. 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.

- (3) **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.

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 PST/PWSO 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 have been 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 is assisting 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. Detailed policies of the LGU will be discussed.
 - (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 practiced 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 have 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 PST/PWSO 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 liaison staff will participate in these programs. They should be organized by the PST/PWSO; 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. This will be organized by the DILG.
- (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.

(4) 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 practices 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 CDTSs 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 has 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. 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 at 1995 price level (refer to Supporting Report).

Recurrent cost was also included in this Chapter taking into account 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 prepared based on the current standard unit cost of relevant sector agencies and typical standards developed for this PW4SP as contract-out basis at 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 1994 to 1995 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

(detailed 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 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.

Rural water supply:

- Unit cost for four types of Level I wells (shallow well at 20 m in depth and deep wells at 40, 80 and 120 m in depth).
- Unit cost for Level II system to cover 600 served population.

Sanitation:

- Household toilet:
Unit cost for three types of sanitary toilets (flush, pour-flush and VIP) to cover one served household in urban and rural areas. Cost of flush toilet includes costs for demolition, water closet, water line and a superstructure made of durable construction materials.
- 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.
To be applied to all existing and new wells once a year.

Table 10.2.1 Unit Cost of Facilities by Type and Service Level

Description	Urban Water Supply (Level III)						Rural Water Supply Level I						Sanitation						
	New System		Expansion		Level II	Shallow Wells	Deep Well		Flush	Four Flush	Household Toilet		Public Toilet		Disinfection of Level I Wells	Urban Sewerage			
	5,000 Population	10,000 Population	15,000 Population	5,000 Population			10,000 Population	15,000 Population			40 m	80 m	120 m	VIP Latrine			School Toilet	Public Toilet	
	20,087,250	30,418,750	45,443,750	18,456,250	28,793,750	43,818,750	607,263	154,300	255,100	370,100	28,700	36,300	13,100	8,300	293,600	313,200	70	N.A.	
Unit Construction Cost per Facility (Pesos)	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
Service Coverage	1,000	2,000	3,000	1,000	2,000	3,000	120	15	15	15	1	1	1	1	N.A.	N.A.	N.A.	N.A.	
Unit Cost	4,000	3,000	3,700	3,700	2,900	2,900	1,000	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	7,300	
Rehabilitation Cost of Level I Deep Well (Pesos)	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	10,300	17,000	24,700	1,900	36,300	13,100	8,300	N.A.	N.A.	N.A.	N.A.	N.A.
	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	33,700			N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.

Table 10.2.2 Unit Cost of Equipment and Vehicle

Name of Equipment	Unit Cost (Peso 1,000/set)
Truck-mounted rotary drilling rig	17,370
Truck-mounted percussion drilling rig	10,280
Well rehabilitation equipment	138
Service truck with crane	1,175
Support vehicle (Pick-up with winch)	500
Refuse collection truck	1,380

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 as reference information based on the standard unit cost and recent procurement experience of the relevant sector agencies (details are referred to Supporting Report).

(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) Contingency cost

Contingency cost covers both physical and price contingencies for water supply and sanitation facilities. Physical contingency is assumed to be 15% that of the direct construction cost and sector management cost. Price contingency is assumed to be 10% that of direct cost and physical contingency.

(5) Recurrent cost

Recurrent cost was estimated for water supply and school and public toilet 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 existing PW4SPs referring to L.WUA 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 repair/replacement of pipelines and communal faucets and salaries of maintenance staff.
- A unit cost of 100 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 50 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 a 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 the 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 toilets as being implemented by DOH under the FW4SP (refer to overall construction cost requirements, Supporting Report).

Table 10.3.1 Construction Cost of Required Facilities by Municipality

Unit: 1,000 Pesos

Municipalities	Phase I (2000) Requirements							Phase II (2010) Requirements							
	Urban Area			Rural Area			Grand Total	Urban Area			Rural Area			Grand Total	
	Water Supply	Sanitation	Sub-total	Water Supply	Sanitation	Sub-total		Water Supply	Sanitation	Sewerage	Sub-total	Water Supply	Sanitation		Sub-total
Baco	616	636	1,252	316	1,552	1,868	3,120	9,106	31	0	9,137	10,923	5,069	15,992	25,129
Bansud	3,212	1,085	4,297	11,368	3,280	14,648	18,945	16,717	984	0	17,701	11,209	5,194	16,403	34,104
Bongabong	6,192	340	6,532	44,426	6,675	51,101	57,633	14,079	1,637	0	15,116	29,436	11,269	40,705	55,821
Bulalacao	7,952	386	8,338	29,357	2,418	31,775	40,113	5,269	464	0	5,733	9,891	4,883	14,774	20,507
Calapan (Capital)	12,658	2,889	15,547	6,783	3,875	10,658	26,205	71,459	6,972	199,173	277,604	7,027	10,136	17,163	294,767
Gloria	3,128	626	3,754	21,758	2,943	24,701	28,455	6,679	91	0	6,770	16,871	7,166	24,037	30,807
Mansalay	4,908	313	5,221	16,787	2,021	18,808	24,029	6,767	426	0	7,193	10,451	6,647	17,098	24,291
Naajan	2,890	668	3,558	39,260	8,079	47,339	50,897	14,038	889	0	14,927	40,521	15,914	56,435	71,362
Panamalayan	0	1,344	1,344	17,028	5,705	22,733	24,077	9,398	2,134	39,092	50,624	30,430	12,228	42,658	93,281
Pola	1,391	626	2,017	29,215	2,805	32,020	34,037	1,495	62	0	1,557	12,243	5,285	17,528	19,085
Puerto Galera	3,012	626	3,638	0	1,249	1,249	4,887	16,846	858	0	17,704	5,203	3,037	8,240	25,941
Roxas	2,938	313	3,251	10,766	3,779	14,545	17,796	13,146	830	0	13,976	10,931	6,995	17,976	31,952
San Teodoro	1,964	355	2,319	20,161	314	20,475	22,794	9,539	61	0	9,600	9,822	2,055	11,877	21,477
Socorro	4,940	771	5,711	24,984	3,725	28,709	34,420	16,927	1,105	0	18,032	14,445	6,496	20,941	38,973
Victoria	2,972	562	3,534	10,091	1,957	12,048	15,582	29,534	1,224	42,888	73,646	14,821	6,326	21,147	94,793
Provincial Total	58,773	11,540	70,313	282,300	50,377	332,677	402,990	240,999	17,168	281,152	539,319	234,274	108,700	342,974	882,293

Note: Cost for disinfection of wells is not included.

During the medium-term development period, a total of 403 million Pesos will be required for construction of required facilities. Of the requirements, 70% or 282 million Pesos will be necessary for rural water supply, while only 3% or 12 million Pesos will be for rural sanitation.

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)

Table 10.3.2 Cost of Equipment and Vehicle

Name of Equipment	Unit Cost (Peso 1,000)	Quantity (set)	Cost (Peso 1,000)
Hand-feed spindle type rotary drilling rig	1,000	6	6,000
Truck-mounted rotary drilling rig	17,370	11	191,070
Truck-mounted percussion drilling rig	10,280	16	164,480
Well rehabilitation equipment	138	1	138
Service truck with crane	1,175	27	31,725
Support vehicle (Pick-up with winch)	500	7	3,500
Refuse collection truck	1,380	10	13,800
Total Equipment Cost			410,713

10.4 Recurrent Cost

Recurrent cost is estimated at 1995 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 2000, the recurrent cost will increase to 19 million Pesos/year from 15 million Pesos/year in 1995, which is equivalent to 27% increase from the base year corresponding to the implementation of the medium-term development.

Table 10.4.1 Recurrent Cost

Unit: 1,000 Pesos

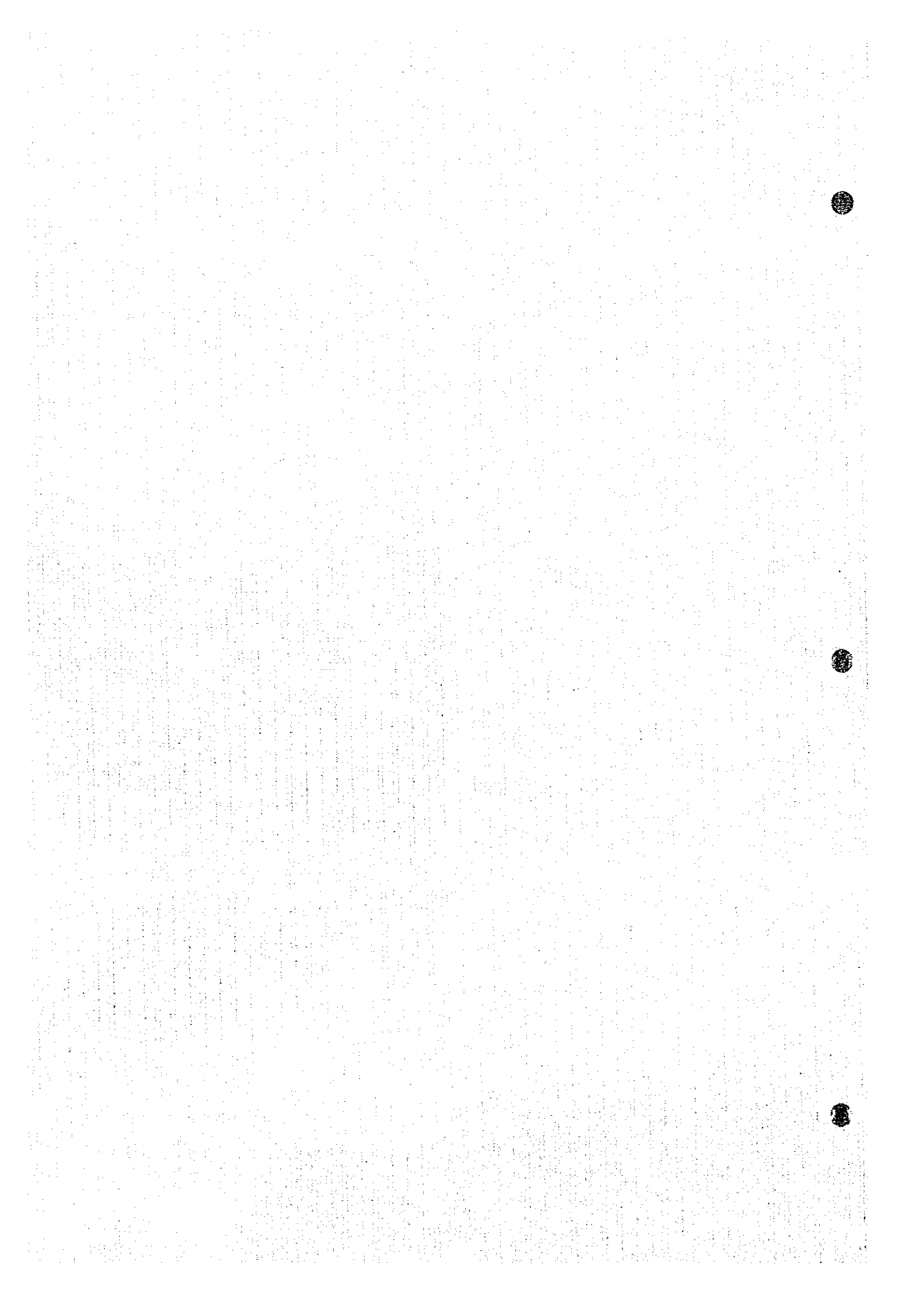
Sector Component	Item	Base Year Existing Facilities	1996	1997	1998	1999	2000	Total (1996-2000)
Urban Water Supply	Operating Cost	5,236	5,236	5,444	5,756	6,068	6,256	28,730
	Spare Parts/Equipment	4,410	4,410	4,645	4,998	5,350	5,585	24,989
Rural Water Supply	Level II	177	177	177	177	177	177	885
	Level I	2,917	3,095	3,420	3,746	4,072	4,397	18,730
Sanitation	Public School Toilets	2,282	2,297	2,325	2,353	2,380	2,408	11,763
	Public Toilets	195	227	287	346	406	465	1,731
Provincial Total		15,217	15,442	16,298	17,376	18,453	19,309	86,878

Note: Recurrent cost of each year includes that of base year existing facilities.



Chapter 11

FINANCIAL ARRANGEMENTS



11. FINANCIAL ARRANGEMENTS

11.1 General

Financial arrangements to attain medium-term (Phase I) target are sought taking account of potential funds. However, quantitative study is limited to the use of projected Internal Revenue Allotment (IRA). In this connection, this Chapter addresses to identify financial shortfall with reference to available IRA for this sector and to seek comprehensive logistics in terms of acquisition of various funds, augmentation of current practices in the Government assistance to this sector, and effective investments and cost recovery.

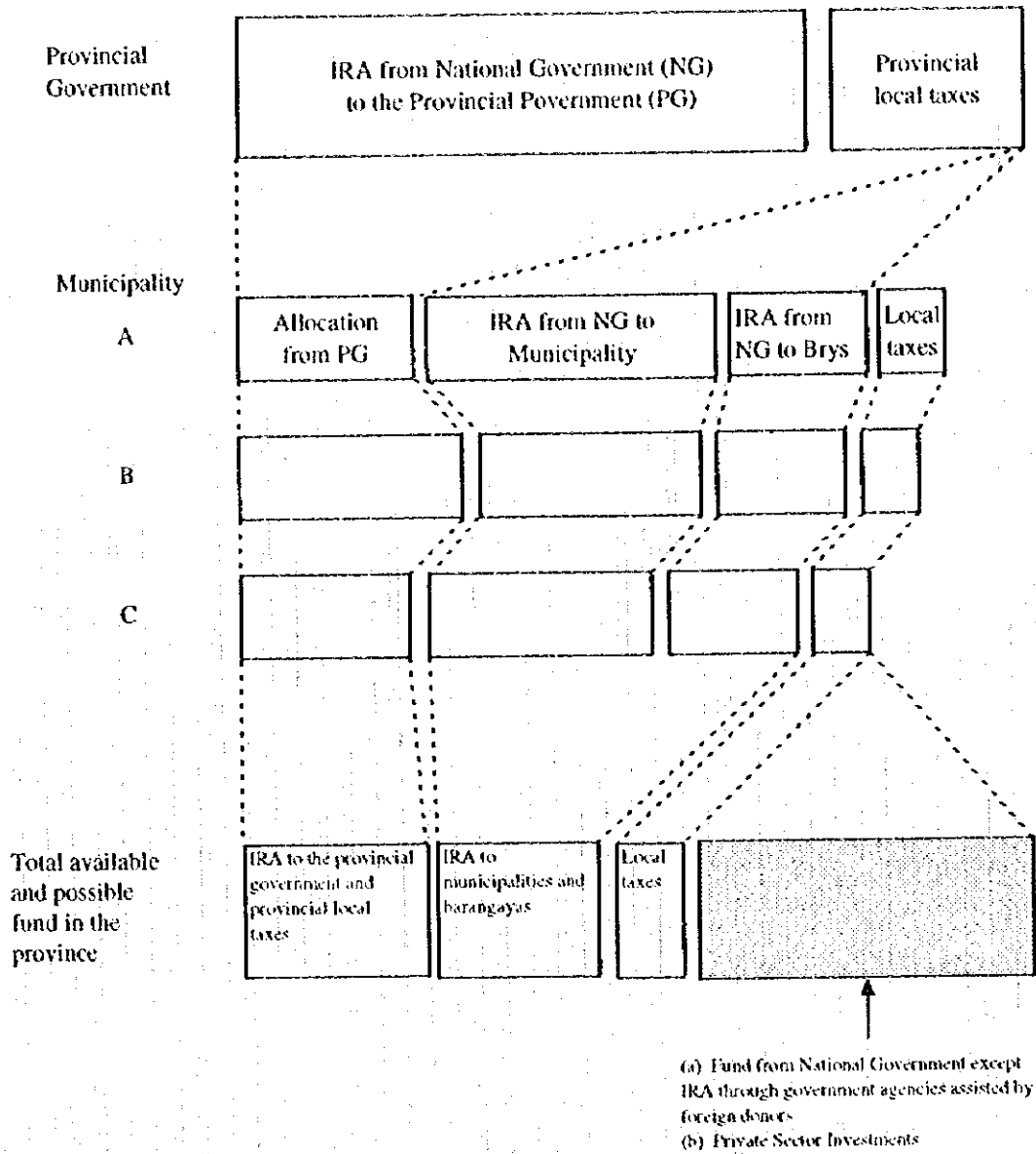
Available funds (IRA) during the medium-term development period are projected in use of computer-based programs that allow for the future application to include additional funds available. Figure 11.1.1 shows sector budget allocation in the different administrative levels to come up with total funds available in the province. Figure 11.1.2 illustrates manner of sector fund allocation to respective municipalities from the national and provincial governments with a detailed study flow availing IRA. Interfaces between provincial government and municipalities/barangays are also presented in the same figure.

Distribution of IRA to respective municipalities is contemplated in assumption of various factors based on the experiences as of 1994. However, the structure and application of IRA are under review by the national government. Accordingly, the study results on IRA are tentative and subject to change.

11.2 Projection of IRA

The projection of IRA to the relevant sector for Phase I period is made covering different administrative levels. Current manner of allocation by the national government is directed to three different governmental levels; province, municipality and barangay. Municipal fund available for this sector is calculated as a sum of municipal and provincial allotments. Figure 11.2.1 shows the calculation procedure with assumptions and Table 11.2.1 and 11.2.2 present the calculation results.

Figure 11.1.1 Sector Budget Allocation



Notes: (1) Budget from different sources in the figure above are those shared to water supply and sanitation sector from allotted amount for overall sectors.

(2) Shaded portion above is the potential fund source to be negotiated/arranged to meet target requirements.

Figure 11.1.2 GENERAL FLOW OF FINANCIAL ARRANGEMENTS FOR RELEVANT SECTOR DEVELOPMENT

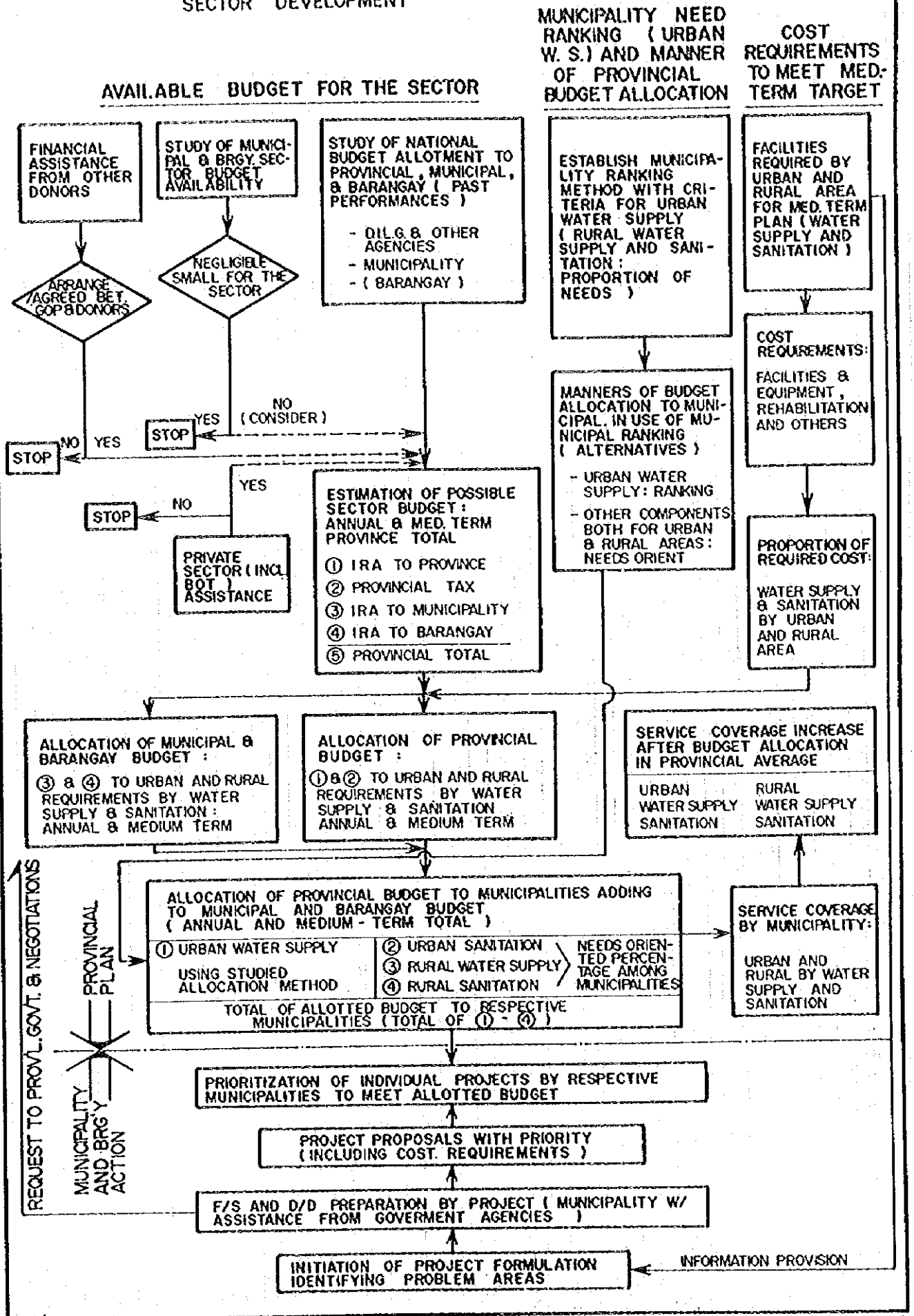
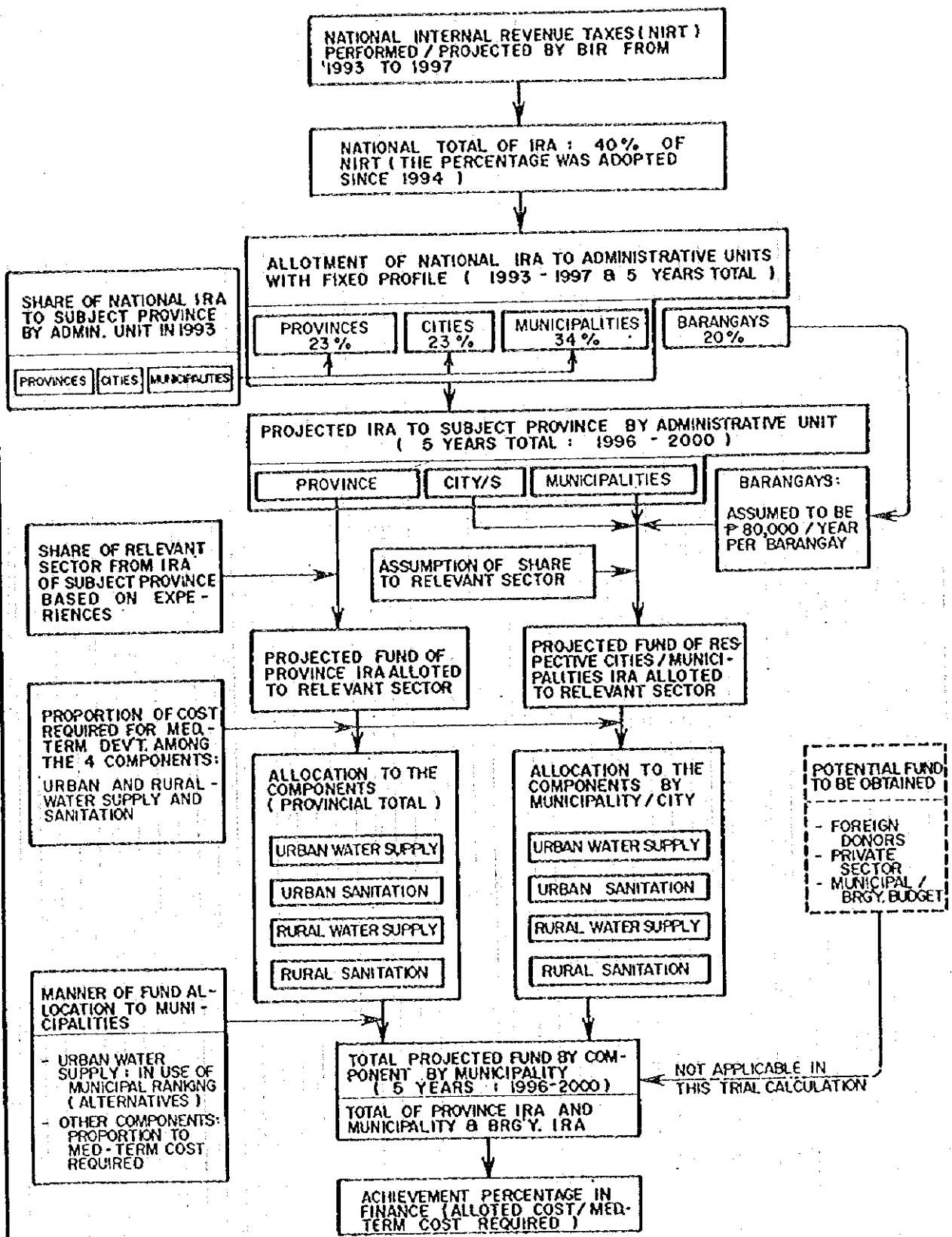


Figure 11.2.1 TRIAL ALLOCATION OF INTERNAL REVENUE ALLOTMENT (IRA) TO MUNICIPALITIES FOR RELEVANT SECTOR DEVELOPMENT



NOTE: BIR - BUREAU OF INTERNAL REVENUE (DOF)
 NIRT (1993 - 1997) IS THE BASIS OF NATIONAL TOTAL OF IRA (1996 - 2000)
 POTENTIAL FUND: NEEDS OF ADDITIONAL FUND ARE CONSIDERABLE, THUS REFERENCE INFORMATION IS SHOWN.

Table 11.2.1 Projected Internal Revenue Allotment for Medium-Term Sector Development

Unit: 1,000 Pesos

	1996	1997	1998	1999	2000	Total
1 40 % of Actual/Projected National Internal Revenue Taxes of the 3rd Fiscal Year preceding the current year	58,640,000	69,710,000	81,490,000	98,012,000	110,188,000	418,040,000
2 Internal Revenue Allotment to all LGUs						
(a) provinces (23%)	13,487,200	16,033,300	18,742,700	22,542,760	25,343,240	96,149,200
(b) cities (23%)	13,487,200	16,033,300	18,742,700	22,542,760	25,343,240	96,149,200
(c) municipalities (34%)	19,937,600	23,701,400	27,706,600	33,324,080	37,463,920	142,133,600
(d) barangays (20%)	11,728,000	13,942,000	16,298,000	19,602,400	22,037,600	83,608,000
(e) total LGUs	58,640,000	69,710,000	81,490,000	98,012,000	110,188,000	418,040,000
3 Projected IRA to Subject Province by Administrative Unit						
(a) province	166,473	197,899	231,341	278,246	312,812	1,186,771
(b) municipalities including barangays	273,050	321,156	369,709	437,806	487,990	1,889,710
Baco	14,627	16,981	19,485	22,998	25,587	99,678
Bansud	14,337	16,847	19,518	23,264	26,025	99,991
Bongabong	26,603	31,096	35,878	42,584	47,526	183,687
Bulalacao	14,265	16,731	19,356	23,037	25,749	99,138
Calapan (Capital)	30,826	35,708	40,905	48,192	53,563	209,194
Gloria	15,753	18,319	21,050	24,879	27,702	107,702
Mansalay	19,386	22,788	26,409	31,488	35,231	135,303
Naujan	33,232	38,448	43,999	51,785	57,522	224,987
Pinamalayan	23,288	27,140	31,240	36,990	41,228	159,886
Pala	12,977	15,079	17,317	20,455	22,767	88,594
Puerto Galera	11,807	13,839	16,002	19,035	21,271	81,954
Roxas	13,304	15,514	17,865	21,163	23,593	91,439
San Teodoro	12,931	15,251	17,720	21,183	23,736	90,822
Socorro	14,177	16,460	18,891	22,299	24,811	96,638
Victoria	15,539	20,953	24,074	28,453	31,679	120,699
(c) Provincial total	439,523	519,055	601,050	716,051	800,802	3,076,481
4 Projected fund of IRA to Relevant Sector by Administrative Unit						
(a) province	6,659	7,916	9,254	11,130	12,512	47,471
(b) municipalities including barangays	10,922	12,846	14,789	17,512	19,520	75,589
Baco	585	679	779	920	1,023	3,987
Bansud	573	674	781	931	1,041	4,000
Bongabong	1,064	1,244	1,435	1,703	1,903	7,347
Bulalacao	571	669	774	921	1,030	3,955
Calapan (Capital)	1,233	1,428	1,636	1,928	2,143	8,368
Gloria	630	733	842	995	1,108	4,308
Mansalay	775	912	1,056	1,260	1,409	5,412
Naujan	1,329	1,538	1,760	2,071	2,301	8,999
Pinamalayan	932	1,086	1,250	1,480	1,649	6,396
Pala	519	603	693	818	911	3,544
Puerto Galera	472	554	640	761	851	3,278
Roxas	532	621	715	847	944	3,658
San Teodoro	517	610	709	847	949	3,633
Socorro	567	658	756	892	992	3,866
Victoria	622	838	963	1,138	1,267	4,828
(c) Province Total	17,581	20,762	24,043	28,642	32,032	123,060

Sources:

(1) Bureau of Internal Revenue and Bureau of Local Government Finance, DOF, for the projection of National Internal Revenue Allotment

(2) JICA Study Team for other projections.

Table 11.2.2 Projected Allotment of IRA to the Relevant Sector by Component, 1996 -2000

Unit: 1000 Pesos

	Urban Water Supply	Rural Water Supply	Urban Sanitation	Rural Sanitation	Total
1. Province	7,121	33,230	1,424	5,697	47,471
2. Municipalities	13,730	46,476	3,553	11,829	75,589
Baco	787	404	813	1,983	3,987
Bansud	678	2,400	229	693	4,000
Bengabong	789	5,663	43	851	7,347
Bulalacao	786	2,902	38	239	3,965
Calapan (Capital)	4,042	2,166	923	1,237	8,368
Gloria	474	3,294	95	446	4,308
Mansalay	1,105	3,781	70	455	5,412
Naujan	511	6,942	118	1,428	8,999
Pinamalayan	0	4,524	357	1,516	6,396
Pola	145	3,042	65	292	3,544
Puerto Galera	2,020	0	420	838	3,278
Roxas	604	2,213	64	777	3,658
San Teodoro	313	3,213	57	50	3,633
Socorro	555	2,806	87	418	3,866
Victoria	921	3,127	174	606	4,828
3. Total	20,851	79,706	4,977	17,526	123,060

Calculation process is further described as follows:

(1) Projection of annual IRA to all LGUs in the Philippines from 1996 to 2000

The IRAs come from 40% of past and /or projected national internal revenue taxes from 1993 to 1997 (3rd fiscal year preceding the current year). This ratio is based on the Local Government Code in 1991.

(2) Distribution of national total IRA to each administrative unit

Based on the Local Government Code, IRA is distributed by administrative level as follows:

Provinces	23%
Cities	23%
Municipalities	34%
Barangays	20%

(3) Distribution of national total IRA to the subject province by provincial, municipal and barangay level

With reference to allocation of national IRA by administrative level, provinces and municipalities are based on weighted 3 factors; population, land area and number of administrative units. In this analysis, however, the distribution percentage experienced in 1993 is simply employed. (refer to Table 6.2.2, Main Report and Data Report.) Allotments to barangays are added to the IRAs for municipalities (80,000 peso times number of barangays).

(4) Projection of available IRA to the relevant sector by administrative unit of the province

According to the Provincial Annual Report in 1993, about 2.6% of provincial IRA was availed for the water supply and sanitation sector. Referring to the experiences in other province, provincial allocation to the relevant sector is assumed to be 4%. This means that 20% of "20% Development Fund" from national IRA is counted on sector projects. The same percentage is applied for the allocation of municipal IRA to the sector.

(5) Available IRA of municipalities by sub-sector

Available municipal fund for the four components (urban and rural water supply, and urban and rural sanitation) is estimated as a sum of respective components in combination of those allocated from the province and distributed in each municipality. Distribution of sector total fund to sub-components both in provincial and in municipal levels is arranged in proportion to the direct construction cost required for Phase I Development.

With regard to the distribution of provincial IRA for urban water supply to respective municipalities, weighing method with ranking is employed, which will be discussed in detail in Section 11.4. For other components, provincial IRA is distributed to municipalities in proportion to their required costs in Phase I.

11.3 Additional Funding Requirements

Annual cost required as the whole province during the medium-term development is summarized in Table 11.3.1 referring to the study results in Chapter 10. Details of implementation arrangements for annual investment are shown in Table 11.3.1, Supporting Report.

Table 11.3.1 Financing Requirements by Sector Component for the Province

Unit: 1,000 Pesos

Sector Components	1996	1997	1998	1999	2000	Total 1996-2000	Total 2001-2010
Direct Cost							
1. Direct Construction Cost							
Urban Water Supply							
Level III System	0	11,755	17,632	17,632	11,755	58,773	240,999
Rural Water Supply							
Level II System	0	0	0	0	0	0	0
Level I Facilities	33,876	62,106	62,106	62,106	62,106	282,300	234,274
Urban Sanitation							
Household toilet	80	146	146	146	146	663	4,360
Public school toilet	516	947	947	947	947	4,304	10,930
Public toilet	789	1,446	1,446	1,446	1,446	6,573	1,878
Disinfection of Level I Deep & Shallow Wells	29	53	53	54	54	241	0
Rural Sanitation							
Household toilet	1,894	3,472	3,472	3,472	3,472	15,782	47,559
Public school toilet	4,151	7,611	7,611	7,611	7,611	34,595	61,141
Disinfection of Level I Deep & Shallow Wells	202	370	370	370	370	1,680	7
Urban Sewerage						N.A.	281,152
Sub-total	41,536	87,905	93,782	93,783	87,906	404,911	882,300
2. Sector Management Cost							
Engineering Studies							
Feasibility Study and Detail Design	14,359	7,726	5,081	5,081	2,541	34,789	65,487
Construction supervision	1,649	3,493	3,729	3,729	3,493	16,093	35,117
Community Development and Training							
Institutional development & logistic support	9,616	9,440	9,440	9,440	5,133	43,069	83,662
Sub-total	25,625	20,660	18,250	18,250	11,167	93,951	184,266
Total Direct Cost	67,161	108,565	112,032	112,033	99,073	498,862	1,066,566
Contingencies							
1. Physical Contingency	10,074	16,285	16,805	16,805	14,861	74,829	159,985
2. Price Contingency	16,219	41,325	59,793	78,657	87,907	283,902	N.A.
Total Investment Cost	93,454	166,174	188,630	207,495	201,841	857,593	1,226,551

Note: Physical Contingency is 15%; Price Contingency is 10%.

Table 11.3.2 presents additional funding requirements of the province (or shortfall in funding), which are figured out comparing with available fund for the relevant sector (IRA) in the province over the Phase I requirements. Other funds, such as those provided by foreign assistance and local tax portion are kept blank to supplement upon confirmation of additional fund available. A big short fall of funding is identified since the IRA accounts for only 14.3% of the total cost requirements in Phase I.

Table 11.3.2 Additional Fund Requirements for the Medium-Term Plan

Unit: 1,000 Pesos

	1996	1997	1998	1999	2000	Total 1996-2000
Financing requirements	93,454	166,174	188,630	207,495	201,841	857,593
Expected available fund						
National	0	0	0	0	0	0
Local (IRA)	17,581	20,762	24,043	28,642	32,032	123,060
Others	0	0	0	0	0	0
Total	17,581	20,762	24,043	28,642	32,032	123,060
Shortfall in funding (Additional Fund Requirements)	75,873	145,412	164,587	178,853	169,809	734,533

Municipal achievement percentages in finance are shown in Table 11.3.3 in provision of available fund originated by IRA against Phase I financial requirements. The percentage of Baco is outstanding comparing to the provincial average of 14.3%. Others are in the range between 10 and 37% to the requirements.

Table 11.3.3 Internal Revenue Allotment for Water Supply and Sanitation Sector by Municipality (Medium-Term Development/1996-2000)

Unit: 1,000 Pesos

Municipality	IRA Allocation to Municipalities ¹												Total Allotted Amount to Municipality (a)	Total Cost Required for Municipality (b)	Achievement Percent-age (%) in Finance (a)/(b)
	Urban Water Supply			Rural Water Supply			Urban Sanitation			Rural Sanitation					
	Allotted from Provincial Government ²	Allotted from Municipality	Total	Allotted from Provincial Government	Allotted from Municipality	Total	Allotted from Provincial Government	Allotted from Municipality	Total	Allotted from Provincial Government	Allotted from Municipality	Total			
Baco	524	787	1,311	37	404	441	78	813	891	176	1,983	2,159	4,802	6,640	72.3
Bansud	356	678	1,034	1,338	2,400	3,739	134	229	363	371	693	1,063	6,199	40,316	15.4
Bongabong	759	789	1,548	5,229	5,663	10,893	42	43	85	755	851	1,606	14,132	122,647	11.5
Bulalacao	759	786	1,545	3,456	2,902	6,357	48	38	86	273	239	512	8,501	85,364	10.0
Calapan (Capital)	356	4,042	4,398	798	2,166	2,964	357	923	1,279	438	1,237	1,676	10,317	55,766	18.5
Gloria	759	474	1,233	2,561	3,294	5,855	77	95	172	333	446	778	8,038	60,555	13.3
Mansalay	759	1,105	1,865	1,976	3,781	5,757	39	70	109	229	455	684	8,414	51,136	16.5
Naujan	356	511	867	4,621	6,942	11,563	82	118	201	914	1,428	2,342	14,972	108,312	13.8
Pinamalayan	0	0	0	2,004	4,524	6,528	166	357	523	645	1,516	2,161	9,212	51,238	18.0
Pola	356	145	501	3,439	3,042	6,481	77	65	142	317	292	609	7,733	72,434	10.7
Puerto Galera	356	2,020	2,376	0	0	0	77	420	497	141	838	979	3,852	10,400	37.0
Roxas	356	604	960	1,267	2,213	3,481	39	64	103	427	277	1,204	5,748	37,871	15.2
San Teodoro	356	313	669	2,373	3,213	5,586	44	57	100	36	50	86	6,411	48,507	13.3
Socorro	356	555	911	2,941	2,806	5,747	95	87	182	421	418	840	7,679	73,247	10.5
Victoria	712	921	1,633	1,188	3,127	4,314	69	174	243	221	606	828	7,018	33,159	21.2
Total	7,121	13,730	20,851	33,230	46,476	79,706	1,424	3,553	4,977	5,697	11,829	17,526	123,060	857,592	14.3

Notes:

- (1) Potential Funds through foreign donors and others are not included.
- (2) Provincial IRA of urban water supply to municipalities is distributed according to the ranking arrangement. Others are distributed in proportion to their required costs.

11.4 Medium-Term Implementation Arrangements

Financial requirements to meet Phase I target coverage are substantial. However, projected fund available (IRA) in application of past trend revealed that considerable amount of additional fund must be arranged.

Under this situation reference scenarios are discussed in assumption of different levels of funding availability with reference to service coverage. Alternative countermeasures are also discussed in view of (1) acquisition of external funds, (2) augmentation of sector finance under current arrangements (IRA and others), (3) introduction of private sector to mitigate public investment needs, and (4) effective and economical investments.

11.4.1 Reference Scenarios in Different Funding Levels

Achievement levels of service coverage in the target year are examined in assumption of five funding levels. It is regarded that the service coverage is increased in proportion to the investment during Phase I period. The relationships between funding levels and corresponding percentages of service coverage are illustrated in Figure 11.4.1 and Figure 11.4.2 for water supply and sanitation sectors, respectively. It is common to all sub-sectors that the service coverage in 2000 would not sustain even the present levels in the provision of only projected IRA.

Three reference scenarios are discussed on different levels of funding. These scenarios will be referred to in combination of alternative countermeasures discussed in Section 11.4.2. Using computer-based programs, these scenarios may be modified by policy makers according to the updated information and policy on available fund and sector targets.

(1) The First Reference Scenario

No funding constraints is considered in this scenario to realize Phase I development as planned. This scenario is too optimistic based on the past experiences.

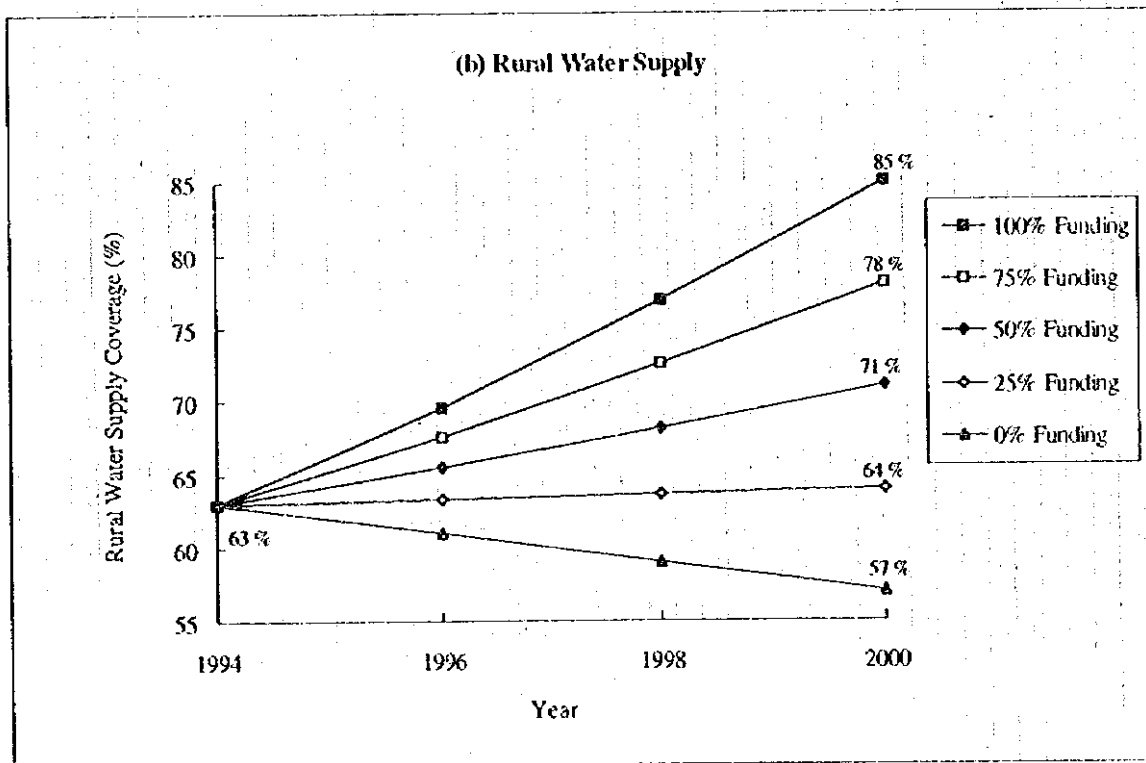
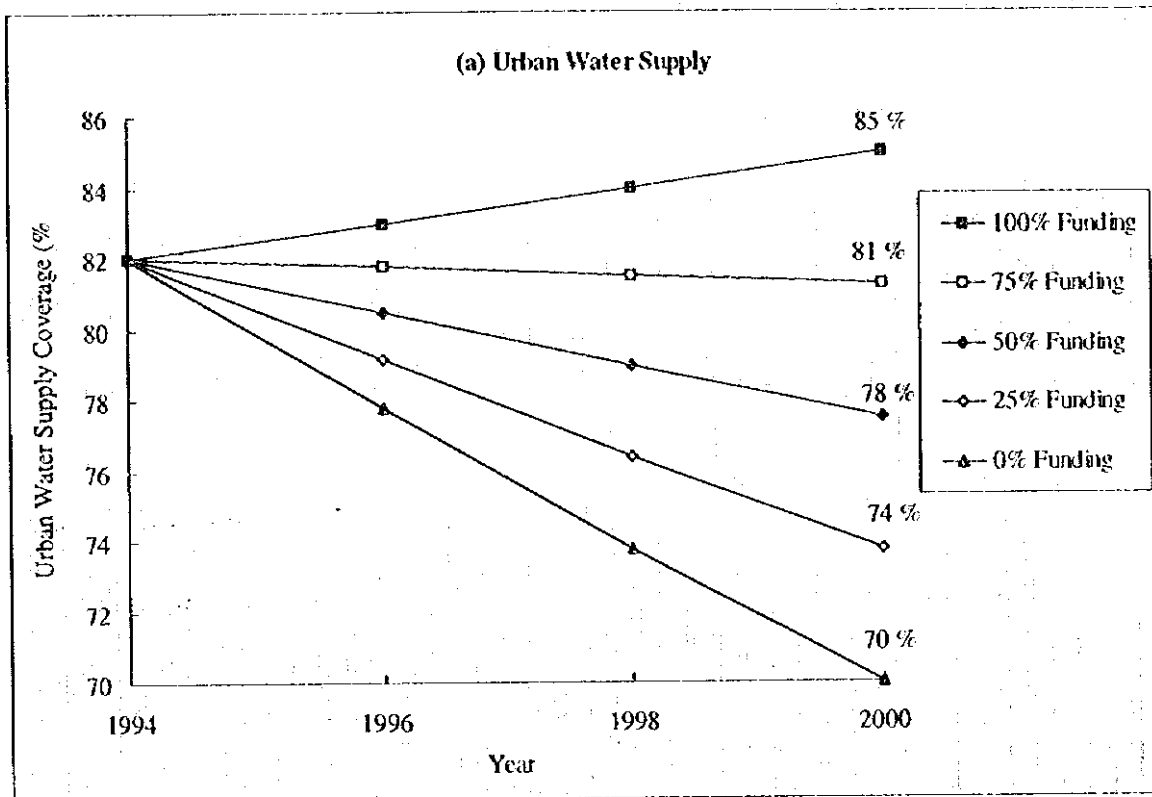
(2) The Second Reference Scenario

An intermediate scenario with 50 - 75 % of funding range is considered. Urban and rural water supply coverage in the year 2000 are attained between 78 - 81% and between 71 - 78%, respectively. For sanitation (household toilets), coverage will reach to 64 - 71% on the assumption that required private investments are followed.

(3) The Third Reference Scenario

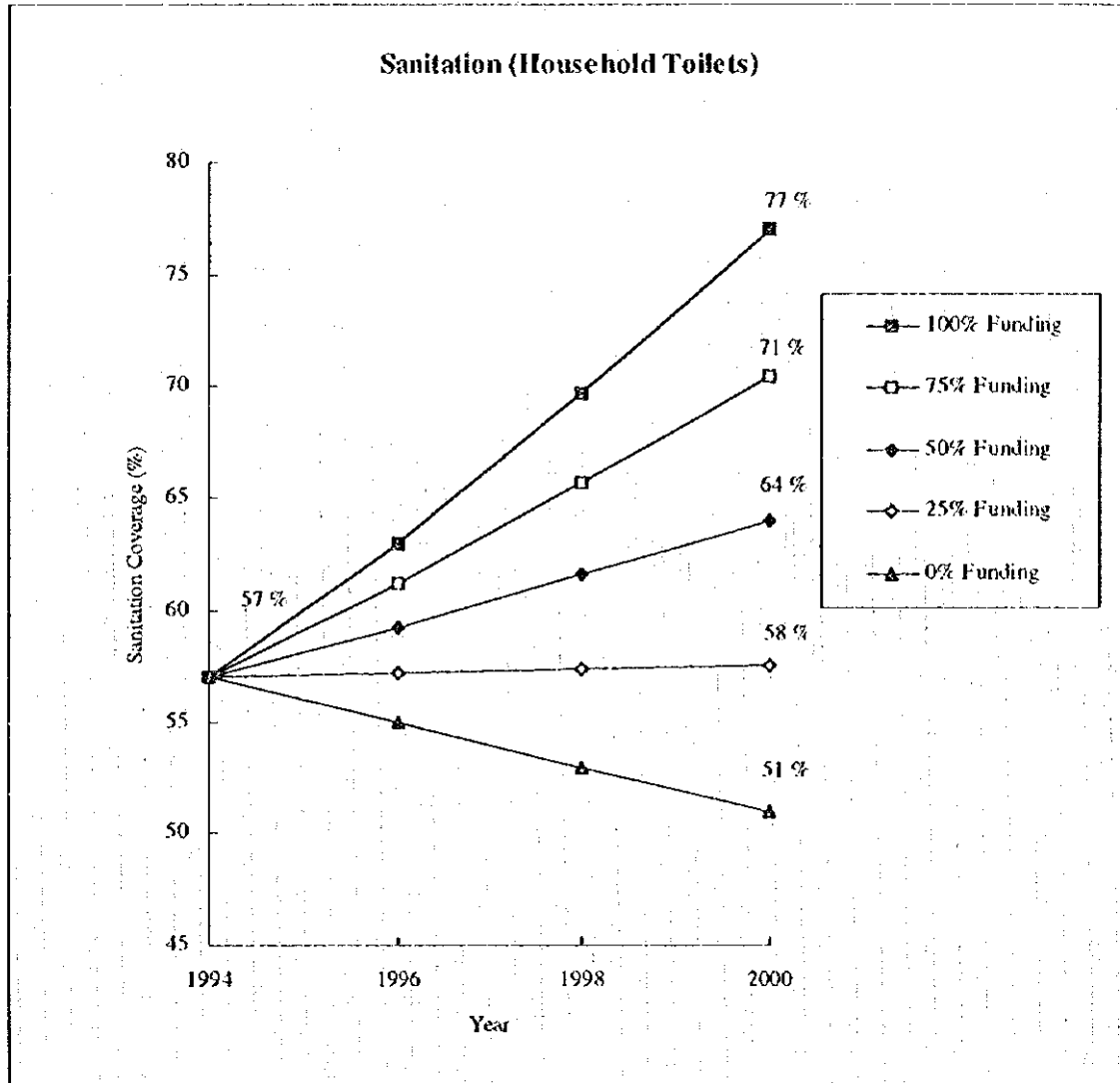
A 25% funding against the total requirements of Phase I is assumed as a possible achievement level with the augmentation of IRA. Urban and rural water supply coverage in the year 2000 will be attained at 74% and 64%, respectively, while sanitation coverage will be at 58%.

Figure 11.4.1 Relationship Between Funding Levels and Percent of Coverage for Water Supply Sector



Note: Percentages of the coverage between 1994 and 2000 are simply prorated as the reference.

Figure 11.4.2 Relationship Between Funding Levels and Percent of Coverage for Sanitation Sector



Note: Percentages of the coverage between 1994 and 2000 are simply prorated as the reference.

11.4.2 Alternative Countermeasures

(1) Acquisition of external funds

Foreign assistance has played significant roles for the development of the relevant sectors in the past. Negotiations with the central government agencies (DILG, LWUA, etc.) are requisites to access the foreign funds. Development of new local financial mechanism is also needed for LGUs under current policy shifts to increase the opportunities of LGUs undertaking foreign-assisted projects.

LWUA Medium-Term Plan includes Naujan municipality as one of 200 project sites (ADB funded projects ; 88 million pesos in 1997 and 243 million pesos in 1998).

(2) Augmentation of sector finance under current arrangements

Increase of the IRA to the Relevant Sector

The increase of IRA from the national government to LGUs is at first needed along with current procedure. LGUs shall also arrange the funds with a priority to the relevant sector.

Local Taxes

More allocation of local taxes to the relevant sector shall be arranged although the share of local taxes in the provincial total budget is small.

Utilization of Other Local Funds

Utilization of other funds, the Countryside Development Fund (CDF) in particular, shall be sought for development of the relevant sector.

(3) Introduction of private sector

Privatization of Water District or Level III System

Privatization of water districts/Level III systems help expedite sector development and sustainability of the system as suggested by NEDA Board Resolution No. 4 (s. 1994).

LGU Guaranty Organization

LGU Guaranty Organization as a public-private corporation managed by private sector in the national level shall be studied to encourage private financing for the development of

environmental infrastructure, which is introduced in other developing countries. The organization will guarantee local private loans to LGUs in provision of a longer term financing.

(4) Effective and economical investment

Investment Need Ranking of Municipalities

Investment need ranking of the municipalities is discussed as a guide for implementation of PW4SP and a measure for effective and economical public investment. Referring to this ranking, the provincial government will arrange its financial resources more effectively.

The ranking for urban water supply is specifically studied considering essential three factors, while a sole factor of additional requirements is assumed to coincide with the priority of other sub-sectors. Synthetic evaluation of concerned sub-sectors is finally presented in the context of comprehensive improvement of this sector. The result for urban water supply is employed for allocation of provincial IRA to the municipalities in the concerned sub-sector. The synthetic ranking may be availed for the huge investment in use of the funds to be provided by other donors in the future.

For the urban water supply component, the ranking criteria comprise three evaluation factors, namely, (a) percentage of underserved and unserved population in the base year, (b) percentage of underserved and unserved population in Phase I, and (c) percentage of population unserved by Level III Systems in the base year. These factors are firstly scored by the range of underserved and unserved percentage and totaled by municipality in application of weighing method. Adopted weight to the factors (a), (b) and (c) are 50%, 35% and 15%, respectively. Table 11.4.1 shows ranking procedures, overall weighted score and investment need ranking of the municipalities. Bulalacao is identified as the first priority municipality followed by Bongabong, Gloria and Mansalay.

With reference to provincial fund allocation, it is assumed that 60% of the fund for urban water supply from provincial government are distributed equally to the top five ranking municipalities, while remaining 40% are equally distributed to the rest of the municipalities. In case municipal fund available may cover Phase I requirements completely when provincial IRA is distributed according to the assumption above, surplus portion over 100% is redistributed equally to the top ranking municipalities. The result of distribution is shown in Table 11.4.2.

Table 11.4.1 Municipal Investment Need Ranking for Urban Water Supply

Municipality	Evaluation Factor			Scoring by the Factor			Overall Weighted Score	Investment Need Ranking
	% of Underserved and Unserved Population in Base Year	% of Underserved and Unserved Population in Phase I	% of Population Unserved by Level III Systems in the Base Year	Underserved and Unserved Population in Base Year	Underserved and Unserved Population in Phase I	Population Unserved by Level III Systems in Base Year		
Baco	10	22	100	1.00	0.40	1.00	0.79	5
Bansud	24	32	100	0.60	0.60	1.00	0.66	8
Bongabong	41	47	100	1.00	0.80	1.00	0.93	2
Bulalacao	77	79	100	1.00	1.00	1.00	1.00	1
Calapan (Capital)	10	23	34	1.00	0.40	0.40	0.70	7
Gloria	44	48	100	1.00	0.80	1.00	0.93	2
Mansalay	55	59	100	1.00	0.80	1.00	0.93	2
Naujan	20	28	61	0.40	0.40	0.80	0.46	13
Pinamalayan	2	14	2	0.20	0.20	0.20	0.20	15
Pola	30	36	30	0.60	0.60	0.40	0.57	11
Puerto Galera	8	33	100	0.20	0.60	1.00	0.46	13
Roxas	18	32	100	0.40	0.60	1.00	0.56	12
San Teodoro	27	32	96	0.60	0.60	1.00	0.66	8
Secotto	24	38	100	0.60	0.60	1.00	0.66	8
Victoria	10	23	100	1.00	0.40	1.00	0.79	5
Provincial Total	18	30	61					

Note: 1. Scoring to Underserved and Unserved Percentage.

2. Weight Allocation to Score.

Score	Range of Underserved and Unserved Percentage			50	35	15	Allocated Weight
	41 < %	61 < %	81 < %				
1.0	41 < %	61 < %	81 < %				
0.8	31 < % < 40	46 < % < 60	61 < % < 80				
0.6	21 < % < 30	31 < % < 45	41 < % < 60				
0.4	11 < % < 20	16 < % < 30	21 < % < 40				
0.2	% < 10	% < 15	% < 20				

Table 11.4.2 Distribution of Provincial IRA to Municipalities for Urban Water Supply

Unit: 1000 Pesos

Ranking	Municipalities	Fund Distribution		IRA to Municipalities from National Government (2)	Available Fund Distributed to Municipalities (1)+(2)	Phase I Requirements	Accomplishment Percentage (%)
		Fund Distribution from Provincial Government (1)	Distribution Percentage (%)				
5	Baco	524	7.36	787	1,311	1,311	100.0
8	Bansud	356	5.00	678	1,034	6,835	15.1
2	Bongabong	759	10.66	789	1,548	13,176	11.8
1	Bulalacao	759	10.66	786	1,545	16,921	9.1
7	Calapan (Capital)	356	5.00	4,042	4,398	26,935	16.3
2	Gloria	759	10.66	474	1,233	6,656	18.5
2	Mansalay	759	10.66	1,105	1,865	10,444	17.9
13	Naujan	356	5.00	511	867	6,150	14.1
15	Pinamalayan	0	0.00	0	0	0	0.0
11	Pola	356	5.00	145	501	2,960	16.9
13	Puerto Galera	356	5.00	2,020	2,376	6,409	37.1
12	Roxas	356	5.00	604	960	6,252	15.4
8	San Teodoro	356	5.00	313	669	4,179	16.0
8	Secotto	356	5.00	555	911	10,512	8.7
5	Victoria	712	10.00	921	1,633	6,324	25.8
	Total	7,121	100.00	13,730	20,851	125,064	16.7

To come up with the synthetic ranking of the municipalities, scoring method is also employed for other sub-sectors. The score is derived from the range of underserved and unserved percentage in the base year. Synthetic investment need ranking of municipalities covering four sub-sectors is shown in Table 11.4.3. (refer to ranking procedures in Table 11.4.1, Supporting Report.)

Table 11.4.3 Municipal Investment Need Ranking

Municipality	Weighted Score by Sub-sector				Total Weighted Score	Synthetic Municipal Investment Need Ranking
	Urban Water Supply	Rural Water Supply	Urban Sanitation	Rural Sanitation		
Baco	0.20	0.05	0.05	0.05	0.35	11
Bansud	0.17	0.10	0.10	0.10	0.47	9
Bongabong	0.23	0.15	0.10	0.15	0.63	5
Bulalacao	0.25	0.25	0.15	0.25	0.90	1
Calapan (Capital)	0.18	0.05	0.25	0.10	0.58	7
Gloria	0.23	0.15	0.20	0.20	0.78	3
Mansalay	0.23	0.20	0.10	0.15	0.68	4
Naujan	0.12	0.10	0.05	0.25	0.52	8
Pinamalayan	0.05	0.05	0.10	0.15	0.35	11
Pola	0.14	0.25	0.25	0.25	0.89	2
Puerto Galera	0.12	0.05	0.05	0.25	0.47	9
Roxas	0.14	0.10	0.10	0.25	0.59	6
San Teodoro	0.17	0.25	0.20	0.10	0.72	4
Socorro	0.17	0.15	0.15	0.25	0.72	5
Victoria	0.20	0.05	0.15	0.05	0.45	13

Provincial Trust Fund

Provincial Trust Fund approach is implied as a mechanism to totally manage any funds/projects through different financial sources or implementing agencies. The fund raises the LGUs responsibility for effective and economical utilization of the financial resources (details are referred to in Chapter 9).

11.5 Cost Recovery

Cost recovery and cost sharing are essential to attain the planned targets. The PW4SP advocates the imposition of tariffs for the recovery of capital and operating cost based on the principle that adequate water, sewerage and sanitation facilities should be paid for.

(1) Level I water supply systems

For Level I systems, 100% of the capital costs are granted according to the current national policy, although beneficiaries are responsible for all recurrent costs. Monthly recurrent cost is estimated at about 5 pesos per household in the base year price level. (refer to recurrent cost in Chapter 10) The figure will be increased up to about 8 pesos in 2000 assuming annual inflation of 10%. This monthly fee seems to be affordable to the users

considering current income level (refer to affordability in Chapter 6), but willingness to pay shall be promoted.

(2) Level II water supply systems

Water source development is granted for Level II systems as a practice nationwide, while full cost recovery is required for all other capital costs. The average capital cost except for water source development is estimated at 4,550 pesos per household (refer to Chapter 10). Applying the capital recovery factor to the capital costs with conditions of 10% interest rate and 25 years repayment period, monthly payment amounts to about 40 pesos per household. In addition, monthly recurrent cost is estimated at about 8 pesos per household in the base year price level. It will reach to about 15 pesos in 2000 with annual inflation rate of 10%. Thus, the total of repayment and recurrent cost arrives at about 55 pesos, which is less than 2% of a family income as shown below.

(a) Estimated water rate (flat rate; pesos)	:	55
(b) Percentage of (a) to monthly median household income in 2000 ¹⁾	:	0.9%
(c) Percentage of (a) to monthly low household income in 2000 ²⁾	:	1.5%

Notes:

- 1) Provincial average monthly median income in 2000 (6,216 pesos per household) is derived from 1991 Family Income and Expenditure Survey considering annual inflation rate of 10%
- 2) Provincial average monthly low income in 2000 (3,619 pesos per household) is estimated using LWUA data in Region IV.

(3) Level III water supply systems

A full recovery of capital and operation & maintenance cost is required for Level III systems. To test the affordability, a comparative study was made between estimated water rate (based on standard monthly consumption; 15m³ per household) and projected income in 2000.

The monthly recurrent cost for the standard household is estimated at about 55 pesos in 1995 price level (refer to recurrent cost in Chapter 10). In consideration of annual inflation rate of 10%, it will become to be about 100 pesos in 2000, while the water rate including financial debt service for the standard household is estimated at about 133 pesos using an average figure of water districts in Region IV (Annual inflation rate of 10% is assumed). Using the monthly water rate of 133 pesos per household and monthly household income discussed in Level II Systems, percentages of the water rate to household income are calculated as shown below. The percentage of the water rate against income is less than 4%, which is commonly affordable.

(a) Estimated water rate for 15 m ³ (pesos) ¹⁾	:	133
(b) Estimated minimum water rate (1-10 m ³) (pesos) ²⁾	:	89
(c) Percentage of (a) to monthly median household income in 2000 ³⁾	:	2.1%
(d) Percentage of (a) to monthly low household income in 2000 ³⁾	:	3.7%
(e) Percentage of (b) to monthly low household income in 2000 ³⁾	:	2.5%

Notes:

- 1) Estimated water rate (15m³) in 2000 referring to the average figure of existing water districts in 1994 in Region IV and annual inflation rate of 10%.
- 2) Minimum water rate is usually studied by LWUA. Water rate is estimated for the household with consumption rate of 10m³ under the same assumption of 1).
- 3) Refer to the study in Level II Water Supply Systems.

(4) Sanitation

The provision of sanitary toilet facilities for public markets and schools is under LGUs. However, recurrent cost for the public markets shall be collected from the users including those with a business at the market.

Household toilets shall be, in principle, managed by individual households. However, the facility is costly with reference to the current income level especially in the rural area. Governmental support is also limited to the provision of toilet bowl for pour flush toilets. In this connection, cost recovery in application of loan is studied.

Applying the capital recovery factor to the construction cost with assumptions of 10% interest rate and 5 years repayment period, monthly repayment amounts to about 740 pesos for a flush type and 260 pesos for a pour flush type, respectively. (refer to recurrent cost in chapter 10.) The percentages of repayment to household income in 2000 are calculated in the same manner of the study for Level III water systems and shown below.

(a) Repayment for Flush Type (pesos)	:	740
(b) Repayment for Pour Flush Type (pesos)	:	260
(c) Percentage of (a) to monthly median household income in 2000 ¹⁾	:	11.9%
(d) Percentage of (b) to monthly low household income in 2000 ¹⁾	:	7.2%

Note:

- 1) Refer to the study in Level II Water Supply Systems.

To expedite sanitation improvement, introduction of specific loans that has the revolving character with low interest rate and longer repayment period may be an effective solution. For urban sanitation, the linkage with existing housing loan shall be established to cover construction of sanitary toilets.

Chapter 12

MONITORING



12. MONITORING

12.1 General

Many of the systems constructed earlier have operated in a limited way because of the insufficient monitoring and post-construction technical support, aside from the problems in promotion of self-reliance and local community management. This Chapter seeks to recommend a focused, practical, viable, creative approach to strengthening sector and project monitoring. The development of a coordinated monitoring system is one of the key components of an effective management system.

Sector monitoring refers to the overall water and sanitation situation in the province. One may readily use a demand-supply model for sector monitoring. Demand would be indicated by such indicators as coverage, health conditions, etc. Supply would be indicated by the water resources situation, by the available funding, or by water/sanitation associations organized to undertake sector activities. Project monitoring, on the other hand, looks at the progress of specific activities or projects. Indicators would thus include; disbursements, percent completion, cost overruns (underruns), etc.

12.2 Sector Monitoring

(1) The monitoring system must support a well-defined and accepted sector development process-model. There are four general aspects of sector monitoring which will be addressed:

- 1) Information collection: Defining the information needs of the LGUs from various levels; reviewing current, readily-available sector information, including its reliability and timeliness; identifying the information gaps and deficiencies of the information system; data consolidation and processing.
- 2) Tracing the flow of raw data from the field (or other related monitoring systems) to the central level. Identifying possible causes of distortions, inconsistencies or blocks.
- 3) Information analysis: Assessing the quality of information; reviewing the analyses done.
- 4) Data feedback: Reviewing the impact of information on planning and decision making at the policy level, the resource allocation level and the operating level; tracing the flow of data back to the field.

(2) Sector performance deficiencies demand that serious thought be given to innovations to reduce costs in achieving the provincial sector plan. With the monitoring system, the sector should be able to take a fresh and objective view of the way to meet current strategies. For example, does community management of systems really work? Do low-cost technologies make sense? Under what conditions and how? How can the target be achieved for low-income communities? A sector monitoring system should be flexible to support planning and research studies on such specific policy and operational issues.

(3) In putting together a relevant sector monitoring system, the following should be seriously looked into:

- 1) It should reinforce the linkage between water, sanitation and health. This implies that coverage should be measured for availability of both water and sanitation for a household. It should not be monitored separately, i.e., a household can thus be categorized as having both water and sanitation, water only, sanitation only or none of either. At later stages, health practices can be included in the monitoring.
- 2) It should be reliable and involve the beneficiaries. This mechanism could provide the data quality control which is missing in existing systems. Distortion of information may occur when implementors are the monitors. The barangay will be the basic data capture level.
- 3) Monitoring will succeed only with interagency support, particularly in the initial stages. It should be accepted by all sector agencies. A unified set of figures and indicators will greatly help in planning.
- 4) It should be practical and implementable. It should start with the current monitoring capacity situation and move up with a clear vision of what the monitoring system should be. This implies phasing and gradual expansion and strengthening of the system and training of staff.
- 5) The system should be followed through with effective feedback. It should develop creative ways of providing feedback to the field. The current way in which data is processed is towards consolidation. The field sources' only feedback is, for example, national coverage figures. In the course of consolidation, opportunities for specific feedback useful to project implementors on performance are lost.

(4) Sector development indicators: Some important indicators will be more difficult to collect than others because the sector is not ready to gather them. The LGUs will group indicators into phases based on availability of data and/or ease with which such information can be collected with improved systems. A review of the objectives set for the

sector almost exclusively shows a focus on coverage. It is important to get sector objectives stated beyond coverage terms in order to encourage use of additional indicators. Based on past experience, requiring too much information leads to start-up difficulties. A three-phase build-up meeting sector requirements is outlined in the following sections:

1) Phase 1 Indicators

- Access to both adequate water and sanitation
- Water and sanitation associations duly organized to undertake sector activities
- Water and sanitation facilities in schools
- Capital development costs
- Sources of capital development funds
- Incidence of diarrhea
- Water availability and water quality maps
- Unit cost (per capita or per facility)

2) Phase 2 Indicators

- Household hygiene habits and practices
- Water stored in house covered? food covered? grounds free of faeces, garbage, wastewater cesspools? animals in the house? mother's and children's hands clean?
- Existence of barangay spot maps and facilities ledger cards
- Existence of O&M arrangements
- Current costs to households and willingness to pay for improved service

3) Phase 3 Indicators

- O&M Costs
- Financial efficiency and stability indicators
- Institutional development indicators
- Low-income groups benefiting from improvements

(5) NEDA has issued a Board Resolution in 1995 providing a practical definition of terms for planning and monitoring. The definitions were arrived at after exhaustive discussions and consensus with the implementing agencies.

(6) Recommended institutional responsibilities for sector monitoring: Monitoring is best left to parties not directly involved in delivery of the services. The best monitors are the community members themselves since accurate monitoring reports is in their best

interest. At the data capture level, the PHO structure, with its midwives and BHW volunteers, is in the best position to take the lead in data gathering.

- 1) **Provincial Level:** The PPDOs, through its Research and Evaluation Division, will play the lead role in organizing the field data collection effort in coordination with the field offices of national agencies, NGOs and the water districts. The Monitoring Specialist, with the PST/PWSO, will assist the PPDO.
 - 2) **Municipal Level:** The Municipal Development Coordinator has the mandate of monitoring all development activities in the municipality. The municipal sector liaison will therefore coordinate the preparation of the reports with the MPDO, supported by PHO and NGOs, as needed.
 - 3) **Barangay Level:** There are several institutional options for leading the monitoring at the barangay level, such as the barangay health stations, the barangay council, etc. The municipal sector liaison will take the lead in establishing the barangay monitoring responsibilities.
- (7) Computerization of the system can come at later stages. This should be gradually phased in as the sector agencies strengthen their monitoring mode. This will also discourage a ground swell of requests for computer hardware. Computer facilities are available at the provincial level.
- (8) A new sector database program has been recently designed and currently under review. A Sector Database Center has been established within the DILG-PMO. The system has been successfully piloted in three provinces and replication in other priority provinces will begin shortly.

12.3 Project Monitoring

Project Monitoring Committees (PMCs) exist at the provincial and municipal levels tasked with the monitoring of local government projects funded from national and local government funds.

- (1) **Scope and coverage:** At the provincial level, monitoring includes projects classified under any of the following:
 - 1) foreign and nationally-funded projects which are implemented or located in two or several municipalities in the province or implemented or located in the province;
 - 2) other projects implemented and managed at the provincial level with funding generated from provincial sources.

(2) Organization of Project Monitoring Committee (PMC): The PMC composed of representatives from 3 NGOs, 2 from the administration, 1 from the ruling party and 1 from the opposition. From these representatives, the Provincial Governor selects the chairman and the four others as members. The Provincial Planning and Development Office can be delegated to serve as the Secretariat and the PMC manages with the assistance of the non-government organizations in the monitoring and validation of project implementation.

(3) Responsibilities: The specific rules and responsibilities of the various units in the implementation of the monitoring system are as follows:

The Project Monitoring Committee :

- 1) Provides the list and schedule of all projects to be monitored to the NGOs involved in monitoring;
- 2) Collects and processes reports of implementors; NGOs monitor the status of project implementation for the information of the development council and next higher level project monitoring committee;
- 3) Pinpoint problems and verify information to be submitted for analysis and action of the development council;
- 4) Provide feedback on the remedial actions of the development council and follow-up their implementation;
- 5) Prepare and disseminate periodic project monitoring report on the status of project implementation; and
- 6) Elevate to higher level bodies problems/issues which are not resolved at their level.

The PMC Secretariat:

- 1) Prepare the monitoring program to be undertaken by the PMC during any given fiscal year, which will include, among others, the lists of projects and schedule of implementation based on submission of implementing agencies;
- 2) Provide chief executives with information on the projects to be monitored by the local PMC's;
- 3) Facilitate inter-agency, inter-governmental and field headquarters coordination whenever necessary.

The Project Implementors:

- 1) Submit periodic reports to the monitoring committee on the status of project implementation base on suggested reporting forms;
- 2) Provide authorized monitors assistance in getting access to more detailed information on project implementation (e.g. detailed work program);
- 3) Submit to next higher level office of line agency reports on status of implementation;
- 4) Implement/institute remedial measures on problems/issues identified as suggested by the development council.

(4) Process Flow

- 1) The PMC secretariat provides the NGOs with the monitoring plan, containing information on projects to be implemented at the provincial level;
- 2) PMC prepares its monitoring program for the calendar year;
- 3) Project implementors undertake projects, prepare and submit status reports on project implementation to the PMC;
- 4) NGOs project exception reports are submitted to the PMC, with copy furnished the project implementors;
- 5) PMC assesses reports of implementors and NGOs and conducts project visits of projects identified in the monitoring work program;
- 6) PMC processes reports of various implementors and provides the provincial development council with a consolidated report on status of project implementation in the province;
- 7) PMC evaluates problems, recommends solutions during its regular or special meetings, and refers same to the Provincial Development Council for appropriate action;
- 8) PDC assesses reports and takes proper action (problem solving, referral to appropriate agencies/council);
- 9) Implementors take remedial action on problems/issues encountered in project implementation. (If after a reasonable period of time, no remedial measures/ appropriate action have been taken on the problems referred to the concerned agency/local development council, the PMC forward the issue to that RDC.)
- 10) PMC provides feedback to concerned implementors, LGUs, NGOs, and other concerned agencies and follow-up implementation of remedial measures.
- 11) PMC forwards consolidated status report on project implementation in the province to the Regional Project Monitoring Committee (RPMC).

(5) Frequency/Timing of Report Submission

The PMC determines the schedules for the submission of reports. Reports are submitted to the PMC who will forward the consolidated reports to the Provincial Development Council (PDC). Submission of the consolidated report from the provincial PMC to the regional PMC is usually undertaken on a quarterly basis. The PMC furnishes the Provincial Governor with a copy of the reports for his reference and action.

12.4 Evaluation of Plan Implementation and Updating the PW4SP

- (1) This PW4SP should be updated at least every five years. This will be the responsibility of the PWSO in close coordination with the PPDO. Based on the sector monitoring reports, the PWSC will review the progress of the sector compared with objectives and the efficiency with which these objectives were achieved. This will be followed by a reformulation of objectives, strategies, new policies and policy revisions and an updated sector investment program.
- (2) To initiate the implementation of this sector monitoring system, the Phase I indicators (See 12.2) shall be used. Formats have been drafted for this purpose (See Table 12.4, Supporting Report). Specifically, the information to be collected are as follows:
 - 1) Access to both adequate water and sanitation as a measure of demand: This indicator can be taken from the Field Health Service Information System (FHSIS) Annual Environmental Sanitation Survey which are prepared by the PHO midwives. These annual surveys are summarized by municipality by the sanitary inspectors. NSO population projections will be utilized.
 - 2) Water and sanitation associations (RWSAs/BWSAs) organized: This indicator can be collected from the Cooperative Development Authority (Municipal or Provincial Chapters) in as much as all water cooperatives and/or associations are required to register with the CDA.
 - 3) Water and sanitation facilities in schools: This indicator can be collected from the various school district offices; consolidated at the division (provincial level). Although a system is in place for regular inventory of facilities by DECS, actual inventories are seldom implemented and the LGUs may have to institute a supporting data gathering activity.
 - 4) Capital development costs: If the Trust Fund mechanism may be in place, this indicator should be easy to get. If this is not in place yet, the LGUs may have to

gather information from the local DEO of DPWH, the PHO, the various municipalities and the water districts.

- 5) Sources of capital development funds: Data sources are the same as those of item 3).
 - 6) Incidence of diarrhea: This information can be taken from Form M-2 of the FHSIS. (Collection and processing of the data form is similar to that of item 1).
 - 7) Water availability and water quality maps: These maps should be continually updated based on field reports on water quality and quantity as they are received from operations reports. Areas where, for example, salinity is increasing should be indicated. Areas suitable for shallow wells, for deep wells and for possible spring sources can be indicated.
 - 8) At the conclusion of every project, the monitoring specialist prepares a report on actual unit costs incurred. This would include, for example, the cost of drilling for shallow or deep wells per meter depth; the cost of pipeline per linear meter, etc.
- (3) Municipal level consolidation: For every reporting period, the municipal sector liaison gathers all the barangay level data including those reports of the municipal health officer (and sanitary inspectors), the DECS division offices. A municipal sector report will be thus prepared. Further refinements of this report may be needed in view of future development (refer to item 5) initiated at the national level.

The municipal sector report is reviewed by the Mayor and then submitted to the Governor for further consolidation. Salient sections of this report would be furnished to DILG which is tasked with coordinating a national sector performance report for NEDA and for the President.

- (4) Feedback: Based on these reports, the PST/PWSO will draft a consolidated report on the performance of the sector during the period including the opportunities and constraints met and a set of recommendations for policy revision. Municipalities which have made outstanding progress and associations which have introduced creative innovations in its operations would be cited.

Annual reviews shall be organized to analyze not only the attainment on the physical project targets, but more significantly, whether the vision is being attained. These reviews could also provide the opportunity to sharpen or revise the vision and the mission statement and distill lessons learned from the implementation experiences.





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