

## 9.5.5 Approaches to Participatory Community Development

### (1) Manner of Participation in Sector Development

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

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

### LGU Participation

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

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

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

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

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

- b) Consultation. The LGUs should consult the beneficiaries on key issues during all the stages of a project cycle in order to increase their level of community participation. This also gives the beneficiaries the opportunity to interact freely and provide valuable feedback to the planners and implementors. In WATSAN projects, people should be consulted as early as the planning/study period when level of service, facilities sites, costs and other important data are determined. Consultation will be crucial during the construction of facilities, as it is in this stage that participation is most needed through the provision of free labor and donation of locally available materials.

In the Province of Sarangani, the KASFALA, or the periodic conference of leaders, has institutionalized the "community-based approach to policy formulation and decision-making." The assumption is that the leaders go to the conference table representing the needs of their own constituents. But KASFALA, as a mechanism for consultation, has been utilized only in the provincial level. It is recommended, therefore, that KASFALA be first brought down to the level of the barangay, then next to the municipal level, before it is brought up to the province. This will ensure that the leaders in all the LGU levels are truly listened to in so far as policy recommendations for the WATSAN sector are concerned. The KASFALA must not, however, replace actual grassroots consultation, where the true pulse of the people are felt and articulated.

- c) Decision-making Role. The LGUs should give the beneficiaries and their leaders a genuine decision-making role in planning and implementing sector projects, exclusively by the beneficiaries alone or jointly with others on specific issues or aspects of a project. Decision-making implies greater control or influence on the project and, therefore, a higher level of community participation.
- d) Initiative or Action. The LGUs should provide the beneficiaries and their leaders ample room to take initiative in terms of actions and/or decisions pertaining to a project, such as initiating the organization of a WATSAN association, requesting for training, and upgrading its system from one service level to another.

### Beneficiaries Participation

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

- a) The Provision of Free Labor and/or Materials. The beneficiaries should continue to contribute needed labor and materials, as this is one way of increasing the people's identification with the system being built. But, contributing labor or donating materials as a demonstration of participation should not be the only form of participation available because pride of ownership is also dependent on what the people's other priorities might be.
- b) The Sharing of Costs. Project beneficiaries should also be made to contribute in cash or in kind in maintaining the system – an indication that they value the service and are committed to keeping the system in good working order. This sharing of costs, through cost recovery schemes or O&M agreements, may not in themselves be a reliable indicator of local commitment, if the average community members and, in particular, women have not been involved in decisions concerning the system. Thus, other forms of participation are recommended to be explored.
- c) Participation through Contractual Obligation like MOAs. The participation of the beneficiaries in the project can be detailed in a listing of the roles and responsibilities that apply to each partner in the project, that is, national government with the LGU, and the LGU with the community. To make these requirements more formal and binding, a contract or a Memorandum of Agreement may be drawn. The elements to be considered in the MOA should be the how to solicit the continuous support of the community's leadership, the WATSAN association's leadership, and the maintenance volunteers in order to keep the WATSAN association and its facilities functioning.

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

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

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

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

## (2) The CD-CO Process

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

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

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

Once an agreement is reached with all concerned, and the BDC decides to undertake the WATSAN project, the Barangay CD Coordinator, with assistance coming from the provincial and municipal CD Specialists and/or the NGOs hired for the purpose, must undertake a barangay survey to validate the assessment of the BDC as compared with the beneficiaries' demand for the level of service. The survey will also provide the information on the users' willingness to take the responsibility for the O&M of the facilities, willingness to pay and to be trained on O&M as well as the provision of local counterpart. Such discussions will generate a demand assessment from the barangay officials to be validated and/or confirmed against the results of the barangay survey. The survey results, together with the spot map, must be presented to the community for further validation and/or confirmation (refer to the Supporting Report for the Community Organizing Handbook for Water Supply and Sanitation).

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

#### **9.5.6 Information, Education, and Communication (IEC)**

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

upon as a long-term activity, which should ideally start as a foundation activity even before a project begins.

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

(1) National

As an interim measure, the DILG's WSS-PMO should periodically provide information on sector policies, plans, initiatives and programs for regular dissemination to the public, as well as to its regional and provincial offices. It can do so by utilizing the Department's Public Information Office (PIO) and other existing communication linkages with the LGUs, as well as the government information and mass media networks, such as the Philippine Information Agency, Philippine Broadcasting System, and PTV-4.

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

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

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

(2) Provincial

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

It is suggested that relevant provincial events (meetings, fora, training programs, etc.) be utilized to discuss sector projects and distribute informational/educational materials. General information, that is, news on current projects, technologies, health and hygiene tips – can be channeled through local radio stations. These strategies should be replicated at the municipal levels. The Province, assisted by the DILG-WSS PMO, should sponsor an IEC seminar workshop among the municipal CD Specialists.

(3) Municipal

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

(4) Barangay

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

### **9.5.7 Health and Hygiene Education**

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

As revealed in the group surveys, the people learned about health and sanitation mostly from health workers and from the radio. The province can, therefore, take a cue from this by giving emphasis on the utilization of health personnel to undertake health education and on airing health education materials over the radio.

## **9.6 Gender**

### **9.6.1 General**

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

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

### **9.6.2 LGUs and Gender**

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



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

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

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

### **9.6.3 Gender Participation in WATSAN Projects**

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

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

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

- a) For construction of Level I facilities and sanitary latrines:
  - Are the designs (specifications) of Level I facility and sanitary latrines friendly to both sexes and based on their needs?
  - Do system/procedures allow both sexes to participate in construction?
- b) Capacity enhancement program:
  - Are all project personnel aware of gender issues?
  - Is gender training incorporated in the capacity enhancement program?
- c) Community development program:
  - Can both women and men participate in any kind of meeting?
  - Can both sexes freely express their opinion in the meeting?
  - Is all uncompensated work shared equally among women and men?
  - Do both women and men participate in the decision process for determining construction equity (fees and labor)?
  - Do both women and men participate in the WATSAN association's formation process?
  - Are both sexes represented in WATSAN association as board members?
  - Do both sexes participate in a pre-construction/formation training?
  - Is all training opportunity shared by both sexes?
  - Do both sexes participate in O&M activities?
  - Do both sexes participate in monitoring and evaluation activities?
  - Will the project effects be shared equally among women and men?

## 9.7 Human Resources Development and Training

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

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

simultaneously occurring processes - those related to task and/or subject on one hand, and those related to attitude formation on the other.

#### (1) Training Principles

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

- 1) **Perceived Purpose:** Participants should recognize why a particular topic is being discussed or presented, i.e., the relevance. This is the first element that should be established and agreed upon in any training activity.
- 2) **Graduated Sequence:** The subject matter should be presented in a logical sequence, which can be followed by the trainees.
- 3) **Knowledge of Results:** At every point during a training activity, participants must know how well they are performing, i.e., feed-back.
- 4) **Appropriate Practice:** If the objective of a training effort is to develop specific skills, there must be opportunities to practice and demonstrate these within the training activity.
- 5) **Individual Differentiation:** Attention must be paid to the fact that every person learns at a different pace.

#### (2) The Training Process

- 1) **Needs Assessment:** The first step is to determine the problem to which a training solution will be able to make an impact. A careful analysis is necessary because the training should address and focus on precisely those deficiencies in knowledge, attitudes or skills that hinder reaching certain goals. However, one must bear in mind that not all problems or training alone can solve deficiencies. In most cases, complementing interventions will be needed.
- 2) **Setting Learning Objectives:** In the second step, the learning objectives need to be set. Training designers shall present these objectives in behavioral terms, i.e, what should a participant be able to do at the end of the training period (not what the session will accomplish). It is necessary to formulate them with care because they also serve as criteria for evaluation at the end of the training process.

- 3) **Methods and Techniques:** Different methods of training are appropriate for different types of learning; the methodology should be appropriate with the set learning objectives. Participatory methods, like group exercises, group discussions, role plays etc. are most effective in attitude formation. The choice of methodology is mainly based on the learning principles and objectives. Human factors, resources available (time, facilities) and the subject area will also affect the choice.
- 4) **Evaluation of Training:** Training evaluation assesses whether a course was adequately designed and implemented to meet the set objectives. There are four levels of evaluation presented. Each level focuses on a specific area and involves a specific set of standards and evaluation tools.

### (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.

#### (4) Responsibilities

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

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

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

#### 1) For staff operating Level I systems

- a) Preparatory orientation training activities will be organized leading to the formation of associations. These community-level orientation activities will consist of briefings about the health situation, the relationship between health, water supply and sanitation. The LGU program for water and sanitation improvement will be presented, including policies and procedures for accessing technical and financial support.
- b) Technical training of caretakers will consist of: water source protection (for deep wells, shallow wells, spring boxes and surface water intake structures); water

quality protection; operation and maintenance of hardware (pumps, pipes), including simple replacements of parts; plumbing and pipefitting.

- c) Management training will include: fee setting, bookkeeping and funds management, preparation of improvement plans and monitoring and reporting requirements. Detailed policies of the LGU will be discussed.
- d) Current training activities and materials for the BWSAs by the DILG will be reviewed and adopted by the municipalities. UNICEF assisted DILG in updating these materials.

2) For staff operating Level II systems

- a) Preparatory orientation and training activities will be organized leading to the formation of associations. These community-level orientation activities will consist of briefings about the health situation, the relationship between health, water supply and sanitation. The LGU program for water and sanitation improvement will be presented, including policies and procedures for accessing technical and financial support.
- b) Training of technicians and operators will generally consist of: water source protection (for deep wells, spring boxes and surface water intake structures); water quality protection; water storage; chlorination; operation and maintenance of hardware (pumps, pipes), including simple replacements of parts; plumbing and pipefitting. Pump operation and electrical controls will be a major focus of this program; metering will be presented.
- c) Management training will generally include: organization aspects, operations policy formulation, water rate computation, preparation of bills, bookkeeping and funds management, preparation of improvement plans and monitoring and reporting requirements.
- d) Training activities for the RWSAs prepared by LWUA will be reviewed and adopted by the municipalities.

3) For staff operating Level III systems

- a) Technical training of engineers, technicians and operators will generally consist of: water resources conservation and protection (for deep wells, spring boxes and surface water intake structures); water quality protection; hydraulics; transmission lines; water storage; treatment and chlorination; construction inspection; and operation and maintenance of facilities. Implementation of a metering program will also be discussed. Methodologies for feasibility analysis for system expansion will be presented.

- b) Policy and management training will include the full commercial practices system including budgeting and cost controls, bookkeeping and accounting, procurement, maintenance of stock inventories, rate formulation and capital budgeting. The policy formulation process and the various areas of policy for utility operation will be presented in detail. Long-range planning, financial analysis and review, and monitoring with reporting requirements will be discussed.
  - c) The DPWH, LWUA and MWSS developed a comprehensive set of programs and materials for both technical and management training. Inputs from these three agencies and also from local water districts should be sought.
- 4) Training of PWSU staff and municipal liaison staff: Based on the task descriptions presented, the following training programs will be required. At least one program is conducted annually for each of the workshops and courses. The programs will explain the basic concepts and procedures. Succeeding programs will review the adopted policies and procedures and lay the bases for improving operations at the provincial and municipal levels. Municipal sector liaison staff will participate in these programs. They should be organized by the PWSU; except for the Provincial Coordinators' Workshop, which is best handled nationally by DILG to provide a wider base for sharing of experience among the PWSC. In addition, DILG will provide basic guidelines for the design and implementation of the workshops and courses.
- a) The Provincial Coordinators' Workshop will be an annual activity intended to facilitate the exchange of experience among the coordinators. New national policies, opportunities and constraints will be discussed. Case studies will be presented. Sector management & technical experts will be invited to speak on current issues and trends.
  - b) The Community Development Course is intended for trainers, community development specialists and municipal liaison staff. The scope of the course will include: Social marketing & public information programs, community organizing skills, training skills (needs assessment, design, implementation & monitoring).
  - c) The Technical Course seeks to acquaint technical staff at the provincial and municipal levels on the physical aspects of the sector. Its scope will generally include: water resources, overview of water supply systems (source, transmission, treatment, storage, distribution), drilling and source development, water quality protection, feasibility study and design procedures and standards, and operation and maintenance.

- d) The Project Monitoring Seminar will provide an overview of the monitoring functions and the sector reporting requirements. The process of sector monitoring and updating the PW4SP will be presented in detail. Project monitoring procedures will also be discussed.

(5) Health and Hygiene Education

- 1) Policy: The LGUs shall establish hygiene education programs through appropriate methods and channels referring to on-going national program. These shall include immediate short-run programs: information campaigns; as well as long-term value formation interventions, possibly through the formal school system. If the LGUs are to attain the full economic benefits of improved water and sanitation services, household behavior and hygiene need to be addressed. Three approaches will be used:
  - a) Community-based Approach: Direct house-to-house campaigns can be implemented through the Rural Health Units, as part of their current functions. Meetings by house "clusters" to discuss relevant health issues can also be organized. This will also be done through direct person-to-person contact with PHO staff, the municipal health staff, midwives, sanitarians and the barangay health volunteers. Special presentations can also be done during the regular meetings of community-based socio-civic clubs. Various flip charts and IEC (Information, Education and Communication) materials are already available.
  - b) School-based Approach: Students are the main targets of this approach, either directly or through their teachers. Special focus activities, such as Water and Sanitation Week or Nutrition Week can be introduced with programs or convocations to make the student aware of the issues and solutions. Posters, flip charts, and other audio-visual materials will be required.
  - c) Media-based Approach: This approach utilizes radio and print media to introduce and reinforce health messages. Many NGOs and the Philippine Information Agency (in coordination with the DOH) have developed interesting and attractive materials.
- 2) Responsibility: The community development and training specialists at both provincial and municipal levels will be responsible for the health and hygiene education function. The 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 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  

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COST ESTIMATES FOR  
FUTURE SECTOR DEVELOPMENT

**10**

## 10. COST ESTIMATES FOR FUTURE SECTOR DEVELOPMENT

### 10.1 General

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

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

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

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

### 10.2 Assumptions for Cost Estimates

#### (1) Unit Construction Cost

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

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

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

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

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

Urban water supply:

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

Rural water supply:

- Unit cost for four types of Level I wells (shallow well at 18m in depth and deep wells at 40, 80 and 120m in depth).
- Unit cost for deep well was estimated in combination of open hole with gravel packed well and natural gravel packed well based on water source study results. The profile of the two kinds of wells, gravel packed and natural gravel packed wells is assumed to be 95% and 5%. Required costs for iron removal facility shall be included as required for deep wells at high iron contained area.
- Unit cost for Level II system to cover 600 served population.

Sanitation:

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

Table 10.2.1 Unit Cost of Facilities by Type and Service Level

Sector Service Level	Unit Construction Cost per Facility (Pesos)	Service Coverage		Unit Cost		Rehabilitation Cost of Level I Deep Well (Pesos/Well)
		Served Population	Served Households	Pesos/ Person	Pesos/ Household	
Urban Water Supply	<i>New System</i>					
	For 5,000 population	5,000	N/A	4,500	N/A	
	For 10,000 population	10,000	N/A	3,400	N/A	
	For 15,000 population	15,000	N/A	3,300	N/A	
	<i>Expansion</i>					
	For 5,000 population	5,000	N/A	4,100	N/A	
	For 10,000 population	10,000	N/A	3,200	N/A	
For 15,000 population	15,000	N/A	3,100	N/A		
<i>Level II</i>	1,105,302	600	120	1,850	9,300	
<i>Level I</i>						
Rural Water Supply	<i>Deep Well</i>					
	40 meter depth	N/A	15	N/A	17,580	
	80 meter depth	N/A	15	N/A	29,940	
	120 meter depth	N/A	15	N/A	41,740	
	<i>Shallow Well</i>					
	Spring Development	60,900	15	N/A	4,060	
	670,300	N/A	15	N/A	44,690	
Sanitation	<i>Household Toilet</i>					
	Flush	21,300	1	N/A	21,300	
	Pour Flush	13,000	1	N/A	13,000	
	VIP Latrine	6,600	1	N/A	6,600	
	<i>Public School Toilet</i>	274,100	250	N/A	1,100	N/A
	<i>Public Toilet</i>	344,100	N/A	N/A	N/A	N/A
	<i>Urban Sewerage</i>					
<i>Disinfection of Level I Wells</i>	70			7,300		
						71,200

- Public school toilet:

Unit cost for one facility with 5 toilet bowls to cover 200 served students.

- Public toilet:

Unit cost for one facility with 6 toilet bowls.

- Well disinfection:

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

Urban Sewerage:

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

(2) Unit Cost of Equipment

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

**Table 10.2.2 Unit Cost of Equipment and Vehicle**

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

(3) Sector Management Cost

Sector management cost consists of:

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

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

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

#### (4) Recurrent cost

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

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

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

##### Level III system:

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

##### Level II system:

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

Level I system:

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

School and public toilets:

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

Management cost:

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

### **10.3 Cost of Required Facilities and Equipment**

#### **10.3.1 Cost of Required Facilities**

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

During the medium-term development period, a total of 172.2 million Pesos will be required for construction of required facilities. Of the requirements, urban water supply and rural water supply will share 33.7% and 32.6%, respectively. While, remaining 33.7% will be required for urban and rural sanitation.



Table 10.3.1 Construction Cost of Required Facility by Municipality

Unit: P 1,000

Name of Municipality	Phase I (2003) Requirements							Phase I (2010) Requirements							
	Urban Area			Rural Area			Grand Total	Urban Area			Rural Area			Grand Total	
	Water Supply	Sanitation	Sub-total	Water Supply	Sanitation	Sub-total		Water Supply	Sanitation	Urban Sewerage	Sub-total	Water Supply	Sanitation		Sub-total
Alabel (Capital)	1,968	3,295	5,263		4,934	4,934	10,197	69,149	7,435	97,681	174,265	14,001	17,336	31,337	205,602
Glan	6,490	4,223	10,713	8,725	6,804	15,528	26,242	72,918	8,612	112,208	193,738	15,693	23,801	39,494	233,233
Kiamba	3,749	2,914	6,663				6,663	41,416	5,016	54,531	100,963	4,508	12,244	16,752	117,715
Maasim	2,755	2,817	5,572		3,058	3,058	8,630	27,677	3,444	39,157	70,278	5,301	9,457	14,758	85,036
Maitum		1,982	1,982		75	75	2,057	36,762	2,817	42,800	82,379	4,016	9,280	13,296	95,675
Malapatan	7,282	4,553	11,834	2,842	3,523	6,365	18,199	78,625	5,313	110,383	194,322	8,551	10,164	18,715	213,036
Malunog	35,805	7,426	43,231	44,531	12,447	56,978	100,209	95,285	10,530	159,782	265,597	71,240	40,328	111,568	377,164
<b>Provincial Total</b>	<b>58,049</b>	<b>27,209</b>	<b>85,258</b>	<b>56,097</b>	<b>30,841</b>	<b>86,938</b>	<b>172,195</b>	<b>421,832</b>	<b>43,166</b>	<b>616,543</b>	<b>1,081,541</b>	<b>123,310</b>	<b>122,610</b>	<b>245,920</b>	<b>1,327,461</b>

### 10.3.2 Cost of Required Equipment and Vehicle

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

**Table 10.3.2 Cost of Equipment and Vehicle**

Name of Equipment	Unit Cost (₱ 1,000)	Quantity (set)	Cost (₱ 1,000)
Truck-mounted rotary drilling rig	32,314	0	0
Truck-mounted percussion drilling rig	25,582	1	25,582
Well rehabilitation equipment	280	1	280
Service truck with crane	1,200	1	1,200
Support vehicle (Pick-up with winch)	590	1	590
Refuse collection truck	2,057	6	12,342
<b>Total Equipment Cost</b>			<b>39,994</b>

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

N.A: Not applicable

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

### 10.3.3 Cost for Laboratory

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

### 10.4 Recurrent Cost

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

In the year 2003, the recurrent cost will increase to 5.7 million Pesos/year from 8.7 million Pesos/year in 1997, which is 65.5% increase from the base year corresponding to the implementation of the medium-term development.

Table 10.4.1 Recurrent Cost

Unit: P 1,000

Sector Component	Item	Base Year Existing Facilities	1999	2000	2001	2002	2003	Total (1999-2003)
Urban Water Supply	Operating Cost	695	695	923	1,265	1,606	1,834	6,323
	Spare Parts/Equipments	613	613	814	1,115	1,416	1,617	5,574
Rural Water Supply	Spare Parts/Equipments for Level II System	516	670	825	825	825	825	3,969
	Spare Parts/Equipments for Level I Facilities	3,771	3,771	3,925	4,156	4,387	4,542	20,780
Sanitation	Public School Toilets	2,386	2,386	2,753	3,303	3,853	4,219	16,514
	Public Toilets	765	765	894	1,088	1,281	1,410	5,438
<b>Total Recurrent Cost</b>		<b>8,746</b>	<b>8,900</b>	<b>10,133</b>	<b>11,750</b>	<b>13,368</b>	<b>14,446</b>	<b>58,598</b>

Chapter

**11**

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**FINANCIAL ARRANGEMENTS FOR  
MEDIUM-TERM DEVELOPMENT PLAN**

## 11. FINANCIAL ARRANGEMENTS FOR MEDIUM-TERM DEVELOPMENT PLAN

### 11.1 General

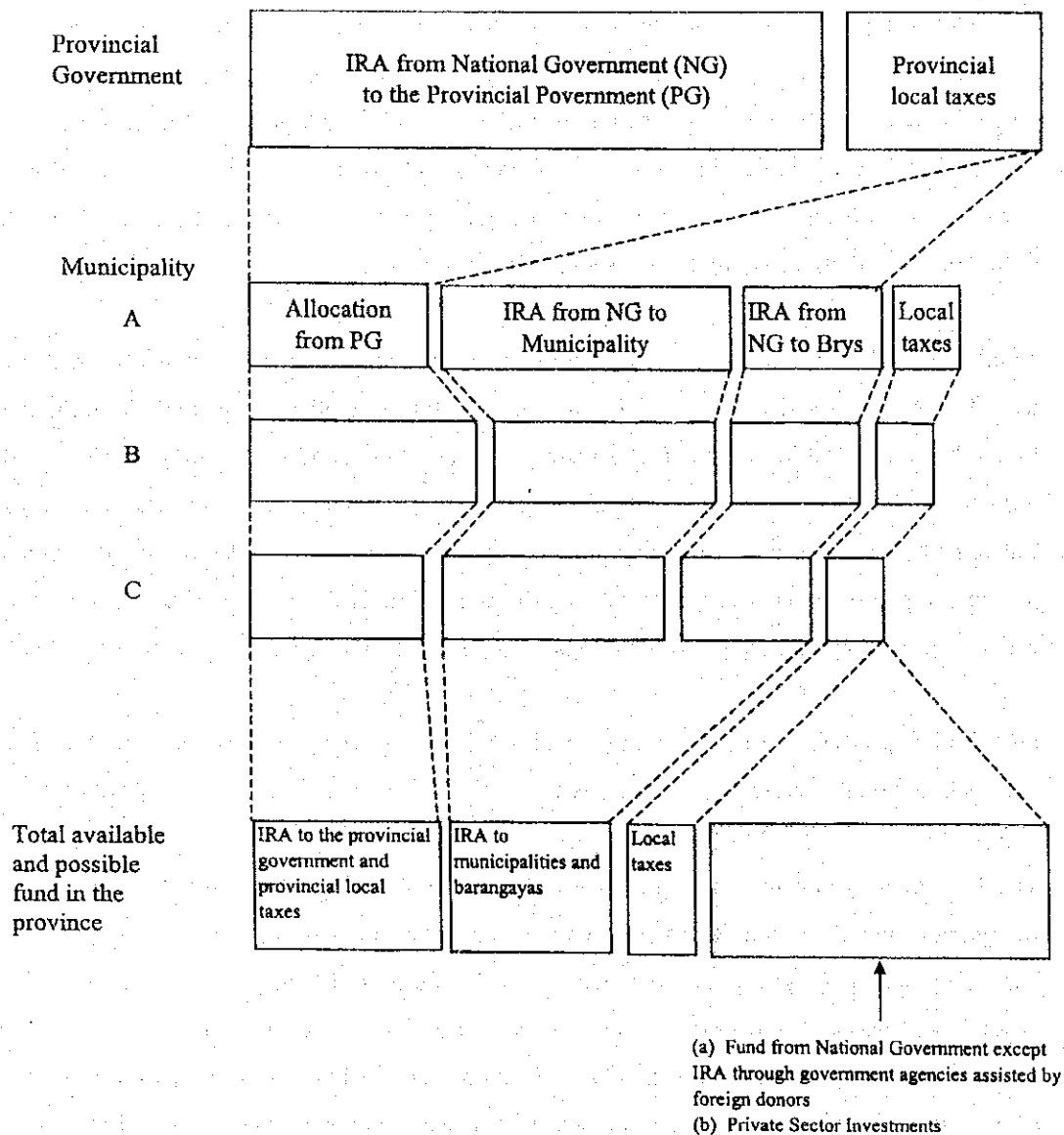
Financial arrangements to attain medium-term (Phase I) targets are sought taking into account potential funds. However, quantitative study is limited to the use of projected Internal Revenue Allotment (IRA). In this connection, this Chapter addresses to identify financial shortfall with reference to 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 with the use of computer-based programs that allow for the future application to include additional funds that are available. Figure 11.1.1 shows the sector budget allocation in the different administrative levels to come up with total funds available in the province. Figure 11.1.2 illustrates the 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 1998.

The Investment Coordination Committee (ICC) of NEDA adopted a policy "to support the financing of devolved activities with social and/or environmental-objectives" based on three considerations, namely: Equity, Externalities and Economies of Scale. The new cost-sharing arrangement was put into practice this year, which clearly limited the national government subsidy for Level I water supply to 5<sup>th</sup> and 6<sup>th</sup> class municipalities up to a maximum of 50% of the total project cost. For sanitation facilities, the national government subsidy for 3<sup>rd</sup> to 6<sup>th</sup> class municipalities shall be from 50% to 70% of the total project cost. In this connection, financial study for Level I water supply and sanitation improvement was conducted for those municipalities meeting the above conditions.

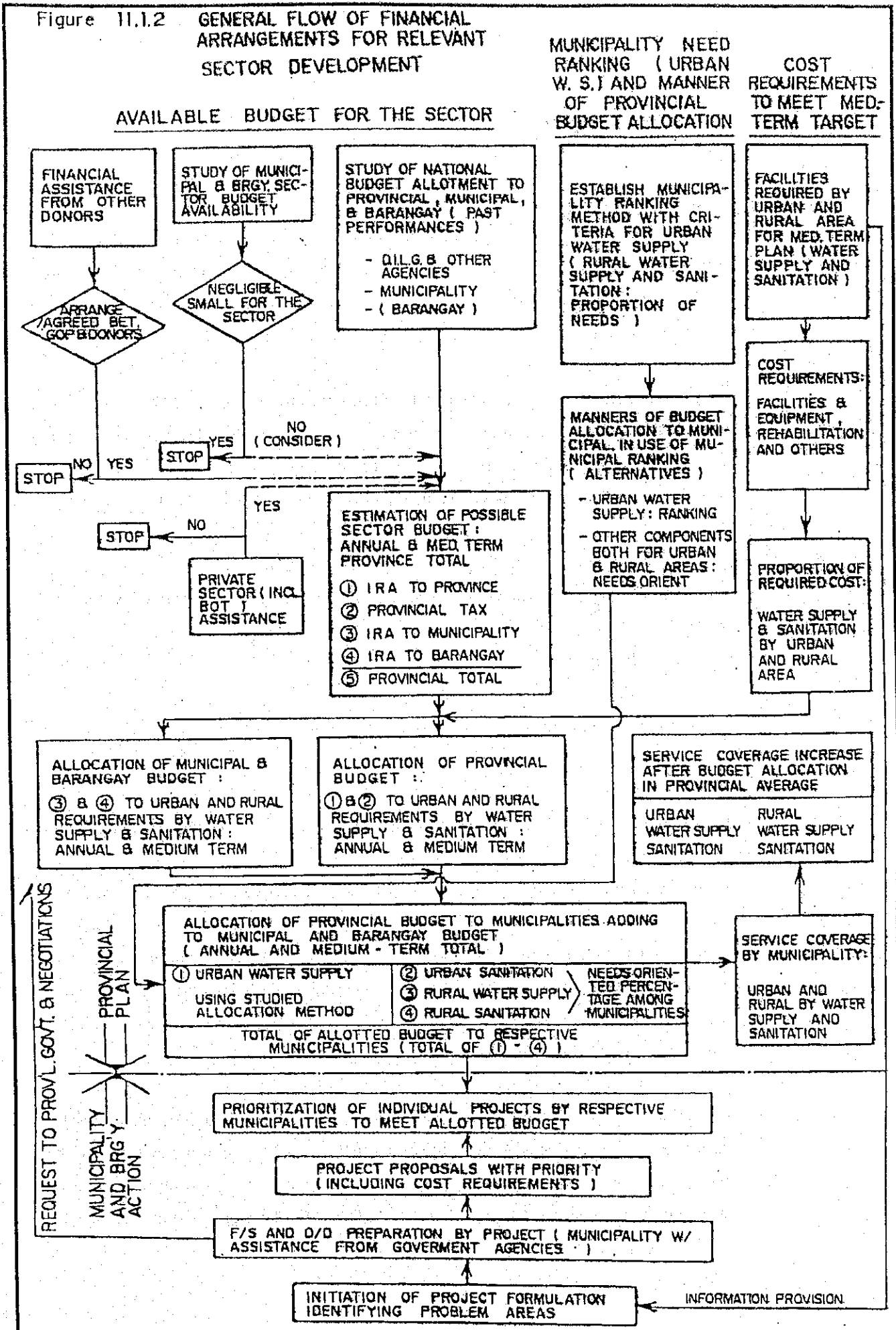
**Figure 11.1.1 Sector Budget Allocation**



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



## 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 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 Tables 11.2.1 and 11.2.2 present calculation results. Calculation process is further described as follows:

(1) Projection of annual IRA to all LGUs in the Philippines from 1999 to 2003

The IRAs come from 40% of past and /or projected national internal revenue taxes from 1996 to 2000 (3rd fiscal year preceding the current year) projections for national internal revenue taxes. 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

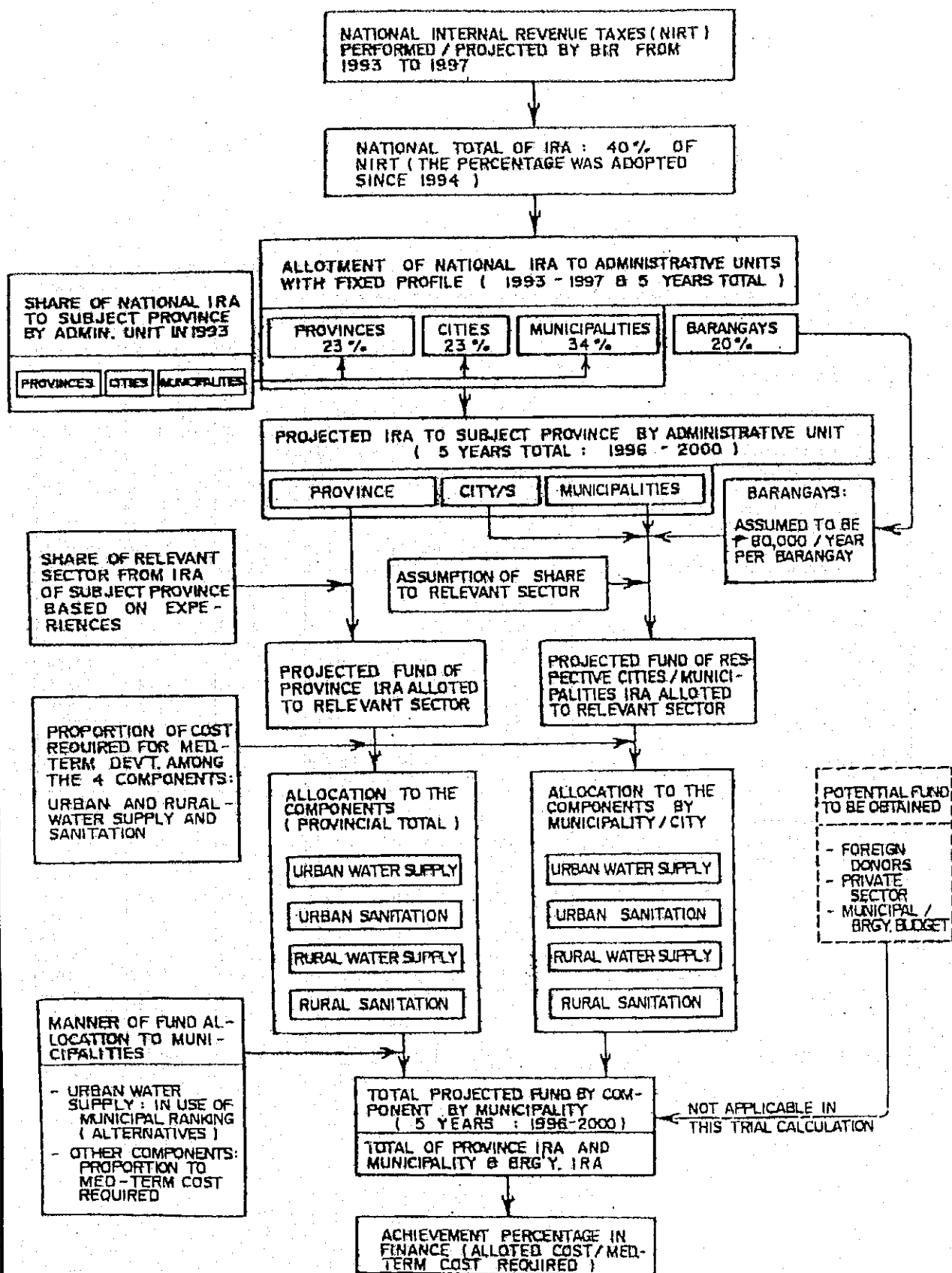
With reference to allocation of national IRA by administrative level, provinces and municipalities are based on weighted 3 factors: population, land area and number of administrative units. In this analysis, however, the distribution percentage experienced in 1998 is simply employed in projecting IRA for the period 1999-2003 (refer to Table 6.2.2, Main Report and Supporting Report). Allotments to barangays are added to the IRAs for municipalities (₱80,000 times the 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 1997, about 3.0% of provincial IRA on the average was availed for the water supply and sanitation sector. Referring to the experience in other provinces, provincial allocation to the relevant sector is assumed to be 4%.



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. THIS REFERENCE  
 INFORMATION IS SHOWN.

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

Unit: P 1,000

	1999	2000	2001	2002	2003	Total
1 40% of Actual/Projected National Internal Revenue Taxes of the 3rd Fiscal Year preceding the current year	94,880,480	104,049,760	115,801,280	127,449,920	142,317,600	584,499,040
2 Internal Revenue Allotment to all LGUs						
(a) province (23%)	21,822,510	23,931,445	26,634,294	29,313,482	32,733,048	134,434,779
(b) cities (23%)	21,822,510	23,931,445	26,634,294	29,313,482	32,733,048	134,434,779
(c) municipalities (34%)	32,259,363	35,376,918	39,372,435	43,332,973	48,387,984	198,729,674
(d) barangays (20%)	18,976,096	20,809,952	23,160,256	25,489,984	28,463,520	116,899,808
(e) total IRA to all LGUs	94,880,480	104,049,760	115,801,280	127,449,920	142,317,600	584,499,040
3 Projected IRA to Subject Province by Administrative Unit						
(a) province	189,971	208,330	231,859	255,182	284,951	1,170,294
(b) municipalities/city including barangays	242,975	265,373	294,080	322,535	358,854	1,483,818
Alabel (Capital)	30,447	33,297	36,949	40,569	45,190	186,451
Glan	45,340	49,482	54,791	60,053	66,769	276,435
Kiamba	27,833	30,376	33,635	36,866	40,989	169,699
Maasim	20,418	22,268	24,638	26,988	29,987	124,298
Maitum	25,206	27,495	30,428	33,336	37,048	153,512
Malapatan	35,261	38,576	42,824	47,035	52,410	216,106
Malungon	58,469	63,880	70,815	77,689	86,462	357,316
(c) Provincial Total	432,946	473,704	525,939	577,718	643,805	2,654,112
4 Project fund of IRA to Relevant Sector by Administrative Unit						
(a) province	7,599	8,333	9,274	10,207	11,398	46,812
(b) municipalities/city including barangays	9,206	10,055	11,143	12,222	13,600	56,226
Alabel (Capital)	1,218	1,332	1,478	1,623	1,808	7,458
Glan	1,814	1,979	2,192	2,402	2,671	11,057
Kiamba	1,113	1,215	1,345	1,475	1,640	6,788
Maasim	817	891	986	1,080	1,199	4,972
Maitum	495	540	597	655	727	3,014
Malapatan	1,410	1,543	1,713	1,881	2,096	8,644
Malungon	2,339	2,555	2,833	3,108	3,458	14,293
(c) Provincial Total	16,804	18,388	20,418	22,430	24,998	103,038

**Table 11.2.2 Projected Allotment of IRA to the Relevant Sector by Component (1999-2003)**

Unit: 1000 pesos

Allocation of IRA to Provincial Units	Urban Water Supply	Rural Water Supply	Urban Sanitation	Rural Sanitation	Total
1. Province	15,781	15,250	7,397	8,384	46,812
2. Municipalities					
Alabel (Capital)	1,439		2,410	3,609	7,458
Glan	2,735	3,676	1,779	2,867	11,057
Kiamba	3,819		2,969		6,788
Maasim	1,587		1,623	1,762	4,972
Maitum			2,904	110	3,014
Malapatan	3,459	1,350	2,162	1,673	8,644
Malungon	5,107	6,351	1,059	1,775	14,293
3. Provincial Total	33,927	26,628	22,304	20,180	103,038

This means that 20% of "20% Development Fund" from national IRA are 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 the provincial and 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 the other components, provincial IRA is distributed to municipalities in proportion to their required costs in Phase I (refer to Table 11.2.2).

Projected provincial IRA to the sector during the period of 1999-2003 is estimated at ₱ 103.04 million, which is equivalent to 3.8% of combination of provincial and municipal IRA. This percentage was arrived as a result of adjustment using IRA for those municipalities, of which required cost is lower than allotted IRA. With regard to the allocation to sub-sectors, urban water supply has the largest allotment of 32.93% (₱33.93 million

out of the total ₱103.04 million) and followed by rural water supply (25.84%). Urban sanitation is allotted ₱ 22.30 million (about 21.65%) and is larger than that for rural sanitation (₱ 20.18 million). The proportion of IRA allotment for the sub-sectors differs by municipality and depends on their priority sub-sectors.

In the allocation of municipal IRA, Malungon has the largest allotment with ₱14.29 million (25.4%) followed by the municipality of Glan (19.67%).

### 11.3 Additional Funding Requirements

Annual cost required for the whole province during the medium-term development is summarized in Table 11.3.1 referring to the study results in Chapter 10. The total cost required covers physical contingency; 10% of the direct cost and price contingency; 7% per year covering the direct cost and physical contingency, and value added tax. Details of implementation arrangements for annual investment are shown in Table 11.3.1, Supporting Report. The required cost excluding price contingency was also shown in the Table to compare with available IRA on a current price level.

Table 11.3.2 presents the additional funding requirements of the province on the current price level (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 portions are kept blank to supplement upon confirmation of additional funds available. Out of ₱252.38 million required for Phase I (1999-2003), IRA can fund only ₱103.04 million or 40.83% of the requirements. Hence, there is a big shortfall of ₱149.34 million in funding. It will become ₱183.37 million in consideration of price escalation with annual rate of 7%.

**Table 11.3.2 Additional Fund Requirement for the Medium-Term Plan**

Unit: 1,000 pesos

Item	1999	2000	2001	2002	2003	Total 1999-2003
Financing Requirement	30,528	60,553	61,096	59,903	40,301	252,380
Expected available fund						
National						
Local (IRA)	16,804	18,388	20,418	22,430	24,998	103,038
Others						
Total	16,804	18,388	20,418	22,430	24,998	103,038
Shortfall in funding	13,723	42,165	40,678	37,473	15,303	149,342
(Additional Fund Requirements)	14,684	48,275	49,832	49,120	21,463	183,373

Note: Shortfall in funding; figures on top indicate current year price level.  
figures below indicate escalated price at 7% per year

**Table 11.3.1 Financing Requirement by Sector Component for the Province**

Unit: 1,000 pesos

Sector Components	1999	2000	2001	2002	2003	Total 1999-2003	Total 2004-2010
<b>Direct Cost</b>							
<i>1. Direct Construction Cost</i>							
<i>Urban Water Supply</i>							
Level III System	0	11,610	17,415	17,415	11,610	58,049	421,832
<i>Rural Water Supply</i>							
Level II System	8,230	8,230	0	0	0	16,459	0
Level I Facilities	0	7,928	11,891	11,891	7,928	39,638	123,310
<i>Urban Sanitation</i>							
Household toilet	0	290	435	435	290	1,449	1,905
Public school toilet	0	2,193	3,289	3,289	2,193	10,964	23,024
Public toilet	0	2,959	4,439	4,439	2,959	14,796	18,237
Disinfection of Level I Deep Well and Shallow	17	31	31	31	31	141	0
<i>Rural Sanitation</i>							
Household toilet	0	1,179	1,769	1,769	1,179	5,897	20,370
Public school toilet	0	4,989	7,483	7,483	4,989	24,943	102,239
Disinfection of Level I Deep Well and Shallow	26	48	48	48	48	219	171
<i>Urban Sewerage</i>	N/A	N/A	N/A	N/A	N/A	N/A	616,543
Sub-total	8,273	39,456	46,800	46,800	31,226	172,555	1,327,632
<i>2. Procurement of Vehicle/Equipment/Maintenance tools</i>							
Well drilling rig and service truck with crane	0	0	0	0	0	0	26,782
Support vehicle	0	590	0	0	0	590	0
Well rehabilitation equipment	0	280	0	0	0	280	0
Maintenance tools	0	14	21	21	14	70	0
Water quality testing kit	0	3	5	5	3	15	0
Sub-total	0	887	26	26	17	955	26,782
<i>3. Water Quality Laboratory</i>	2,032	0	0	0	0	2,032	0
<i>4. Sector Management Cost</i>							
<i>Engineering Studies</i>							
Feasibility study and detail design	10,441	4,396	0	0	0	14,836	62,165
Construction supervision	329	1,516	1,781	1,781	1,187	6,666	27,629
<i>Institutional Development</i>	4,762	4,588	2,516	1,432	1,258	14,558	62,165
Sub-total	15,532	10,500	4,297	3,213	2,445	36,060	151,958
<b>Total Direct Cost</b>	<b>25,837</b>	<b>50,843</b>	<b>51,123</b>	<b>50,039</b>	<b>33,689</b>	<b>211,602</b>	<b>1,506,372</b>
<b>Contingencies</b>							
<i>1. Physical Contingency</i>	2,584	5,084	5,112	5,004	3,369	21,153	150,637
<i>2. Price Contingency</i>	1,989	8,104	12,655	17,107	14,918	54,773	N.A
<i>3. Value-Added Tax (VAT)</i>	2,107	4,626	4,861	4,861	3,243	19,697	N.A
<b>Total Investment Cost</b>	<b>32,517</b>	<b>68,657</b>	<b>73,751</b>	<b>77,010</b>	<b>55,218</b>	<b>307,226</b>	<b>1,657,009</b>
<b>Total Investment Cost (excluding Price Contingency)</b>	<b>30,528</b>	<b>60,553</b>	<b>61,096</b>	<b>59,903</b>	<b>40,301</b>	<b>252,380</b>	<b>1,657,009</b>

Note: Institutional development includes: 1. Capacity enhancement programs, 2. Community management program, 3. Health and hygiene education, 4. Water quality surveillance and 5. Administrative support.

Municipal achievement percentages in finance are shown in Table 11.3.3 in provision of available fund originating from IRA against Phase I financial requirements. The percentage of Maitum (100%) is the highest among municipalities, followed by Kiamba (96%). Majorities are in the range between 52% and 75% to the respective requirements, while the provincial average is 41%.

Table 11.3.3 Internal Revenue Allotment for Water Supply and Sanitation Sector by Municipality  
(Medium-term Development, 1999-2003)

Unit: P 1,000

Name of Municipality	IRA Allocation to Municipalities										Phase I Investment Cost Requirement (b)	Achievement Percentage (%) in Finance (a)/(b)		
	Urban Water Supply					Rural Water Supply							Available Fund of Municipality (a)	
	Allotted from Provincial Government	Allotted Municipality Fund	Total	Allotted from Provincial Government	Allotted Municipality Fund	Total	Allotted from Provincial Government	Allotted Municipality Fund	Total					
Alabell (Capital)	789	1,439	2,228			986	2,410	3,396	1,345	3,609	4,954	10,578	14,945	71
Glan	789	2,735	3,524			1,238	1,779	3,017	1,854	2,867	4,720	17,310	38,461	45
Kiamba	1,675	3,819	5,494			882	2,969	3,851				9,345	9,765	96
Maasin	2,451	1,587	4,038			856	1,623	2,478	835	1,762	2,597	9,113	12,649	72
Maitum							2,904	2,904	0	110	110	3,014	3,014	100
Malapatan	5,039	3,459	8,497			1,327	2,162	3,490	962	1,673	2,635	16,744	26,673	63
Mahungon	5,039	5,107	10,145			2,108	1,059	3,168	3,388	1,775	5,163	36,933	146,872	25
Total	15,781	18,146	33,927			7,397	14,907	22,304	8,384	11,796	20,180	103,038	232,379	41

## 11.4 Medium-Term Implementation Arrangements

The financial requirements to meet Phase I target coverage are substantial. However, projected funding available (IRA) in application of past trend revealed that considerable amount of additional fund must be arranged. Under this situation, reference scenarios are discussed with the 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 participation 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.

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 the available fund and sector targets.

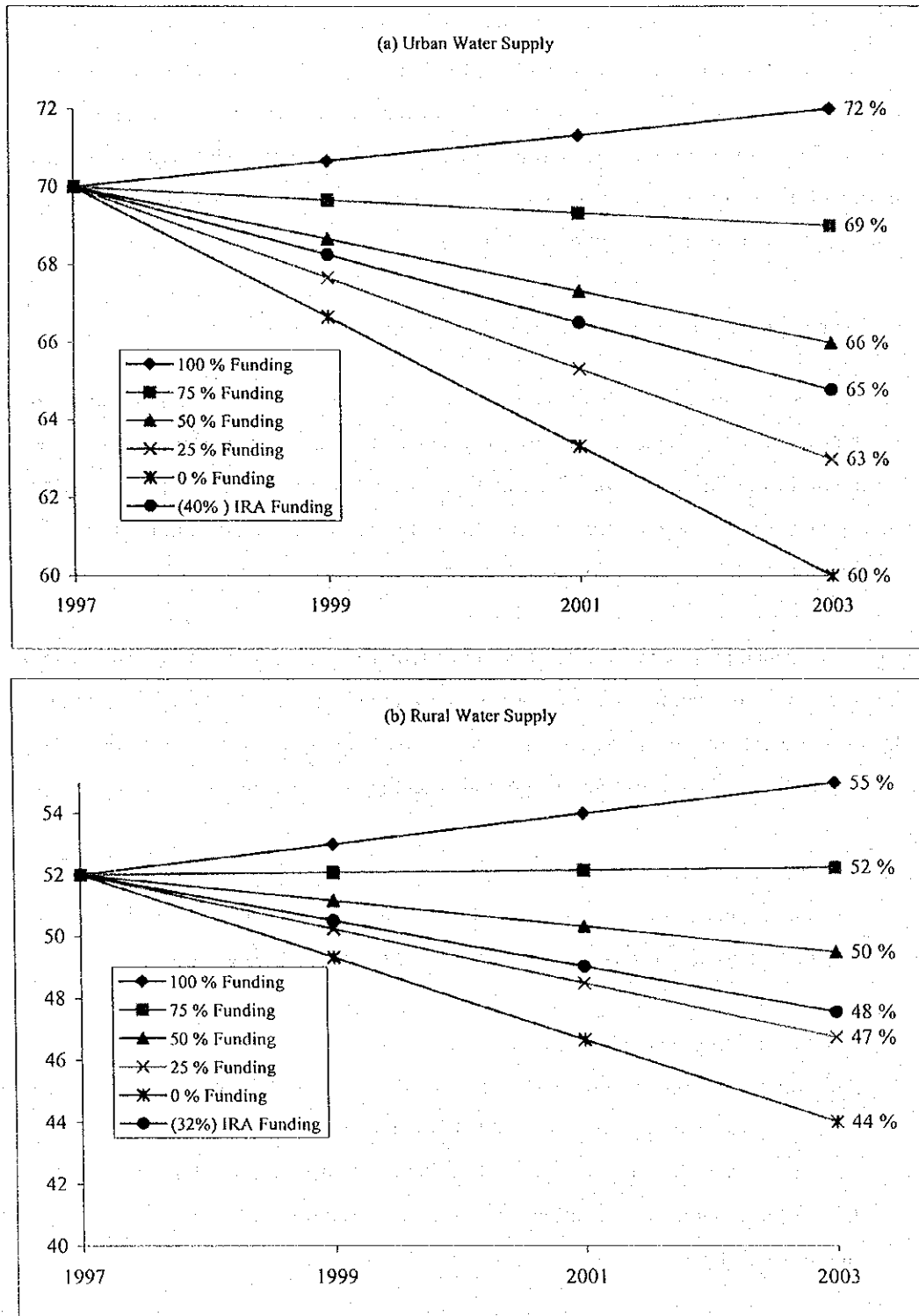
#### (1) The First Reference Scenario

No funding constraints are 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 %-funding ranges are considered. Urban and rural water supply coverage in the year 2003 is attained between 66-69% and between 50-52 %, respectively. For urban and rural sanitation (household toilets), coverage will reach 67-73% and 49-45%, respectively based on the assumption that required private investments are followed.

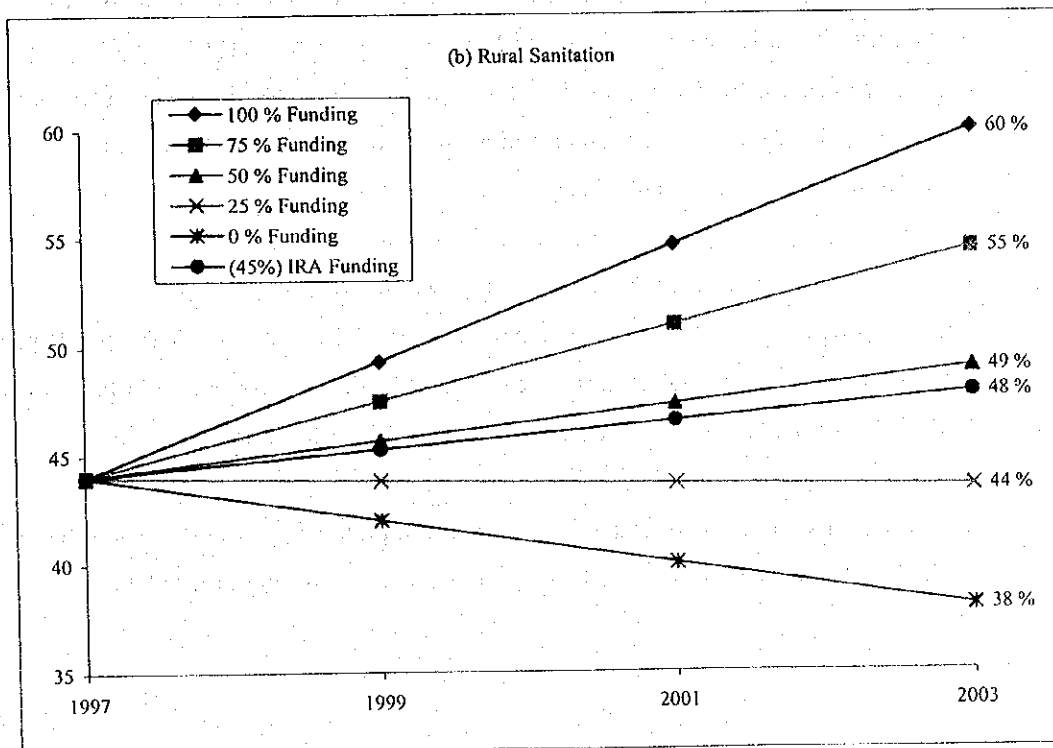
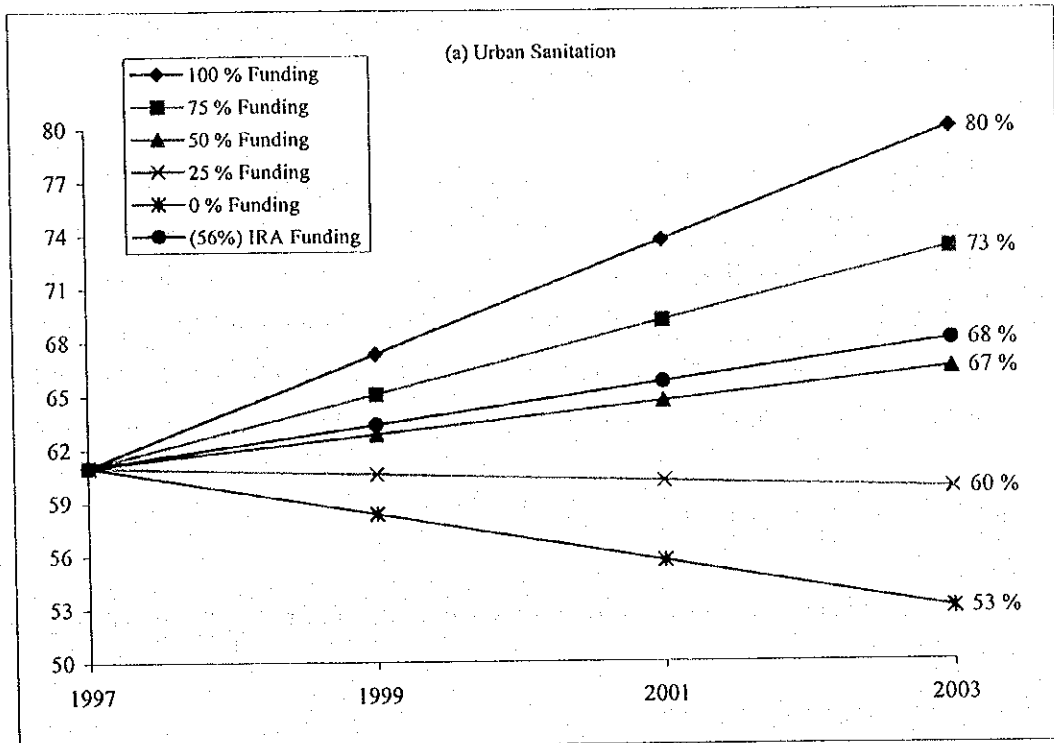
**Figure 11.4.1 Relation Between Funding Levels and Percent of Coverage for Water Supply Sector**



Note: Percentages of the coverage between 1997 and 2003 are simply prorated as the reference



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



Note: Percentages of the coverage between 1997 and 2003 are simply prorated as the reference

### (3) The Third Reference Scenario

In the scenario of 25% funding against the total requirements of Phase I, urban and rural water supply coverage in the year 2003 will be attained at 63% and 47%, respectively, while urban and rural sanitation coverage will be at 60% and 44%. All sub-sectors will not be able to keep current service levels.

The allocated IRA funding of urban and rural water supply in the year 2003 will be 40% and 32% which will cover 65% and 48% of the population. In order to attain the Phase I development target of 72% and 55% service coverage, it needs an additional IRA funding of 60% and 68%, respectively. While for urban and rural sanitation, the allotted IRA funding are 56% and 45%. To cover the Phase I development target of 80% and 60% of the population it requires an additional IRA funding of 44% and 55%, respectively.

## 11.4.2 Alternative Countermeasures

This sub-section presents the means of financing the shortfall for the investment program.

### (1) Acquisition of external funds

Foreign assistance has played a significant role in the development of the relevant sector 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.

As a matter of fact, Local Government Empowerment Fund (LGEF) was established in 1996 to provide a mechanism for channeling external grants and loans to 19 priority provinces under the Social Reform Agenda and/or those classified as 5th or 6th class LGUs (details are referred to Chapter 11.4.2, Supporting Report).

The foreign loan may be availed of at the maximum financing limit of 75% of the overall project cost. This can be secured by GOP and channeled through the MDF.

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

(3) Introduction of private sector

Privatization of Level III Waterworks System

Privatization of Level III systems helps expedite sector development and sustainability of the system as suggested by NEDA Board Resolution No. 4 (series 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 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 that will use the funds to be provided by other donors in the future.

For the urban water supply component, the ranking criteria comprise three essential 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. First, these factors are scored by the range of underserved and unserved percentage and totaled by municipality with the 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. There are four (4) municipalities identified as top four priority municipalities, namely: Malungon, Kiamba, Maasim and Malapatan.

With reference to the provincial fund allocation, it is assumed that 90% of the fund for urban water supply from provincial government is equally distributed up to the second ranking municipalities, while the remaining 10% are equally distributed to the rest of the municipalities. The result of distribution is shown in Table 11.4.2. The available funds for two (2) municipalities (Kiamba and Maasim) are just adequate to cover the Phase I investment requirements.

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). The top ranking municipality is Malungon, which indicate that they are given priority for investments in all sub-sectors, Alabel is the least priority in terms of investment.

Table 11.4.1 Municipal Investment Need Ranking for Urban Water Supply

Name of 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 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			
Alabel (Capital)	20	31	80	0.40	0.60	1.00	0.56	6	
Gian	27	36	77	0.60	0.60	0.80	0.63	5	
Kiamba	26	34	100	0.60	0.60	1.00	0.66	2	
Maasim	29	35	90	0.60	0.60	1.00	0.66	2	
Maitum	15	22	100	0.40	0.40	1.00	0.49	7	
Malapatan	26	34	94	0.60	0.60	1.00	0.66	2	
Malungon	49	60	100	1.00	0.80	1.00	0.93	1	
<b>Provincial Total</b>	<b>30</b>	<b>40</b>	<b>92</b>						

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 < %	31 < % < 40	21 < % < 30				
1.0	< %	61 < %	81 < %				
0.8	41 < % < 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: 1,000 pesos

Ranking	Name of Municipality	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 (%)				
6	Alabel (Capital)	789	5.0	1,439	2,228	2,884	77.27
5	Glan	789	5.0	2,735	3,524	9,513	37.04
2	Kiamba	1,675	10.61	3,819	5,494	5,494	100.00
2	Maasim	2,451	15.53	1,587	4,038	4,038	100.00
7	Maitum						
2	Malapatan	5,039	31.93	3,459	8,497	10,672	79.62
1	Malungon	5,039	31.93	5,107	10,145	52,478	19.33
Total		15,781	100	18,146	33,926	85,079	39.88

**Table 11.4.3 Municipal Investment Need Ranking**

Name of Municipality	Weighted Score by Sub-sector					Synthetic Municipal Investment Need Ranking
	Urban Water Supply	Rural Water Supply	Urban Sanitation	Rural Sanitation	Total Weighted Score	
Alabel (Capital)	0.14	0.05	0.05	0.05	0.29	7
Glan	0.16	0.10	0.25	0.25	0.76	3
Kiamba	0.17	0.10	0.25	0.10	0.62	4
Maasim	0.17	0.05	0.15	0.20	0.57	5
Maitum	0.12	0.05	0.25	0.15	0.57	6
Malapatan	0.17	0.10	0.25	0.25	0.77	2
Malungon	0.23	0.25	0.25	0.25	0.98	1

### 11.5 National Government Assisted Level I Water Supply and Sanitation Project

Of the overall project requirements for the medium-term development, those for Level I water supply and sanitation improvement with possible assistance from the GOP were studied in application of new cost-sharing arrangement. In 1997, the six provinces in the Luzon area (after completion of PW4SP) jointly submitted the project proposal, as a package of OECF assisted loan, to the NEDA through the DILG for the limited sub-sectors under the above conditions.

In the same context as proposed by the six provinces, project components with scope of work and financial viability were studied. The project is a part of medium-term development plan for Level I water supply and sanitation for limited classes of the municipality. The DILG is assumed to be Executing Agency and the province as the Implementing Agency in the meantime. The project may be merged together with those of the 1<sup>st</sup> batch provinces in the preparation of the PW4SP. The implementation of a packaged project may be realized in the near future.

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### **11.5 1 Project Components**

#### **(1) Water Supply and Sanitation Component**

Since all municipalities of the province are 2<sup>nd</sup> and 3<sup>rd</sup> class municipalities, there is no water supply component to meet the conditions in the provision of GOP-assisted Level I water supply in the rural areas (since these are limited to 5<sup>th</sup> and 6<sup>th</sup> class municipalities).

In sanitation sub-sector, there are four (4) municipalities such as Alabel, Kiamba, Maasim and Maitum to meet the condition for GOP-assisted projects (limited to 3<sup>rd</sup> to 6<sup>th</sup> municipalities). The sanitation component comprises 736 units of toilet bowl by distributing toilet molds (pour flush type only), 12 public toilets and 39 school toilets to the rural communities. With the integration of sanitation in the water supply projects, equal emphasis shall be given to sanitation component to ensure a greater health impact in the rural communities (refer to Table 11.5.2). School toilet will be constructed for public school in the rural areas, while public toilets will be constructed at public markets and bus terminals in urban areas. Health consciousness among the rural people will also be bolstered with the provision of health education training and IEC materials.

#### **(2) Consultancy Services**

Considering the magnitude and complexity of the project, consulting services and technical assistance may be availed to strengthen the executing and implementing agencies' capabilities in undertaking the project. The services will cover technical and institutional/community development aspects of the project.

During the detailed design stage, the services will cover finalization of construction sites based on site selection criteria to be developed, and preparation of bidding documents.

Guidelines and training program for strengthening the capability of implementing agencies and NGOs will be prepared and carried out. The construction stage will include assistance to LGUs in the supervision of construction work, community organizing and training.

### (3) Institutional Development

The project entails community development with people's active participation to assure the responsibility for O&M of the facilities and strengthening of existing institution/organization and/or formation of new ones. Thus, various activities will be undertaken from national to beneficiary levels. A sufficient cost for the purpose will be taken into account.

## 11.5.2 Project Requirements

The province will manifest its willingness to participate in the project entailing timely arrangements to meet NEDA requirements. These requirements are (1) RDC Endorsement, (2) ECC clearance and (3) Letter of Commitment. In addition, Memorandum of Agreement (MOA) on the cost-sharing and other arrangements required for the project will be exchanged between the province and concerned municipalities.

## 11.5.3 Funding Requirements

### (1) New Cost-Sharing Policy

The project finance was studied in accordance with the 50%-50% cost-sharing arrangement (50% is an average municipality's share among concerned municipalities) between the GOP and the LGUs. Financial sharing among the province, municipality and barangay shall then be clarified based on the estimated cost requirements through MOA.

The new policy of the national government grants for devolved activities stated that "this scheme shall be applied to all new ODA-assisted projects that are currently being packaged in support of LGUs". With regard to this, 50% national government share will be applied for Level I water supply (not applicable to the province) and even 70% of NG share for 5<sup>th</sup> and 6<sup>th</sup> classes of municipalities for sanitation component (refer to Table 11.5.1).



**Table 11.5.1 New Cost Sharing Arrangement between NG and LGUs**

Sector/Activity	LGU Income	Devised NG	Remarks
Water Supply: Level I only	1 <sup>st</sup> to 4 <sup>th</sup>	0	No GOP grants for Level II & III water
	5 <sup>th</sup> to 6 <sup>th</sup>	50	
Sanitary Support Faci. for Public Markets and Slaughterhouses	1 <sup>st</sup> to 2 <sup>nd</sup>	0	
	3 <sup>rd</sup> and 4 <sup>th</sup>	50	
	5 <sup>th</sup> and 6 <sup>th</sup>	70	

(2) Financial Viability

1) Conditions and Assumptions for Financial Study

- The cost sharing between the GOP and LGUs is assumed to be 50%: 50% of the overall project cost. It is assumed that the 50% share of LGU is further allocated to the LGUs and beneficiaries with 47% and 3% to the overall cost, respectively.
- The financial sources of the national government are the loan from foreign donor and GOP counterpart budget and LGUs from the budget of the province and municipalities. The part of beneficiaries is equity contribution including land purchase cost, right of way, labor, etc.
- The O&M cost is managed by the beneficiaries.

2) Project Cost

The cost estimate was made based on 1997 price level in Chapter 10. Then, physical and price contingencies as well as value-added tax were added. The project cost for the concerned municipalities in line with above conditions/assumptions is shown in Table 11.5.2. Overall aggregate cost for the implementation period of 1999 to 2003 is estimated at ₱34.38 million (₱24.56 million base cost in 1997 price level) referring to the implementation schedule of the project.

3) Financial Arrangement

The two alternatives for the financial arrangements are studied to prepare the required cost which is to be shared among concerned parties: i) Utilization of IRA only and ii) Utilization of IRA and MDF.

Table 11.5.2 GOP-Assisted Level I Water Supply and Sanitation Project Cost

(Unit: Peso)

Category	Qty.	Unit Cost	Amount	GOP		LGU
				Foreign Loan	GOP/CP	
<b>A. Const. &amp; Civil Works</b>						
<b>Water Supply</b>						
1. Deep Well (40m)	0		0			
2. Deep Well (80m)	0					
3. Deep Well (120m)	0					
4. Shallow Well	0		0			
5. Spring Development	0		0			
Sub-total a			0	0		0
<b>Sanitation</b>						
1. HH Latrines	736	700	515,200			
2. School Toilets	39	274,100	10,689,900			
3. Public Toilets	12	344,100	4,129,200			
Sub-total b			15,334,300	4,169,354		11,164,947
<b>Land acquisition</b>						
Land acquisition & Right of Way			0			0
Sub-total A			15,334,300	4,169,354		11,164,947
<b>B. Equip./Logistic Support</b>						
1. Support Vehicle	0	590,000	0	0		
2. Well Rehab. Eqt.	0	280,000	0	0		
3. Maintenance Tools	0	10,000	0	0		
4. Water Quality Test Kits	0	15,300	0	0		
Sub-total B			0	0		
<b>C. Consultancy Services</b>						
1. Hydrogeological Survey			0	0		
2. D/D and Const. Sv.			1,686,773	1,686,773		
Sub-total C			1,686,773	1,686,773		
<b>D. Institutional Devt.</b>						
1. Capacity Enhanc. Prog.	L.S.		3,200,000	2,650,000	550,000	
2. Commu. Manag. Prog.	66	10,770	710,820	238,836	471,984	
3. Health & Hygiene Educ.	66	1,800	118,800		118,800	
4. Water Quality Surveil.	0	700	0		0	
5. NGO Assistance	66	1,200	79,200		79,200	
6. Administrative Support	L.S.		1,200,000		1,200,000	
Sub-total D			5,308,820	2,888,836	2,419,984	
<b>E. Physical Contingency</b>			2,232,989	874,496	241,998	1,116,495
<b>Total (A+B+C+D+E)</b>			24,562,882	9,619,458	2,661,983	12,281,441
<b>GOP Total</b>					12,281,441	
<b>LGUs</b>						11,544,555
<b>Equity</b>						736,886
<b>LGUs + Equity</b>						12,281,441
<b>F. Others</b>						
1. Price Contingency			9,234,287	3,765,649	974,169	4,494,469
2. Value Added Tax (VAT)			585,613		585,613	
Sub-total F			9,819,900	3,765,649	1,559,782	4,494,469
<b>Grand Total</b>			34,382,782	13,385,108	4,221,765	16,775,910

Note: (1) Equity of users includes land cost, right of way, labor, etc., equivalent to 3% of direct cost (excluding item F).

(2) N.A.: Not applicable

(3) Assumption/Conditions for Cost estimate

1) Direct cost: based on 1997 price level.

2) Physical contingency: 10% of materials procured.

3) Price contingency: Forex 3%; local 7%; compounded annually, base year 1997

4) Value added tax; 10% materials produced.

Case 1: Utilization of IRA fund only

Currently, there is no projection on drastic increase of LGUs' budget through the future. Under such a condition, the following are considered.

- Potential fund is the IRA allotted annually from the GOP to municipalities and from province to municipalities. Municipal tax is negligible to be considered in allocation to the sector. The total municipal budget available was projected by sub-sector in Section 11.3.
- Arrangements by the municipalities with MDF and banks are disregarded considering the current financial capability of the municipalities.
- 5-year development program (from 1999 to 2003) is applied to increase project funds using the available IRA.

Applying the cost-sharing arrangement, the projected IRA available was estimated for the eligible municipalities in provision of national government grant fund based on the following conditions.

- a) The available fund of sub-sectors is a sum of municipal and provincial allotments of IRA.
- b) For sanitation sub-sector, IRA to municipalities with income classification of 3<sup>rd</sup> to 6<sup>th</sup> classes are counted. The IRA allotted to the province are divided into two groups; class 1<sup>st</sup> to 2<sup>nd</sup> and class 3<sup>rd</sup> to 6<sup>th</sup> in proportion to the construction cost required. The provincial IRA for the eligible municipalities is considered for this project.

The total IRA of the province available for the eligible municipalities in the sanitation sub-sector was estimated at ₱ 20.290 million as a total of 5-year development program, in combination of available IRA allotted to urban and rural sanitation (details are included in Table 11.5.1, 11.5.2 and 11.5.3, Supporting Report). The available IRA is shown below:

<u>Sub-sector</u>	<u>Provincial IRA</u>	<u>Municipal IRA</u>	<u>Total</u>
Rural Sanitation:	2,181,000	5,480,000	7,661,000
Urban Sanitation:	2,723,000	9,906,000	12,629,000
Total:	4,904,000	15,386,000	20,290,000

The cost comparison was made between the estimated project cost to be shared by the LGUs and available IRA of LGUs. Both the required cost and IRA are based on 1997 year price level without considering price escalation, but including physical contingency.

The comparison shows that the projected available IRA, as the provincial total aggregated in assumption of 5-year development programs, meets the cost to be shared by the respective LGUs. Table 11.5.3 shows the cost sharing for the project among the GOP, LGUs and beneficiaries (BWSAs). The GOP shall shoulder 50% of the overall project cost, utilizing the foreign-assisted loan of 39.2% or ₱9.6 million and 10.8% or ₱2.7 million of the government counterpart fund. The remaining 50% of the overall cost shall be shared between the LGUs with share of 47% or ₱11.5 million and beneficiaries to contribute 3% or ₱0.7 million.

**Table 11.5.3 Cost-Sharing for the Project (Case 1): 1997 price level**

Financial Source	x 1,000 Peso	Percentage		Remarks
GOP	2,662	10.8	50	GOP counterpart
	9,619	39.2		Foreign Loan
LGUs	11,545	47	50	IRA
	737	3		Equity of beneficiaries
<b>Total</b>	<b>24,563</b>	<b>100</b>		

Under this case, the IRA to be used by the LGU is 57% of the available IRA (₱20.3 million).

Case 2: Utilization of IRA and MDF

The utilization of the MDF is considered in case the LGUs will fail to furnish IRA for the project (even if estimated IRA available meets the required cost to be shared by the LGU). The foreign loan may be availed of at the maximum financing limit of 75% of the overall project cost.

Thus, the GOP shall possibly support the LGUs through the MDF in case that manageable IRA will not be able to fill up the cost requirement of the project. Table 11.5.4 shows the cost sharing scheme for the project between the GOP and the LGUs.

**Table 11.5.4 Cost Sharing for the Project (Case 2)**

Financial Source	x 1,000 Peso	Percentage			Remarks
GOP	2,662	10.8	5	50	GOP counterpart
	9,619	39.2	75		Foreign Loan
	8,794	(35.8)			Foreign Loan for MDF
LGUs	2,751	11.2	47	50	IRA
	8,794	35.8			MDF through Foreign Loan
	737	3			Equity of beneficiaries
<b>Total</b>	<b>24,563</b>	<b>100</b>			

Under this case, the IRA to be used by the LGU is 14% of the available IRA estimated in the previous study (₱20.3 million).

GOP can possibly finance up to ₱18.4 million or 75% of the total project cost in the form of a loan. Out of the GOP finance through the loan, ₱9.6 million or 39.2% of the total project cost shall be granted to the LGUs, aside from the 10.8% GOP counterpart fund. The remaining ₱8.8 million or 35.8% of the total project cost shall be utilized for financing the LGUs to secure their budgetary capacity through MDF.

4) Project Implementation Schedule

The proposed implementation of the project is scheduled for five years after hiring the consultants. Figure 11.5.1 presents the proposed schedule.

**Figure 11.5.1 Proposed Project Implementation Schedule**

Activities	1999				2000				2001				2002				2003					
	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th		
<b>Project Implementation</b>																						
1. Detailed Design	█																					
2. Community Development		█																				
3. PQ, Bidding and Contractor Selection				█																		
4. Procurement and Delivery of Materials and Equipment						█																
5. Construction of Sanitation Facilities (Construction supervisory services)									█													
6. Project Monitoring										█												

## 11.6 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, cost sharing between the LGUs and beneficiaries is required for the capital costs, even the portion of the beneficiaries is limited according to the current national policy. Currently, the percentage shared by the beneficiaries seems to be 3 to 5% of total requirements based on the experience. However, there are no Level I water supply facilities.

Beneficiaries are also responsible for all recurrent costs. Monthly recurrent cost is estimated at about 8 Pesos per household in the base year price level (refer to recurrent cost in Chapter 10). The figure will be increased up to about 12 Pesos per household in the year 2003, assuming an annual inflation rate of 7%. This monthly fee seems to be affordable to the users considering the current income level (refer to affordability in Chapter 6), but willingness to pay shall be promoted.

Depending on the users' income level, water charges shall be determined and agreed upon among the water users. The estimated water charge for O&M cost is ₱8 per household per month, which is less than 1% of the median monthly household income of ₱4,984 in 1997. However, the users will have to pay water charge of up to 2% of their monthly income or ₱100 /household/month to manage not only for repair of hand-pump, but also rehabilitation and reconstruction of deep well, assuming that well life is 20 years.

### (2) Level II water supply systems

Full cost recovery is required for all capital costs for Level II systems. The number of households to be covered is 1,724 to meet the target (refer to Table 8.5.1; population to be served of 8,897 people and household size of 5.16 persons). The average capital cost to be paid is estimated at ₱9,547 per household (refer to Chapter 10 Main Report and Supporting Report). Applying the capital recovery factor to the capital costs with conditions of 7% interest rate and 25 years repayment period, monthly payment amounts to about ₱68 per household.

The annual recurrent cost per household is estimated to be ₱180 (₱15/household/month) in the base year (refer to Chapter 10). It will reach to about ₱22.5 in the year 2003 at an annual inflation rate of 7%. Thus, the total amount of repayment and recurrent cost in the year 2003 is about ₱91, which is about 1% of the family income as shown below.

(a) Estimated water rate (flat rate; Pesos)	:	91.00
(b) Percentage of (a) to monthly median household income in 2003 <sup>1)</sup>	:	1.2%
(c) Percentage of (a) to monthly low household income in 2003 <sup>2)</sup>	:	1.4%

Notes:

- 1) Provincial average monthly median income in 2003 (₱7,480 per household) is derived from 1994 Family Income and Expenditure Survey considering annual inflation rate of 7%. The monthly median income in 1997 is ₱4,984.
- 2) Provincial average monthly low income in 2003 (₱6,523 per household) is estimated using the NSO data. The monthly low income in 1997 is ₱4,347.

### (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; 15m<sup>3</sup> per household) and projected income in year 2003. Total capital cost of Level III water supply system is ₱58,049 million for 3,085 households to be served. Assuming an annual inflation rate of 7% and 25 years repayment period, the annual capital cost to be paid is about ₱1,615 per household. The monthly capital cost to be paid by each household is about ₱135.

The monthly recurrent cost per household is estimated to be ₱57 (₱685/year; refer to recurrent cost in Chapter 10 where operating cost, spare parts, etc. is ₱1.308 million in base year for 1,908 households). Using an annual inflation rate of 7%, this recurrent cost is projected to be ₱85 per household in the year 2003.

The combined amount of capital repayment and recurrent cost in the year 2003 is ₱220 /household/month. The cost shall be recovered as a monthly water charge to be paid by users. The percentage of the water rate against income with more or less 5% is commonly affordable.

(a) Estimated water rate for 15 m <sup>3</sup> (Pesos) <sup>1)</sup>	:	220.00
(b) Estimated minimum water rate (1-10 m <sup>3</sup> ) (Pesos) <sup>2)</sup>	:	147.00
(c) Percentage of (a) to monthly median household income in 2003	:	2.9%
(d) Percentage of (a) to monthly low household income in 2003 <sup>3)</sup>	:	3.4%
(e) Percentage of (b) to monthly low household income in 2003	:	2.3%

Notes:

1. Water rate for the HH with monthly consumption rate of 10m<sup>3</sup> is estimated under the same assumption of a).
2. Monthly median household income is ₱6,523 and the low household income is ₱7,480 in the year of 2003.

#### (4) Sanitation

The provision of sanitary toilet facilities for public markets and schools is under LGUs in coordination with parent-teacher association. However, recurrent cost for the public markets shall be collected from the users including stakeholders of the market.

Household toilet shall be managed by individual household. However, the facility is costly with reference to the current income level, especially in the rural area (flush-type toilet; ₱21,300 and pour-flush toilet; ₱13,000). Governmental support is also limited to the provision of toilet bowl for pour-flush toilets as an incentive to increase the distribution of water-sealed toilets. Cost recovery in application of loan shall be considered.

Applying the capital recovery factor to the construction cost with assumptions of 7% interest rate and 5 years repayment period, monthly repayment amounts to about ₱468 for a flush type and ₱286 for a pour-flush type, respectively (details of unit cost are referred to in Chapter 10, Supporting Report). The percentages of repayment to household income in the year 2003 are calculated in the same manner as the study for Level III water systems and are shown below.

(a) Repayment for Flush Type (Pesos)	:	468
(b) Repayment for Pour Flush Type (Pesos)	:	286
(c) Percentage of (a) to monthly median household income in 2003 <sup>1)</sup>	:	6.3%
(d) Percentage of (b) to monthly low household income in 2003 <sup>2)</sup>	:	4.4%

To expedite the sanitation sector improvement, introduction of specific loans that are revolving in character with low interest rates 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.