## 9.5 Community Development Model

### COMMUNITY DEVELOPMENT MODEL STUDY (LEVEL I)
### MODEL SITE : BARANGAY TORRE, CURRIMAO, ILOCOS NORTE

### 1. Socio - Economic Profile of the Model Site

Barangay Torre is located approximately 1.2km south of the town proper of Currimao and about 28km from Laoag City. The barangay has a land area of 57.81 hectares. The model site is situated at the southwest portion of the barangay along the Currimao-Paoay-Balacad National Road. The topography of the area is mostly flat. Only three (3) percent of the land area is hilly. The type of soil in the barangay is mainly moderate indurated sandstone, silt stone and mud stone.

Barangay Torre has a total population of 378 and 83 households. The model site covers a population of 50 persons residing in ten (10) households. The average family income is about ₱6,000 per month.

### 2. Present Water Supply and Sanitation Situation

About 48 households in the barangay are being served by 19 units of Level I systems (mostly shallow wells). Another 14 households are being served by a Level III system being run by the municipal government. However, about 21 households (including those situated in the study area) have a hard time getting water due to their distance from the sources.

The government, through its Countryside Development Fund provided five (5) jetmatic pumps to serve five (5) of the barangay's existing shallow wells in 1995.

Of the eighty three (83) households in the whole barangay, fifty one (51) have water sealed toilets and two (2) have pit toilets. The other thirty (30) households, including those in the study area, either share toilet facilities or dump their wastes.

### 3. Institutional Analysis

There has been no prior attempt among the residents of the model site to mobilize their common resources and develop Level I water system for their use. They have been expecting that the government has the sole responsibility of providing water supply facilities to them.

Even the barangay council and the NGOs (Currimao Federated Women's League, Barangay Health Workers, and the Barangay Service Point Officers) have failed to provide the residents with the necessary water facilities. Only when the municipal coordinator (MLGC) discussed this issue that the residents regarded the problem of inadequate supply of water and became interested to participate in the construction of at least one deep well in the area.

## 4. Future Development Needs

### 4.1 Potential Source and Service Level

Although shallow well is the common source of water in the area, deep well is a potential source for the model site. One (1) gravel-packed well of about 50 meters deep could supply Level I service to the beneficiaries. However, careful survey shall be done since the site is located along the coastal area and is exposed to great possibility of saline water intrusion.

### 4.2 Formation of BWSA

Since no community organization is interested to put up Level I water supply facilities in the area, the barangay council shall initiate the formation of a Barangay Waterworks and Sanitation Association (BWSA) which shall oversee the installation as well as the operation and maintenance of water and sanitation facilities. The beneficiaries will be the core members of the association. The Municipal Sector Liaison (MSL), assisted by the Provincial Sector Team (PST), shall provide guidance in forming and developing the capability of the BWSA.

## 5. Capital and O&M Funds

### 5.1. Water Source Facility and Sanitary Toilet

Capital cost required to construct a deep well is estimated at about P175,000. A government policy provides that the capital costs for Level I system could be granted, although beneficiaries are responsible for all recurrent costs. The BWSA, with the assistance of MSL, shall negotiate for the needed funds for the project

Capital cost of household toilets shall be shouldered by the owners. If a family is not able to put up the initial capital cost, the association shall make arrangements for the extension of loan from the Provincial/Municipal Government or other sources (rural bank, cooperatives, etc.).

## 5.2. Operation and Maintenance

The community shall raise an amount equivalent to 1% of the capital cost of the water system (about ₱1,750), which shall be set aside for the operation and maintenance of the deep well. While operation and maintenance of household toilets shall be done by the owners.

## 6. Community Involvement

## 6.1. Pre-Construction (Project Preparation and Planning)

(1) The Barangay Council of Torre, in coordination with the MSL, shall initiate a meeting among the residents to discuss water and sanitation problems, opportunities in the sector and the implementation of water and sanitation projects.

(2) The residents shall organize a BWSA and discuss the implementation of Level I water project and the provision of sanitary toilets to the residents.

(3) The association shall determine the monthly contribution to cover operation and maintenance costs, as well as to establish a reserve fund.

(4) The BWSA shall submit a formal request to the MSL for technical and financial assistance in undertaking Level I project in the area. The request is supplemented by a commitment sheet signed by the association indicating their willingness to participate in the project, and their responsibility for the operation and maintenance. An initial reserve fund/membership fees will be collected.

(5) Upon approval of such a request, the association will mobilize its project team to assist in project implementation and in undertaking the following:

1) Conduct of community study (barangay diagnostics).
2) Identification of alternative sites available where the deep well would be installed. Women can advise the ideal site for the well.
3) After technical confirmation, negotiation for right of way

(6) Monitoring Activities: During this stage, the association will submit a progress report to MSL indicating the status of project planning and preparation. The report will include such information as the composition and membership of the BWSA, scope of project to be implemented, project specifications, work plan and schedule, and financial arrangement.

## 6.2. Construction (Project Implementation)

(1) During construction of facilities, the BWSA will assign team/s which shall coordinate and monitor the implementation of the project.

(2) Beneficiaries could provide labor during well construction, pump installation and preparation of drains and soak way pits.

(3) The community may be asked to contribute materials which are locally available. These may take in the form of gravel and sand, roofing sheets, timber or tools for excavation.

(4) The residents should provide information which may be necessary to expedite the construction of the facility.

(5) Monitoring Activities: The BWSA will have discussions with the MSL on the status of the project.

### 6.3. Post Construction (Operation and Maintenance)

(1) BWSA shall monitor proper disinfection of the wells immediately after their completion. It shall request PHO or the Rural Health Unit (RHU) to conduct water quality surveillance and disinfection of the wells, as required.

(2) BWSA shall monitor whether the facilities are properly maintained or not.

(3) Beneficiaries should be involved directly in the maintenance of the facilities. They shall practice to keep the premises of the water facilities clean, sanitary and free from excess water. They shall report breakdowns immediately so that necessary repair work must be undertaken at once.

(4) Operation and maintenance cost will be shouldered by the beneficiaries through their membership fees. The association shall regularly collect monthly contribution and deposit them in the bank. Recurrent costs will also be charged from of this fund.

(5) The members should provide free labor in the repair and rehabilitation of the facilities.

(6) Maintenance of household toilets should be the responsibility of the owners.

(7) Monitoring Activities: The BWSA is required to submit annual report to MSL. The first post-construction report should indicate well log data, number of sanitary toilets constructed, overall cost, any project modification, and maintenance activities. Succeeding reports will indicate breakdowns and repairs, expenses, problems encountered in operating the facilities and, if possible, recommendations, and other relevant data.

## 7. Project Elements

### 7.1. Health and Hygiene Education

Health and hygiene education should be launched as early as the initial planning of the project. It would be a good entry point in discussing existing water and sanitation issues in the community prior to the formation of BWSA. The MSL shall conduct a continuous health education campaign in the barangay. New facilities to be established would provide significant opportunities to discuss hygiene practices and identify areas for improvement. The barangay primary/elementary school shall adopt DECS' Teacher-Child-Parent Approach learning program which involves the family members in teaching practical lessons in hygiene education.

These efforts can be reinforced by multi-media campaign being organized by other government institutions such as the DOH and the Philippine Information Agency.

### 7.2. Human Resources Development and Training

The members of the BWSA shall be trained on basic hand pump operation and maintenance. Workshops and on-the-job training will be conducted by the MSL. Qualified BWSA members will be enrolled at National Manpower and Youth Council (NMYC) which conducts technical courses. Internship of graduates shall be arranged with appropriate institutions.

### 7.3. Women's Involvement

Women must be involved from the start of the project and in the operation and maintenance of the facilities. They should therefore be included in training programs conducted for the members. The women sector must also spearhead in health and hygiene education.

## COMMUNITY DEVELOPMENT MODEL STUDY (LEVEL II)
## MODEL SITE : BADOC, ILOCOS NORTE

### 1. Socio - Economic Profile of the Model Site

The proposed model site covers three barangays in the poblacion of Badoc, namely, Alogong, Garreta, and Canaan. These barangays are located at the town's commercial center where the municipal public market and plaza are located. The areas are relatively flat and are underlain by unconsolidated clay, silt, sand and gravel.

The present population of the three (3) barangays is 2,747 and 550 households. Residents are either locally employed or engaged in commercial trading and farming activities. Family income level is estimated at P6,000 per month. Majority of the houses are built with strong materials particularly concrete.

Non-government organizations in the area consist mostly of multi-purpose cooperatives which are federated into one umbrella organization - the Badoc Federation of Multi-Purpose Cooperatives.

### 2. Present Water Supply and Sanitation Situation

There are four (4) existing free flowing wells where the residents in the study area get their drinking water. The wells have an estimated combined discharge of 1 lps. For washing and other purposes, residents have their own deep wells or shallow wells. There was a time when residents got their water through individual connections provided by the Badoc Water District, but this service stopped when the WD ceased its operation.

Based on the existing sources, it can be surmised that there is enough supply of drinking water in the area. However, the water that the people get from the wells is of dubious quality. Two of the wells have high iron content which give yellowish color and rusty odor to the water. At the same time, some people spend more time in getting drinking water since the wells are located far from their houses. The pressure head of these wells are not enough to distribute the water to all proposed faucets to be installed in the area.

Sanitation is not perceived to be a problem in the area. All households have individual sanitary toilets. Toilets are also found in the schools and public utilities.

## 3. Institutional Analysis

In mid 80s, the municipal government formed the Badoc Water District to develop and manage a Level III water system for the poblacion. The WD was able to develop the wells and constructed two elevated steel tanks to distribute water to individual house connections. However, most of the concessionaires failed to pay their monthly water bills. As a result, the WD accumulated debts (electric bill, loan amortization, etc.) prompting it to stop its operation. In 1993, the Highlander Multi-Purpose Cooperative (HMPC) attempted to take over the operation of the water system but subsequently backed out because it had to assume loans and obligations acquired by the water district. Attempts of the municipal government to revive the water district had likewise faced protests from the residents. People have been used to getting water from the wells free, even if the process involves more time and effort. This is one critical institutional problem that could be encountered in the implementation of the project especially if the people's direct involvement would entail financial contribution.

## 4. Future Development Needs

### 4.1 Potential Source and Service Level

Level II system is appropriate for the model site since there are already existing water sources and storage facilities in the area constructed by the defunct water district. With some improvement in these existing facilities, the people can avail of safe water from communal faucets to be installed adjacent to their houses. A study shall be undertaken to determine the scope of developing the water system.

### 4.2 Institutional Arrangement

Prior to the implementation of the proposed project, the MSL must conduct a series of people's consultations and value re-orientation activities to change the attitude of the residents towards the importance of safe water and the responsibilities of every individual to obtain safe drinking water. The commitment of the people to the project must first be obtained. Simultaneous with this activity, the MSL and the residents must determine which organization is appropriate to take the lead in implementing the project and in managing the system.

Reviving the water district could negatively affect the project due to the bad impression it has on the people. Based on the interview with the residents, the Highlander Multi-Purpose Cooperative (HMPC) which has attempted to take over the operation of the defunct system, has a good reputation in the area. In this regard, the HMPC can be the appropriate organization to assume the function of Rural Waterworks and Sanitation Association (RWSA). A water committee can be organized within its existing structure to supervise all activities related to water supply and sanitation. Members of the RWSA will consist of main beneficiaries of the project.

## 5. Capital and O&M Funds

### 5.1. Water Supply System

Capital cost required to construct Level II system in the study area is estimated at about ₱2,500,000. However, this could be lowered due to the existence of necessary facilities such as pumps, tanks and pipelines. The priority structure to be built is the storage ground reservoir. The existing pumps will be rehabilitated and distribution pipelines shall be restored. Number of faucets shall be determined based on the capacity of the source and on certain criteria to be determined by the RWSA.

With the assistance of the MSL and PST, the RWSA shall source out funds to finance the project. Monthly fees, to be decided during the organization of the RWSA shall be collected from the members for operation and maintenance of the system as well as for other recurrent costs.

### 5.2. Household Sanitary Toilets

Capital cost of individual household toilets (pour flush type) shall be shouldered by the homeowners. Should a family is not able to put up the initial capital cost, the RWSA can make arrangements with various institutions for the extension of loan. Policies on interest rates and repayment scheme adopted by the institutions shall be followed.

### 5.3. Operation and Maintenance

As mentioned earlier, the water charges to be collected by the association from the water consumers will cover costs of operation and maintenance.

## 6. Community Involvement

### 6.1. Pre-Construction (Project Preparation and Planning)

(1) The MSL, in coordination with the PST, shall initiate meetings among the residents of the three barangays to discuss water and sanitation problems and needs.

(2) The Highlander Multi-Purpose Cooperative shall be strengthened to assume the role of RWSA which shall implement water and sanitation projects and to comply with the requirements in acquiring loans.

(3) The community determines the scope of project they would undertake and commits full support to such undertaking. RWSA assigns committees to coordinate the project

(4) The association then submits a formal request to the municipality for further technical and financial assistance in undertaking the project. The request is supplemented by a commitment sheet signed by the association indicating their willingness to participate in the project and their responsibility for the operation and maintenance. A reserve fund representing the initial contribution/membership fee of beneficiaries will be collected.

(5) Upon approval of such request, the association will mobilize its team to assist for the following:

1) preparation of a work plan including time frame and budget;
2) undertaking community study (barangay diagnostics);
3) detailed planning and as a baseline for evaluation including technical and social aspects
4) negotiation for the right of way
5) short listing of local contractor/s for the conduct of bidding

(6) RWSA shall meet with the beneficiaries to set water rates which will be utilized for loan repayment and for the system's operation and maintenance.

(7) Monitoring Activities: During this stage, the association will submit a progress report to MSL indicating the status of project planning and preparation. The report will include such information as the composition and membership of RWSA, scope of project to be implemented, project specifications, work plan and schedule, and financial arrangement.

### 6.2. Construction (Project Implementation)

(1) The beneficiaries shall provide self-help labor in the following activities:

1) clearing of the source premises
2) construction of ground reservoir

3) digging and pipe laying
4) installation of communal faucets and meter
5) excavation of pits and construction of latrine structures

(2) Granting of right of way for pipe laying, construction of pump house and for installation of other necessary facilities.

(3) Dissemination of information on the on-going construction works.

(4) Provision of the access road to contractor/s.

(5) Monitoring Activities: The RWSA will coordinate with MSL on the construction activities. It shall submit a report containing information such as modifications, project team composition, people's contributions (cash, materials and labor), etc.

### 6.3. Post Construction (Facility Operations)

(1) The RWSA should monitor the practices of the users to ensure proper handling of the facilities as well as prudent use of water. Every member-consumer should also cooperate with RWSA to protect from loss or damage of communal faucets.

(2) The association should assign person/s to regularly monitor the performance of the water source facilities and public faucets. Water samples should be collected periodically in cooperation with the Provincial Health Office (PHO) or Rural Health Unit (RHU)

(3) The members should pay their membership dues/water consumption charges regularly in order to maintain good service of the water system.

(4) Maintenance of individual household toilets shall be the responsibility of the owners.

(5) Monitoring Activities: The association is required to submit quarterly reports to MSL. The first post-construction report should indicate scope of work (water system) such as: scope water source development undertaken, number of communal faucets installed, length and diameter of pipes laid, sanitary toilets constructed, any modifications, overall cost, and maintenance activities. Succeeding reports will indicate breakdowns and repairs, expenses, problems encountered in operating the system and, if possible, recommendations.

## 7. Project Elements

### 7.1. Health and Hygiene Education

The RWSA, assisted by the MSL, shall conduct hygiene education in the project area. This could be the entry point for the improvement of water and sanitation systems in the area.

New facilities provide opportunities to discuss hygiene practices and identify areas for improvement. The barangay elementary school in the barangay adopts DECS' Teacher-Child-Parent Approach which involves parents and other members of the family in teaching practical lessons in hygiene education.

These efforts of the MSL and the school shall be reinforced by multi-media campaign being implemented by other government institutions such as the DOH and the Philippine Information Agency.

### 7.2. Human Resources Development and Training

Members of the RWSA will be trained on basic utility operation and maintenance. Workshops and on-the-job training will be conducted by the PST/MSL. Qualified members will be enrolled at the National Manpower and Youth Council (NMYC) which conducts regular training course on Plumbing. Internship of graduates can be arranged with the nearest water district or the municipal waterworks system.

### 7.3. Women's Involvement

Women must be involved from the start of the project and on the operation and maintenance of the facilities. They should therefore be included in training programs conducted for the members. The women sector must also spearhead in health and hygiene education.

## COMMUNITY DEVELOPMENT MODEL STUDY (LEVEL III)
## MODEL SITE : BARANGAY SALSALAMAGUI, VINTAR, ILOCOS NORTE

### 1. Socio - Economic Profile of the Model Site

Barangay Salsalamagui has a total land area of 634 hectares. It is composed of two (2) sitios namely, Sitio Magabobo and Salsalamagui East. The terrain is generally characterized as hilly to mountainous. The hilly sector is mainly composed of Middle to Late Miocene sediments. On the other hand, the flat portion is covered with alluvial deposits of Vintar river.

The study area has a population of 926 and 214 households. Rice farming remains the primary source of livelihood but garlic and onion cultivation also contribute to the income of the residents.

### 2. Present Water Supply/Sanitation Situation

The residents obtain water supply from four (4) spring sources located about 750m from the area. The springs were not properly developed and cannot adequately serve the area. During dry season, the discharges of the springs decrease. Water is transmitted to three poorly-constructed ground reservoirs, located high enough to distribute the water by gravity. There is no main distribution line from the reservoirs. Several pipelines are directly connected to the reservoirs with each pipeline serving about four to five households. Connections are not properly done, causing leaks on the reservoir. The presence of calcium carbonate in the pipes causes clogging thereby decreasing the flow of water to the service area. There are no fees regularly collected from the water users. However, the residents contribute when there is a need to repair the facilities.

The health and sanitation situation in the area is generally fair as almost all the residents have access to sanitary facilities. No major water-related problems have been recorded in the area.

### 3. Institutional Analysis

There are three community-based organizations (CBOs) in the area, namely, Rural Improvement Club, Women's Club and the PTCA. However, they have not been active on water and sanitation activities. The barangay council has shown concern to improve the

water supply service in the area. It has consulted the residents for possible improvement projects and the municipal government for available technical and financial assistance. The residents have expressed willingness to participate in any project to improve the water system.

## 4. Future Development Needs

### 4.1. Potential Source and Service Level

There is a potential to develop a Level III system in the model site. But since the spring sources cannot adequately serve the present water demand in the area, new sources have to be developed. There are no springs in the immediate surrounding that have high and continuous discharge. This is expected considering the small catchment area of the basin that recharge the springs.

An alternative source to augment the springs is a deep well which can be used intermittently, depending on the rate of supply of the springs. Technical studies shall be conducted to determine appropriate improvement programs to be undertaken.

### 4.2. Identification of Community Organization

As a pre-requisite to the development of the water and sanitation facilities in the area, a community organization should be appointed by the residents to oversee the project as well as to operate and maintain the Level III system. In Barangay Salsalamagui, there is no active organization which can assume the responsibility of implementing the project. As such, there is a need for the residents to form the Rural Waterworks and Sanitation Association (RWSA). The barangay council, with the assistance of the Municipal Sector Liaison (MSL), shall supervise the formation of the RWSA.

## 5. Capital and O&M Funds

### 5.1. Water System

Capital cost required to construct the Level III system for the study area shall be determined after the conduct of feasibility study and detailed design. The capital cost will be shouldered by RWSA through a loan from the municipal government, the Provincial Trust Fund or from other sources. Water charges will be collected from the consumers to cover the cost of operation and maintenance, and for loan amortization.

## 5.2. Individual Sanitary Toilets

Capital cost of household toilets shall be shouldered by the homeowners. If a member could not put up the initial capital cost, the association can extend loan to the member, terms of payment of which shall be decided by the cooperative.

## 6. Community Involvement

### 6.1. Pre-Construction (Project Planning and Preparation)

(1) The barangay council shall facilitate the holding of a meeting among the residents. The people shall discuss the water and sanitation problems and needs in the community and decide among themselves the action that will be taken to solve the present problems.

(2) The people shall organize the RWSA to assume the management, operation and maintenance of the water supply system. Members of the association shall be the concessionaires. The association shall elect its officers and a manager who will supervise the operation of the system. It shall also appoint committees which shall be responsible for all the undertakings of the association.

(3) The members shall pay their initial membership dues .

(4) The association shall request the municipal/provincial government or other sector agencies to provide assistance in determining the scope of water and sanitation project they shall undertake. The MSL, assisted by the Municipal Engineers Office (MEO), shall present to the residents alternative schemes in developing a Level III water system for the barangay

(5) The association submits a formal request to the municipal and/or provincial government for the necessary financial loan in undertaking the project. The request is supplemented by a commitment sheet signed by the association indicating their willingness to participate in the project and their responsibility for the operation and maintenance. A reserve fund representing the initial contribution/membership fee of beneficiaries will be collected.

(6) Upon approval the loan request, the association will mobilize teams for the following:

1) conducting feasibility study
2) negotiation for the acquisition of the right of way
3) design of the system
4) project bidding
5) project mobilization

(7) The members shall also attend all briefings and presentations related to the project

(8) Monitoring: During this stage, the association shall submit a progress report to the MSL indicating the status of project planning and preparation. The report will include, among others, the composition and membership of the RWSA, scope of project to be implemented, project specifications, work plan and schedule, delineation of responsibilities, and financial arrangements.

## 6.2. Construction (Project Implementation)

(1) Since the construction of the water system will be undertaken by a qualified contractor, the direct involvement of the residents shall be limited to the following:

1) Granting of right of way for pipe laying, construction of pump house and installation of other necessary facilities
2) Dissemination of information on the construction activities
3) Compliance with temporary traffic re-routing
4) Provision of the access road for contractor/s
5) Monitoring of inconveniences caused by the construction
6) Early application for water connection

(2) Monitoring: The contractor will submit to the association progress reports on the status of the construction project. The report shall include any modification, problems being encountered, and possible solutions. The RWSA shall provide the MSL with the consolidated reports.

## 6.3. Post Construction (Operation and Maintenance)

(1) The facilities shall be operated and maintained by highly-trained personnel and technicians to be assigned by the RWSA. However, the users should participate in the operation and maintenance of the systems through the following:

1) Paying of water bills on time
2) Reporting of water leaks at the main pipeline
3) Giving access to meter readers
4) Conservation of water
5) Campaign for more service connections
6) Monitoring of water quality
7) Attending at association meetings and other activities
8) Safe disposal of waste water
9) Dissemination of health and hygiene information

(2) Individual household toilets shall be the responsibility of the owners.

(3) Monitoring Activities: The association shall submit quarterly reports to the MSL. The first post-construction report should be submitted immediately upon the completion of the project. It should indicate scope of work (water system), sanitary toilets constructed, modifications (if any), overall cost (both for water system and toilets), and timetable of maintenance activities. Succeeding reports will indicate number of connections, breakdowns and repairs, expenses, problems encountered in operating the system and, if possible, recommendations, and other relevant data.

## 7. Project Elements

### 7.1. Health and Hygiene Education

Health and hygiene education should be launched as early as the initial planning of the project. It would be a good entry point in discussing water and sanitation issues. The MSL, together with the Rural Health Unit (RHU) should conduct a continuous health education campaign in the barangay. Special presentations can also be done by the RHU staff during meetings of the group. New facilities can provide opportunities to discuss hygiene practices and identify areas for improvement. Meanwhile, the elementary schools in the three barangays shall adopt DECS' Teacher-Child-Parent Approach which involves parents and other members of the family in teaching practical lessons in hygiene education. This local effort can be reinforced by multi-media campaign being organized by other government institutions such as the DOH and the Philippine Information Agency.

### 7.2. Human Resources Development and Training

Training and human resource development programs shall be directed to those who would manage, operate and maintain the water systems. The officers and management staff of the association shall be sent to the provincial government/other relevant central government agencies to attend basic and advanced training programs such as policy making, financial management, systems design, construction supervision, among others. Qualified members will also be enrolled at the National Manpower and Youth Council (NMYC) Training Center which conducts water system-related courses. Internship of graduates can be arranged with the municipal/provincial government.

### 7.3. Women's Involvement

The women must be involved from the start of the project and in the operation and maintenance of the system. They should therefore be included in training programs conducted for the members. The women sector must likewise spearhead in health and hygiene education campaign in the community.

# 10. COST ESTIMATES FOR FUTURE SECTOR DEVELOPMENT

## 10.2 Assumption for Cost Estimates

### 10.2.1 Unit Construction Cost

**Table 10.2.1 Unit Cost of Level I (Deep Well - 30m Depth)**

(Cost: Peso)

| Description | Quantity | Unit | Unit Cost | Cost |
|---|---|---|---|---|
| **A. Mobilization/Demobilization** | | L.S. | | 3,300 |
| **B. Drilling of Well & Installation of Steel Casing/Screen** | | | | |
| 1. Materials | | | | |
| (1) 100mm x 3m Steel Casing with coupling | 7 | pcs. | 2,625 | 18,375 |
| (2) 100mm x 3m Steel Casing with one end closed | 1 | pc. | 2,719 | 2,719 |
| (3) 100mm x 3m Low Carbon Steel Screen | 2 | pcs. | 4,313 | 8,626 |
| 2. Labor, Fuel, Lubricant and others | | | | |
| Well Drilling for 30 m depth at 200mm borehole | 30 | m | 1,100 | 33,000 |
| 3. Freight Cost (9% of Materials) | | L.S. | | 2,675 |
| **Sub-Total of B** | | | | 65,395 |
| **C. Well Development** | | L.S. | | 5,000 |
| **D. Gravel Packing, Installation of Handpump and Construction of Platform** | | | | |
| 1. Materials | | | | |
| (1) Improved Deep Well Cylinder Pump (Malawi Type) | 1 | set | 9,000 | 9,000 |
| (2) 63mm x 6m GI Pipe with coupling | 4 | pcs. | 1,706 | 6,824 |
| (3) #10 Sieved Gravel | 0.53 | cu.m | 870 | 461 |
| (4) Coarse Sand | 1 | cu.m | 304 | 228 |
| (5) Cement for Sanitary Seal | 3 | bags | 117 | 351 |
| (6) Pump Base and Platform | | | | |
| 1) Cement | 4 | bags | 117 | 468 |
| 2) Gravel | 2 | cu.m | 385 | 770 |
| 3) Sand | 1 | cu.m | 304 | 304 |
| 4) Plywood (1,200mm x 2,400mm x 6mm) | 1 | pc. | 250 | 250 |
| 5) Form Lumber (50mm x 75mm x 1,800mm) | 6 | pcs. | 45 | 270 |
| 6) Nail | 1 | kg. | 32 | 32 |
| Sub-Total of D-1 | | | | 18,958 |
| 2. Labor (40% of D-1.) | | L.S. | | 7,583 |
| 3. Freight Cost (9% of Materials) | | L.S. | | 1,706 |
| **Sub-Total of D** | | | | 28,247 |
| **E. Indirect Cost** | | | | |
| Profit (10% of A, B, C & D) | | L.S. | | 10,194 |
| VAT (14% of Profit & Labor) | | L.S. | | 7,109 |
| **Sub-Total of E** | | | | 17,303 |
| **Total of Construction Cost (A+B+C+D+E)** | | | | 119,245 |
| **F. Estimated Government Expenses** | | | | |
| 1. Preliminary & Detailed Engineering Cost | | L.S. | | 3,000 |
| 2. Construction Supervision | | L.S. | | 2,000 |
| 3. Water Quality Analysis | | L.S. | | 1,088 |
| **Sub-Total of F** | | | | 6,088 |
| **GRAND TOTAL** | | | | 125,333 |
| **SAY** | | | | 125,300 |

Note: L.S. - Lump Sum
Source: DPWH standard price in 1994
Unit Cost: Adjusted to 1995 Price Level

## Table 10.2.2 Unit Cost of Level I (Deep Well - 50m Depth)

(Cost: Peso)

| Description | Quantity | Unit | Unit Cost | Cost |
|---|---|---|---|---|
| **A. Mobilization/Demobilization** | | L.S. | | 3,300 |
| **B. Drilling of Well & Installation of Steel Casing/Screen** | | | | |
| 1. Materials | | | | |
| (1) 100mm x 3m Steel Casing with coupling | 14 | pcs. | 2,625 | 36,750 |
| (2) 100mm x 3m Steel Casing with one end closed | 1 | pc. | 2,719 | 2,719 |
| (3) 100mm x 3m Low Carbon Steel Screen | 2 | pcs. | 4,313 | 8,626 |
| 2. Labor, Fuel, Lubricant and others | | | | |
| Well Drilling for 50 m depth at 200mm borehole | 50 | m | 1,100 | 55,000 |
| 3. Freight Cost (9% of Materials) | | L.S. | | 4,329 |
| **Sub-Total of B** | | | | **107,424** |
| **C. Well Development** | | L.S. | | **5,000** |
| **D. Gravel Packing, Installation of Handpump and Construction of Platform** | | | | |
| 1. Materials | | | | |
| (1) Improved Deep Well Cylinder Pump (Malawi Type) | 1 | set | 9,000 | 9,000 |
| (2) 63mm x 6m GI Pipe with coupling | 6 | pcs. | 1,706 | 10,236 |
| (3) #10 Sieved Gravel | 1.0 | cu.m | 870 | 870 |
| (4) Coarse Sand | 1 | cu.m | 304 | 192 |
| (5) Cement for Sanitary Seal | 3 | bags | 117 | 351 |
| (6) Pump Base and Platform | | | | |
| 1) Cement | 4 | bags | 117 | 468 |
| 2) Gravel | 2 | cu.m | 385 | 770 |
| 3) Sand | 1 | cu.m | 304 | 304 |
| 4) Plywood (1,200mm x 2,400mm x 6mm) | 1 | pc. | 250 | 250 |
| 5) Form Lumber (50mm x 75mm x 1,800mm) | 6 | pcs. | 45 | 270 |
| 6) Nail | 1 | kg. | 32 | 32 |
| Sub-Total of D-1 | | | | 22,743 |
| 2. Labor (40% of D-1.) | | L.S. | | 9,097 |
| 3. Freight Cost (9% of Materials) | | L.S. | | 2,047 |
| **Sub-Total of D** | | | | **33,887** |
| **E. Indirect Cost** | | | | |
| Profit (10% of A, B, C and D) | | L.S. | | 14,961 |
| VAT (14% of Profit & Labor) | | L.S. | | 11,068 |
| **Sub-Total of E** | | | | **26,029** |
| **Total of Construction Cost (A+B+C+D+E)** | | | | **175,640** |
| **F. Estimated Government Expenses** | | | | |
| 1. Preliminary & Detailed Engineering Cost | | L.S. | | 3,000 |
| 2. Construction Supervision | | L.S. | | 2,000 |
| 3. Water Quality Analysis | | L.S. | | 1,088 |
| **Sub-Total of F** | | | | **6,088** |
| **GRAND TOTAL** | | | | **181,728** |
| **SAY** | | | | **181,700** |

Note: L.S. - Lump Sum

Source: DPWH standard price in 1994

Unit Cost: Adjusted to 1995 Price Level

## Table 10.2.3 Unit Cost of Level I (Deep Well - 70m Depth)

(Cost: Peso)

| Description | Quantity | Unit | Unit Cost | Cost |
|---|---|---|---|---|
| **A. Mobilization/Demobilization** | | **L.S.** | | **3,300** |
| **B. Drilling of Well & Installation of Steel Casing/Screen** | | | | |
| 1. Materials | | | | |
| (1) 100mm x 3m Steel Casing with coupling | 21 | pcs. | 2,625 | 55,125 |
| (2) 100mm x 3m Steel Casing with one end closed | 1 | pc. | 2,719 | 2,719 |
| (3) 100mm x 3m Low Carbon Steel Screen | 2 | pcs. | 4,313 | 8,626 |
| 2. Labor, Fuel, Lubricant and others | | | | |
| Well Drilling for 70 m depth at 200mm borehole | 70 | m | 1,100 | 77,000 |
| 3. Freight Cost (9% of Materials) | | L.S. | | 5,982 |
| **Sub-Total of B** | | | | **149,452** |
| **C. Well Development** | | **L.S.** | | **5,000** |
| **D. Gravel Packing, Installation of Handpump and Construction of Platform** | | | | |
| 1. Materials | | | | |
| (1) Improved Deep Well Cylinder Pump (Malawi Type) | 1 | set | 9,000 | 9,000 |
| (2) 63mm x 6m GI Pipe with coupling | 9 | pcs. | 1,706 | 15,354 |
| (3) #10 Sieved Gravel | 1.5 | cu.m | 870 | 1,305 |
| (4) Coarse Sand | 1 | cu.m | 385 | 231 |
| (5) Cement for Sanitary Seal | 3 | bags | 117 | 351 |
| (6) Pump Base and Platform | | | | |
| 1) Cement | 4 | bags | 117 | 468 |
| 2) Gravel | 2 | cu.m | 385 | 770 |
| 3) Sand | 1 | cu.m | 304 | 304 |
| 4) Plywood (1,200mm x 2,400mm x 6mm) | 1 | pc. | 250 | 250 |
| 5) Form Lumber (50mm x 75mm x 1,800mm) | 6 | pcs. | 45 | 270 |
| 6) Nail | 1 | kg. | 32 | 32 |
| Sub-Total of D-1 | | | | 28,335 |
| 2. Labor (40% of D-1.) | | L.S. | | 11,334 |
| 3. Freight Cost (9% of Materials) | | L.S. | | 2,550 |
| **Sub-Total of D** | | | | **42,219** |
| **E. Indirect Cost** | | | | |
| Profit (10% of A, B, C and D) | | L.S. | | 19,997 |
| VAT (14% of Profit & Labor) | | L.S. | | 15,166 |
| **Sub-Total of E** | | | | **35,163** |
| **Total of Construction Cost (A+B+C+D+E)** | | | | **235,134** |
| **F. Estimated Government Expenses** | | | | |
| 1. Preliminary & Detailed Engineering Cost | | L.S. | | 3,000 |
| 2. Construction Supervision | | L.S. | | 2,000 |
| 3. Water Quality Analysis | | L.S. | | 1,088 |
| **Sub-Total of F** | | | | **6,088** |
| **GRAND TOTAL** | | | | **241,222** |
| **SAY** | | | | **241,200** |

Note: L.S. - Lump Sum

Source: DPWH standard price in 1994

Unit Cost: Adjusted to 1995 Price Level

## Table 10.2.4 Unit Cost of Level I (Deep Well Rehabilitation)

(Cost: Peso)

| Description | Quantity | Unit | Unit Cost | Cost |
|---|---|---|---|---|
| **A. Mobilization/Demobilization** | | **L.S.** | | **3,300** |
| **B. Well Rehabilitation** | | | | |
| 1. Materials | | | | |
| (1) Cylinder Pump Set | 1 | set | 9,000 | 9,000 |
| (2) Cement for Surface Sealing | 4 | bags | 117 | 468 |
| (3) Pump Base and Platform | | | | |
| 1) Cement | 4 | bags | 117 | 468 |
| 2) Gravel | 2 | cu.m | 385 | 770 |
| 3) Sand | 1 | cu.m | 304 | 304 |
| 4) Plywood (4' x 8' x 1/4") | 1 | pc. | 250 | 250 |
| 5) Form Lumber (2" x 3" x 6") | 6 | pcs. | 45 | 270 |
| 6) Nail | 1 | kg. | 32 | 32 |
| Sub-Total of B-1 | | | | 11,562 |
| 2. Labor (40% of B-1) | | L.S. | | 4,625 |
| 3. Freight Cost (9% of Materials) | | L.S. | | 1,041 |
| **Sub-Total of B** | | | | **17,228** |
| **C. Well Development** | | **L.S.** | | **6,500** |
| **D. Indirect Cost** | | | | |
| Profit (10% of A, B & C) | | L.S. | | 2,703 |
| VAT (14% of Profit & Labor) | | L.S. | | 1,936 |
| **Sub-Total of D** | | | | **4,639** |
| **Total of Construction Cost (A+B+C+D)** | | | | **31,667** |
| **E. Estimated Government Expenses** | | | | |
| 1. Preliminary & Detailed Engineering Cost | | L.S. | | 1,100 |
| 2. Supervision | | L.S. | | 650 |
| 3. Water Quality Analysis | | L.S. | | 1,088 |
| **Sub-Total of E** | | | | **2,838** |
| **GRAND TOTAL** | | | | **34,505** |
| **SAY** | | | | **34,500** |

Note: L.S. - Lump Sum

Source: DPWH standard price in 1994

Unit Cost: Adjusted to 1995 Price Level

## Table 10.2.5 Unit Cost of Level I (Shallow Well - 18m Depth)

(Cost: Peso)

| Description | Quantity | Unit | Unit Cost | Cost |
|---|---|---|---|---|
| **A. Mobilization/Demobilization** | | L.S. | | **1,100** |
| **B. Drilling of Well & Installation of Steel Casing/Screen** | | | | |
| 1. Materials | | | | |
| (1) 50mm x 6m PVC Pipe with socket | 2 | pcs. | 813 | 1,626 |
| (2) 50mm x 3m PVC Pipe with plug | 1 | pc. | 410 | 410 |
| (3) 50mm PVC Socket | 1 | pc. | 90 | 90 |
| (4) 50mm x 3m PVC Screen | 1 | pc. | 1,300 | 1,300 |
| 2. Labor, Fuel, Lubricant and others | | | | |
| Well Drilling for 18 m depth at 150mm borehole | 18 | m | 520 | 9,360 |
| 3. Freight Cost (9% of Materials) | | L.S. | | 308 |
| **Sub-Total of B** | | | | **13,094** |
| **C. Well Development** | | L.S. | | 500 |
| **D. Gravel Packing, Installation of Handpump and Construction of Platform** | | | | |
| 1. Materials | | | | |
| (1) 50mm Jetmatic Handpump | 1 | set | 2,380 | 2,380 |
| (2) 50mm x 1m GI Pipe (Sch. 40) | 1 | pc. | 75 | 75 |
| (3) #10 Sieved Gravel | 0.1 | cu.m | 870 | 87 |
| (4) Coarse Sand | 0.07 | cu.m | 304 | 21 |
| (5) Cement for Sanitary Seal | 1 | bag | 117 | 117 |
| (6) Pump Base and Platform | | | | |
| 1) Cement | 4 | bags | 117 | 468 |
| 2) Gravel | 1 | cu.m | 385 | 385 |
| 3) Sand | 1 | cu.m | 304 | 304 |
| 4) Plywood (1,200mm x 2,400mm x 6mm) | 1 | pc. | 250 | 250 |
| 5) Form Lumber (50mm x 75mm x 1,800 mm) | 1 | pc. | 45 | 45 |
| 6) Nail | 1 | kg. | 32 | 32 |
| Sub-Total of D-1 | | | | 4,164 |
| 2. Labor (40% of D-1.) | | L.S. | | 1,666 |
| 3. Freight Cost (9% of Materials) | | L.S. | | 375 |
| **Sub-Total of D** | | | | **6,205** |
| **E. Indirect Cost** | | | | |
| Profit (10% of A, B, C & D) | | L.S. | | 2,090 |
| VAT (14% of Profit & Labor) | | L.S. | | 1,836 |
| **Sub-Total of E** | | | | **3,926** |
| **Total of Construction Cost (A+B+C+D+E)** | | | | **24,825** |
| **F. Estimated Government Expenses** | | | | |
| 1. Preliminary & Detailed Engineering Cost | | L.S. | | 2,000 |
| 2. Construction Supervision | | L.S. | | 1,500 |
| 3. Water Quality Analysis | | L.S. | | 1,088 |
| **Sub-Total of F** | | | | **4,588** |
| **GRAND TOTAL** | | | | **29,413** |
| **SAY** | | | | **29,400** |

Note: L.S. - Lump Sum

Source: DPWH standard price in 1994

Unit Cost: Adjusted to 1995 Price Level

## Table 10.2.6 Unit Cost of Level II (600 Service Population)

Sheet-1 (Cost: Peso)

| Description | Quantity | Unit | Unit Cost | Cost |
|---|---|---|---|---|
| **A. Mobilization/Demobilization** | | L.S. | | 3,000 |
| **B. Construction of Spring Box** | | | | |
| 1. Materials | | L.S. | | 36,300 |
| 2. Labor (30% of L) | | L.S. | | 10,890 |
| 3. Freight Cost (9% of Materials) | | L.S. | | 3,267 |
| **Sub-Total of B** | | | | **50,457** |
| **C. Installation of Pipelines & Fittings** | | | | |
| 1. Transmission Main | | | | |
| (1) Materials | | | | |
| 1) 63mm. dia. PVC Pipe (Class 12.5 with pusher type socket) | 330 | pcs. | 813 | 268,290 |
| 2) 63mm dia. Tee | 1 | no. | 88 | 88 |
| 3) Solvent Cement | 26 | cans | 46 | 1,196 |
| 4) 63mm dia. x 150mm Nipple | 3 | pcs. | 136 | 408 |
| 5) 63mm dia. Union Patente | 1 | pc. | 173 | 173 |
| 6) 63mm dia. x 50mm dia. Reducing Socket | 2 | pcs. | 105 | 210 |
| 7) 63mm dia. Elbow (90 deg.) | 1 | pc. | 76 | 76 |
| 8) 63mm dia. Elbow (45 deg.) | 1 | pc | 75 | 75 |
| 9) 63mm dia. Gate Valve | 3 | pcs. | 763 | 2,289 |
| Sub-Total of Materials | | | | 272,805 |
| (2) Labor (30% of Material Cost) | | L.S. | | 81,842 |
| (3) Freight Cost (9% of Materials) | | L.S. | | 24,552 |
| Sub-Total of Transmission Main | | | | 379,199 |
| 2. Distribution Pipeline | | | | |
| (1) Materials | | | | |
| 1) 50mm dia. PVC Pipe (Class 12.5 with pusher type socket) | 20 | pcs. | 450 | 9,000 |
| 2) 38mm dia. PVC Pipe (Class 12.5 with pusher type socket) | 30 | pcs. | 300 | 9,000 |
| 3) 20mm dia. PVC Pipe (Class 40 with pusher type socket) | 10 | pcs. | 100 | 1,000 |
| 4) 13mm dia. x 1 m Stand Pipe | 10 | pcs. | 94 | 940 |
| 5) Solvent Cement | 4 | cans | 46 | 184 |
| 6) Fittings | | | | |
| a. 50mm dia. x 150mm PVC Nipple | 3 | pcs. | 125 | 375 |
| b. 32mm dia. x 150mm PVC Nipple | 3 | pcs. | 76 | 228 |
| c. 13mm dia. x 150mm GI Nipple | 40 | pcs. | 25 | 1,000 |
| d. 50mm dia. Union Patente | 1 | pcs. | 163 | 163 |
| e. 32mm dia. Union Patente | 2 | pcs. | 71 | 142 |
| f. 13mm dia. Union Patente | 10 | pcs. | 25 | 250 |
| g. 50mm dia. x 32mm dia. Reducing Socket | 6 | pcs. | 90 | 540 |
| h. 32mm dia. x 20mm dia. Reducing Socket | 10 | pcs. | 70 | 700 |
| i. 20mm dia. x 13mm dia. Reducing Socket | 10 | pcs. | 55 | 550 |
| j. 50mm dia. PVC Elbow (90 deg.) | 2 | pcs. | 68 | 136 |
| k. 13mm dia. GI Elbow (90 deg.) | 20 | pcs. | 13 | 260 |
| l. 20mm dia. x 13mm dia. Socket Adaptor | 10 | pcs. | 41 | 410 |
| m. 50mm dia. GI Gate Valve | 2 | pcs. | 671 | 1,342 |
| n. 32mm dia. GI Gate Valve | 2 | pcs. | 380 | 760 |
| o. 13mm dia. GI Gate Valve | 24 | pcs. | 230 | 5,520 |
| p. 13mm dia. Brass Faucet | 24 | pcs. | 41 | 984 |
| q. 50mm dia. Tee | 4 | pcs. | 130 | 520 |
| r. 32mm dia. Tee | 6 | pcs. | 110 | 660 |
| s. Water Meter | 24 | pcs. | 750 | 18,000 |
| t. Water Meter Box | 24 | pcs. | 1,100 | 26,400 |
| Sub-Total of Materials | | | | 79,064 |
| (2) Labor (30% of Material Cost) | | L.S. | | 23,719 |
| (3) Freight Cost (9% of Materials) | | L.S. | | 7,116 |
| Sub-Total of Distribution Pipeline | | | | 109,899 |
| **Sub-Total of C** | | | | **489,098** |

## Table 10.2.6 Unit Cost of Level II (600 Service Population)

Sheet-2 (Cost: Peso)

| Description | Quantity | Unit | Unit Cost | Cost |
|---|---|---|---|---|
| **D. Indirect Cost** | | | | |
| 1. Transmission Main | | | | |
| (1) Profit (10% of C-1) | | L.S. | | 37,920 |
| (2) VAT (10% of Profit and Labor) | | L.S. | | 11,976 |
| 2. Source Facilities and Distribution Pipeline | | | | |
| (1) Profit (10% of A, B, C-2) | | L.S. | | 16,336 |
| (2) VAT (14% of Profit and Labor) | | L.S. | | 7,132 |
| **Sub-Total of D** | | | | **73,364** |
| **Total Construction Cost (A+B+C+D)** | | | | **615,919** |
| **E. Estimated Government Expenses** | | | | |
| 1. Preliminary & Detailed Engineering and RWSA Formation | | L.S. | | 2,000 |
| 2. Supervision | | L.S. | | 12,000 |
| 3. Water Quality Analysis | | L.S. | | 1,088 |
| **Sub-Total of E** | | | | **15,088** |
| **Total Estimated Cost** | | | | **631,007** |
| **Unit Cost per Person Served** | | | | **1,052** |
| | | | **Say** | **1,100** |

Note: L.S. - Lump Sum

Source: DPWH standard price in 1994

Unit Cost: Adjusted to 1995 Price Level

**Table 10.2.7 Unit Cost of Level III (5,000 Service Population)**

(Cost: Peso)

| Description | Quantity | Unit | Unit Cost | Cost |
|---|---|---|---|---|
| **A. Mobilization/Demobilization** | | L.S. | | 300,000 |
| **B. Source Development and Storage** | | | | |
| 1. Deep Well | 1 | No. | 1,540,000 | 1,540,000 |
| 2. Deep Well Pump | 1 | No. | 550,000 | 550,000 |
| 3. Chlorinator House & Equipment | 1 | L.S. | | 440,000 |
| 4. Storage Tank (250 cu.m) | 1 | No. | 1,100,000 | 1,100,000 |
| **Sub-Total of B** | | | | **3,630,000** |
| **C. Transmission Main** | | | | |
| 1. 160mm dia. | 500 | L.M. | 1,120 | 560,000 |
| **Sub-Total of C** | | | | **560,000** |
| **D. Distribution Main** | | | | |
| 1. 160mm dia. | 1,000 | L.M. | 1,120 | 1,120,000 |
| 2. 110mm dia. | 3,000 | L.M. | 925 | 2,775,000 |
| 3. 90mm dia. | 3,000 | L.M. | 580 | 1,740,000 |
| 4. 75mm dia. | 5,000 | L.M. | 540 | 2,700,000 |
| **Sub-Total of D** | | | | **8,335,000** |
| **E. Service Connections** | **1,000** | **Nos.** | **1,940** | **1,940,000** |
| **F. Miscellaneous** | | | | |
| 1. Vehicle | 1 | No. | 550,000 | 550,000 |
| 2. Office & Workshop Bldg. | 1 | No. | 550,000 | 550,000 |
| 3. Office Equipment | | L.S. | | 100,000 |
| 4. Tools and Spare Parts | | L.S. | | 100,000 |
| **Sub-Total of F** | | | | **1,300,000** |
| **Total Direct Cost (A+B+C+D+E+F)** | | | | **16,065,000** |
| **G. Indirect Cost (25% of Direct Cost)** | | L.S. | | **4,016,250** |
| **Total Estimated Cost** | | | | **20,081,250** |
| **Unit Cost per Person Served** | | | | |
| **For New Construction** | | | | 4,016 |
| | | | Say | 4,000 |
| **For Expansion of Existing System (Exclude F.)** | | | | 3,691 |
| | | | Say | 3,700 |

Note: L.S. - Lump Sum

Source: LWUA standard price in 1994

Unit Cost: Adjusted to 1995 Price Level

## Table 10.2.8 Unit Cost of Level III (10,000 Service Population)

(Cost: Peso)

| Description | Quantity | Unit | Unit Cost | Cost |
|---|---|---|---|---|
| **A. Mobilization/Demobilization** | | **L.S.** | | **300,000** |
| **B. Source Development and Storage** | | | | |
| 1. Deep Well | 1 | No. | 1,540,000 | 1,540,000 |
| 2. Deep Well Pump | 1 | No. | 550,000 | 550,000 |
| 3. Chlorinator House & Equipment | 1 | L.S. | | 440,000 |
| 4. Storage Tank (250 cu.m) | 1 | No. | 1,100,000 | 1,100,000 |
| **Sub-Total of B** | | | | **3,630,000** |
| **C. Transmission Main** | | | | |
| 1. 160mm dia. | 500 | L.M. | 1,120 | 560,000 |
| **Sub-Total of C** | | | | **560,000** |
| **D. Distribution Main** | | | | |
| 1. 160mm dia. | 2,000 | L.M. | 1,120 | 2,240,000 |
| 2. 110mm dia. | 5,000 | L.M. | 925 | 4,625,000 |
| 3. 90mm dia | 6,000 | L.M. | 580 | 3,480,000 |
| 4. 75mm dia. | 8,000 | L.M. | 540 | 4,320,000 |
| **Sub-Total of D** | | | | **14,665,000** |
| **E. Service Connections** | **2,000** | **Nos.** | **1,940** | **3,880,000** |
| **F. Miscellaneous** | | | | |
| 1. Vehicle | 1 | No. | 550,000 | 550,000 |
| 2. Office & Workshop Bldg. | 1 | No. | 550,000 | 550,000 |
| 3. Office Equipment | | L.S. | | 100,000 |
| 4. Tools and Spare Parts | | L.S. | | 100,000 |
| **Sub-Total of F** | | | | **1,300,000** |
| **Total Direct Cost (A+B+C+D+E+F)** | | | | **24,335,000** |
| **G. Indirect Cost (25% of Direct Cost)** | | **L.S.** | | **6,083,750** |
| **Total Estimated Cost** | | | | **30,418,750** |
| **Unit Cost per Person Served** | | | | |
| **For New Construction** | | | | 3,042 |
| | | | **Say** | **3,000** |
| **For Expansion of Existing System (Exclude F.)** | | | | 2,879 |
| | | | **Say** | **2,900** |

Note: L.S. - Lump Sum

Source: LWUA standard price in 1994

Unit Cost: Adjusted to 1995 Price Level

## Table 10.2.9 Unit Cost of Level III (15,000 Service Population)

(Cost: Peso)

| Description | Quantity | Unit | Unit Cost | Cost |
|---|---|---|---|---|
| **A. Mobilization/Demobilization** | | L.S. | | 300,000 |
| **B. Source Development and Storage** | | | | |
| 1. Deep Well | 2 | No. | 1,540,000 | 3,080,000 |
| 2. Deep Well Pump | 2 | No. | 550,000 | 1,100,000 |
| 3. Chlorinator House & Equipment | 2 | L.S. | | 440,000 |
| 4. Storage Tank (250 cu.m) | 2 | No. | 1,100,000 | 2,200,000 |
| **Sub-Total of B** | | | | **6,820,000** |
| **C. Transmission Main** | | | | |
| 1. 160mm dia. | 1,000 | L.M. | 1,120 | 1,120,000 |
| **Sub-Total of C** | | | | **1,120,000** |
| **D. Distribution Main** | | | | |
| 1. 160mm dia. | 3,000 | L.M. | 1,120 | 3,360,000 |
| 2. 110mm dia. | 7,000 | L.M. | 925 | 6,475,000 |
| 3. 90mm dia. | 9,000 | L.M. | 580 | 5,220,000 |
| 4. 75mm dia. | 11,000 | L.M. | 540 | 5,940,000 |
| **Sub-Total of D** | | | | **20,995,000** |
| **E. Service Connections** | 3,000 | Nos. | 1,940 | 5,820,000 |
| **F. Miscellaneous** | | | | |
| 1. Vehicle | 1 | No. | 550,000 | 550,000 |
| 2. Office & Workshop Bldg. | 1 | No. | 550,000 | 550,000 |
| 3. Office Equipment | | L.S. | | 100,000 |
| 4. Tools and Spare Parts | | L.S. | | 100,000 |
| **Sub-Total of F** | | | | **1,300,000** |
| **Total Direct Cost (A+B+C+D+E+F)** | | | | **36,355,000** |
| **G. Indirect Cost (25% of Direct Cost)** | | L.S. | | **9,088,750** |
| **Total Estimated Cost** | | | | **45,443,750** |
| **Unit Cost per Person Served** | | | | |
| **For New Construction** | | | | 3,030 |
| | | | **Say** | **3,000** |
| **For Expansion of Existing System (Exclude F.)** | | | | 2,921 |
| | | | **Say** | **2,900** |

Note: L.S. - Lump Sum

Source: LWUA standard price in 1994

Unit Cost: Adjusted to 1995 Price Level

**Table 10.2.10 Unit Cost of Flush Water Sealed with Septic Tank Toilet**

Sheet 1 (Cost: Peso)

| Description | Quantity | Unit | Unit Cost | Cost |
|---|---|---|---|---|
| **A. Demolition** | | L.S. | | 1,000 |
| **B. Earthwork** | | | | |
| 1. Materials | | | | |
| (1) Gravel Fill | 1 | cu.m. | 385 | 385 |
| Sub-Total of B-1 | | | | 385 |
| 2. Labor | | | | |
| (1) Excavation | 6 | cu.m. | 119 | 714 |
| (2) Backfill | 2 | cu.m. | 108 | 216 |
| (3) Gravel Fill | 1 | cu.m | 141 | 141 |
| Sub-Total of B-2 | | | | 1,071 |
| **Sub-Total of B** | | | | **1,456** |
| **C. Walls & Posts** | | | | |
| 1. Materials | | | | |
| (1) 0.15 x 0.20 x 0.40 Ord. CHB | 180 | pcs. | 6 | 1,080 |
| (2) Cement | 17 | bags | 117 | 1,989 |
| (3) Sand | 2 | cu.m | 304 | 608 |
| (4) Rebars: 12 mm dia. x 6.0 m | 5 | pcs. | 68 | 340 |
| 10 mm dia. x 6.0 m | 2 | pcs. | 49 | 98 |
| (5) #16 Tie Wire | 1 | kg. | 49 | 49 |
| (6) Scaffolding: | | | | |
| 10-2" x 4" x 8" (Ord. Lumber) | 53 | bf. | 32 | 1,696 |
| Sub-Total of C-1 | | | | 5,860 |
| 2. Labor (30% of C-1) | | L.S. | | 1,758 |
| **Sub-Total of C** | | | | **7,618** |
| **D. Roofing Work** | | | | |
| 1. Materials | | | | |
| (1) GA #26 Corr. GI (L=3.0 m) | 3 | bd.ft. | 274 | 822 |
| (2) GA #26 Plain GI Flushing | 1 | pc. | 264 | 264 |
| (3) GA # 24 Plain GI Gutter | 1 | pc. | 264 | 264 |
| (4) Roof Nails | 2 | kgs. | 44 | 88 |
| (5) Rafter - 2" x 5 x 10', 4 pcs. | 33.33 | bd.ft | 32 | 1,067 |
| (6) Purlins - 2" x 2" x 12', 3 pcs. | 12 | bd.ft | 32 | 384 |
| (7) Wood Cleats - 2" x 2" x 12', 1 pc. | 3.33 | bd.ft | 32 | 107 |
| (8) Nailers - 2" x 2" x 12', 5 pcs. | 20 | bd.ft | 32 | 640 |
| 2" x 2" x 10', 5 pcs. | 20 | bd.ft | 32 | 640 |
| (9) Fascia Board - 1" x 12" x 18', 2 pcs. | 36 | bd.ft | 32 | 1,152 |
| (10) Common Wire Nails (Assorted) | 3 | kgs. | 29 | 87 |
| (11) Downspout (PVC) | | | | |
| 75 mm dia. x 3.0 m | 2 | pcs. | 81 | 162 |
| (12) Elbow (PVC) - 75 mm dia. | 2 | pcs. | 15 | 30 |
| (13) Coupling (PVC) - 75 mm dia. | 1 | pc. | 14 | 14 |
| Sub-Total of D-1 | | | | 5,721 |
| 2. Labor (30% of D-1) | | L.S. | | 1,716 |
| **Sub-Total of D** | | | | **7,437** |

**Table 10.2.10 Unit Cost of Flush Water Sealed with Septic Tank Toilet**

Sheet 2 (Cost: Peso)

| Description | Quantity | Unit | Unit Cost | Cost |
|---|---|---|---|---|
| **E. Plumbing** | | | | |
| 1. Materials | | | | |
| (1) Water Closet | 1 | set | 2,000 | 2,000 |
| (2) Water line and sanitary fixtures with septic tank | | L.S. | | 6,192 |
| Sub-Total of E-1 | | | | 8,192 |
| 2. Labor (30% of E-1) | | L.S. | | 2,458 |
| **Sub-Total of E** | | | | **10,650** |
| **F. Carpentry Work** | | | | |
| 1. Materials | | | | |
| (1) Flush Type Door w/Lower Jambs | 1 | pc. | 1,428 | 1,428 |
| (2) Windows (wooden jalousy) w/Jambs | 2 | sets | 298 | 596 |
| Sub-Total of F-1 | | | | 2,024 |
| 2. Labor (30% of E-1) | | L.S. | | 607 |
| **Sub-Total of F** | | | | **2,631** |
| **G. Freight Cost (9% of Materials for B-F excluding indigenous materials)** | | **L.S.** | | **1,575** |
| **H. Indirect Cost** | | | | |
| Profit (10% of A - G) | | L.S. | | 3,237 |
| VAT (14% of Profit & Labor) | | L.S. | | 1,519 |
| **Sub-Total of H** | | | | **4,756** |
| **Total of Construction Cost (A+B+C+D+E+F+G+H)** | | | **Say** | **37,123** **37,100** |

Source: DOH standard price in1993.

Unit Cost: Adjusted to 1995 Price Level.

Table 10.2.11 Unit Cost of Pour Flush with Double Pit Latrine

(Cost: Peso)

| Description | Quantity | Unit | Unit Cost | Cost |
|---|---|---|---|---|
| **A. Earthwork** | | | | |
| 1. Materials | | | | |
| (1) Gravel Fill | 1 | cu.m. | 385 | 385 |
| Sub-Total of A-1 | | | | 385 |
| 2. Labor | | | | |
| (1) Excavation | 6 | cu.m. | 119 | 714 |
| (2) Backfill | 2 | cu.m. | 108 | 216 |
| (3) Gravel Fill | 1 | cu.m. | 141 | 141 |
| Sub-Total of A-2 | | | | 1,071 |
| **Sub-Total of A** | | | | **1,456** |
| **B. Concrete Work** | | | | |
| 1. Materials | | | | |
| Slab on wood planks | | | | |
| (1) 16 - 2" x 8" x 6' Coco Lumber | 128 | bd.ft. | 8 | 1,024 |
| (2) 10mm dia x 6.0m Rebar | 3 | pcs. | 49 | 147 |
| (3) #16 Tie Wire | 0.5 | kg. | 49 | 25 |
| (4) Cement | 10 | bags | 117 | 1,170 |
| (5) Sand | 1.5 | cu.m. | 304 | 456 |
| (6) Gravel | 2 | cu.m. | 385 | 770 |
| (7) Stone Lining with Mortar | | L.S. | 1,014 | 1,014 |
| Sub-Total of B-1 | | | | 4,606 |
| 2. Labor (25% of B-1) | | L.S. | | 1,152 |
| **Sub-Total of B** | | | | **5,758** |
| **C. Walls & Posts** | | | | |
| 1. Materials | | | | |
| (1) 4 - 4" x 4" x 10' Coco Lumber | 53.33 | bd.ft. | 8 | 427 |
| (2) 6 - 2" x 3" x 10' Coco Lumber | 30 | bd.ft. | 8 | 240 |
| (3) 8 - 2" x 3" x 8' Coco Lumber | 32 | bd.ft. | 8 | 256 |
| (4) 2.0 m x 5.0 m Sawali | 2 | rolls | 357 | 714 |
| (5) Assorted Nails | 6 | kgs. | 29 | 174 |
| (6) Bamboo Clips | | L.S. | 119 | 119 |
| Sub-Total of C-1 | | | | 1,930 |
| 2. Labor (25% of C-1) | | L.S. | | 483 |
| **Sub-Total of C** | | | | **2,413** |
| **D. Roofing Work** | | | | |
| 1. Materials | | | | |
| Rafters | | | | |
| (1) 4 - 2" x 4" x 6' Coco Lumber | 16 | bd.ft. | 8 | 128 |
| (2) Bamboo Purlins | | L.S. | 119 | 119 |
| (3) Nipa Roofing | 2 | 100 | 238 | 476 |
| Sub-Total of D-1 | | pcs./bandle | | 723 |
| 2. Labor (25% of D-1) | | L.S. | | 181 |
| **Sub-Total of D** | | | | **904** |
| **E. Plumbing** | | | | |
| 1. Material | | | | |
| (1) Toilet Bowl-Squat Type | 1 | pc. | 547 | 547 |
| (1) 75mm dia x 6.0m PVC Pipe | 1 | pc. | 129 | 129 |
| Sub-Total of E-1 | | | | 676 |
| 2. Labor (25% of E-1) | | L.S. | | 169 |
| **Sub-Total of E** | | | | **845** |
| **F. Freight Cost (9% of Materials for B - E excluding indigenous materials)** | | **L.S.** | | **197** |
| **G. Indirect Cost** | | | | |
| Profit (10% of A - F) | | L.S. | | 1,157 |
| VAT (14% of Profit & Labor) | | L.S. | | 590 |
| **Sub-Total of G** | | | | **1,747** |
| **Total Construction Cost (A+B+C+D+E+F+G)** | | | **Say** | **13,320**<br>**13,300** |

Note: L.S. - Lump Sum

Source: DOH standard price in 1993.

Unit Cost: Adjusted to 1995 Price Level.

## Table 10.2.12 Unit Cost of Ventilated Improved Pit Latrine (VIP)

(Cost: Peso)

| Description | Quantity | Unit | Unit Cost | Cost |
|---|---|---|---|---|
| **A. Earthwork** | | | | |
| 1. Materials | | | | |
| (1) Gravel Fill | 0.5 | cu.m | 385 | 193 |
| Sub-Total of A-1 | | | | 193 |
| 2. Labor | | | | |
| (1) Excavation | 3 | cu.m | 119 | 357 |
| (2) Backfill | 1 | cu.m | 108 | 108 |
| (3) Gravel Fill | 0.5 | cu.m | 141 | 71 |
| Sub-Total of A-2 | | | | 536 |
| **Sub-Total of A** | | | | **729** |
| **B. Concrete Work** | | | | |
| 1. Materials | | | | |
| Slab on wood planks | | | | |
| (1) 8 - 2" x 8" x 6' Coco Lumber | 64 | bd.ft. | 8 | 512 |
| (2) 10mm dia x 6.0m Rebar | 2 | pcs. | 49 | 98 |
| (3) #16 Tie Wire | 0.5 | kg. | 49 | 25 |
| (4) Cement | 4 | bags | 117 | 468 |
| (5) Sand | 0.5 | cu.m | 304 | 152 |
| (6) Gravel | 0.5 | cu.m | 385 | 193 |
| (7) Stone Lining with Mortar | | L.S. | 1,014 | 1,014 |
| Sub-total of B-1 | | | | 2,462 |
| 2. Labor (25% of B-1) | | L.S. | | 616 |
| **Sub-Total of B** | | | | **3,078** |
| **C. Walls & Posts** | | | | |
| 1. Materials | | | | |
| (1) 4 - 4" x 4" x 10' Coco Lumber | 53.33 | bd.ft. | 8 | 427 |
| (2) 6 - 2" x 3" x 10' Coco Lumber | 30 | bd.ft. | 8 | 240 |
| (3) 8 - 2" x 3" x 8' Coco Lumber | 32 | bd.ft. | 8 | 256 |
| (4) 2.0 m x 5.0 m Sawali | 2 | rolls | 357 | 714 |
| (5) Assorted Nails | 6 | kgs. | 29 | 174 |
| (6) Bamboo Clips | | L.S. | 119 | 119 |
| Sub-Total of C-1 | | | | 1,930 |
| 2. Labor (25% of C-1) | | L.S. | | 483 |
| **Sub-Total of C** | | | | **2,413** |
| **D. Roofing Work** | | | | |
| 1. Materials | | | | |
| Rafters | | | | |
| (1) 4 - 2" x 4" x 6' Coco Lumber | 16 | bd.ft. | 8 | 128 |
| (2) Bamboo Purlins | | L.S. | 119 | 119 |
| (3) Nipa Roofing | 2 | 100 | 238 | 476 |
| Sub-Total of D-1 | | pcs./bundle | | 723 |
| 2. Labor (25% of D-1) | | L.S. | | 181 |
| **Sub-Total of D** | | | | **904** |
| **E. Plumbing** | | | | |
| 1. Materials | | | | |
| (1) 50mm dia PVC Pipe | 1 | pc. | 65 | 65 |
| (2) Fly Screen | | L.S. | 50 | 50 |
| Sub-Total of E-1 | | | | 115 |
| 2. Labor (25% of E-1) | | L.S. | | 29 |
| **Sub-Total of E** | | | | **144** |
| **F. Freight Cost (9% of Materials for B-E excluding sand and gravel)** | | **L.S.** | | **79** |
| **G. Indirect Cost** | | | | |
| Profit (10% of A - F) | | L.S. | | 735 |
| VAT (14% of Profit & Labor) | | L.S. | | 286 |
| **Sub-Total of G** | | | | **1,021** |
| **Total of Construction Cost (A+B+C+D+E+F+G)** | | | **Say** | **8,368**<br>**8,400** |

Note: L.S. - Lump Sum

Source: DOH standard price in 1993.

Unit Cost: Adjusted to 1995 Price Level.

## Table 10.2.13 Unit Cost of School Toilet

Sheet-1 (Cost: Peso)

| Description | Quantity | Unit | Unit Cost | Cost |
|---|---|---|---|---|
| **A. Mobilization and Demobilization** | | **L.S.** | | **5,300** |
| **B. Earthwork** | | | | |
| 1. Materials | | | | |
| (1) Gravel Fill | 3.00 | cu.m | 385 | 1,155 |
| Sub-Total of B-1 | | | | 1,155 |
| 2. Labor | | | | |
| (1) Excavation | 15.88 | cu.m | 119 | 1,890 |
| (2) Backfill | 4.97 | cu.m | 108 | 537 |
| (3) Gravel Fill | 3.00 | cu.m | 141 | 423 |
| Sub-Total of B-2 | | | | 2,850 |
| **Sub-Total of B** | | | | **4,005** |
| **C. Concrete Work** | | | | |
| 1. Materials | | | | |
| (1) Cement | 61.00 | bags | 117 | 7,137 |
| (2) Sand | 4.00 | cu.m | 304 | 1,216 |
| (3) Gravel | 8.00 | cu.m | 385 | 3,080 |
| (4) Rebars: 12mm dia x 6m | 38.00 | pcs. | 68 | 2,584 |
| 10mm dia x 6m | 57.00 | pcs. | 49 | 2,793 |
| (5) #16 Tie Wire | 8.00 | kgs. | 49 | 392 |
| (6) Formworks: | | | | |
| 1/4" Plywood | 6.00 | pcs. | 405 | 2,430 |
| 2"x2"x10" (Coco Lumber) | 200.00 | bd.ft. | 8 | 1,600 |
| Sub-Total of C-1 | | | | 21,232 |
| 2. Labor (30% of C-1) | | L.S. | | 6,370 |
| **Sub-Total of C** | | | | **27,602** |
| **D. Masonry Work** | | | | |
| 1. Materials | | | | |
| (1) 6" CHB | 800.00 | pcs. | 6 | 4,800 |
| (2) 4" CHB | 260.00 | pcs. | 5 | 1,300 |
| (3) Cement | 97.00 | bags | 117 | 11,349 |
| (5) Sand | 10.00 | cu.m | 304 | 3,040 |
| (6) Rebars: 12mm dia x 6m | 30.00 | pcs. | 68 | 2,040 |
| 10mm dia x 6m | 11.00 | pcs. | 49 | 539 |
| (7) #16 Tie Wire | 4.00 | kgs. | 49 | 196 |
| (8) Scaffolding: | | | | |
| 2"x4"x8" = 10 pcs. (Coco Lumber) | 53.33 | bf. | 8 | 427 |
| Sub-Total of D-1 | | | | 23,691 |
| 2. Labor (30% of D-1) | | L.S. | | 7,107 |
| **Sub-Total of D** | | | | **30,798** |
| **E. Roofing Work** | | | | |
| 1. Materials | | | | |
| (1) GA #26 Corr. GI (1 = 10') | 20.00 | pcs. | 274 | 5,480 |
| (2) GA #24 Pln. GI Flashing | 3.00 | pcs. | 264 | 792 |
| (3) GA #24 Pln. GI Gutter (Pre-Fab) | 9.00 | pcs. | 264 | 2,376 |
| (4) Umbrella Nails 2 - 1/2" | 12.00 | kgs. | 44 | 528 |
| (5) Rafter - 2"x5"x18' = 5 pcs. | 75.00 | bf. | 32 | 2,400 |
| (6) Purlins - 2"x2"x12' = 18 pcs. | 72.00 | bf. | 32 | 2,304 |
| (7) WD Cleats - 2"x2"x10" = 6 pcs. | 20.00 | bf. | 32 | 640 |

## Table 10.2.13 Unit Cost of School Toilet

Sheet-2 (Cost: Peso)

| Description | Quantity | Unit | Unit Cost | Cost |
|---|---|---|---|---|
| (8) Nailers - 2"x2"x1012' = 30 pcs. | 120.00 | bf. | 32 | 3,840 |
| - 2"x2"x10' = 36 pcs. | 120.00 | bf. | 32 | 3,840 |
| (9) Fascia Board | | | | |
| 1"x12"x12' = 4 pcs. | 48.00 | bf. | 32 | 1,536 |
| 1"x12"x18' = 2 pcs. | 36.00 | bf. | 32 | 1,152 |
| (10) Wood Plate | | | | |
| 2"x4"x20' = 2 pcs. | 26.66 | bf. | 32 | 853 |
| (11) 1/4" Thk. Mar. Plywood 4'x8' | 14.00 | pcs. | 29 | 406 |
| (12) C.W.N. Assorted | 15.00 | kgs. | 29 | 435 |
| (13) 3" dia x 3m Downspout (PVC) | 3.00 | pcs. | 81 | 242 |
| (14) 3" dia Elbow (PVC) | 2.00 | pcs. | 15 | 30 |
| (15) 3"dia Coupling (PVC) | 1.00 | pcs. | 14 | 14 |
| (16) Ceiling Vent | | | | |
| 1"x1"x8' = 4 pcs. | 2.67 | bf. | 26 | 69 |
| (17) Screen (1/8"x1/8") | 1.00 | yd. | 81 | 81 |
| Sub-Total of E-1 | | | | 27,018 |
| 2. Labor (30% of E-1) | | L.S. | | 8,105 |
| **Sub-Total of E** | | | | 35,123 |
| **F. Carpentry Work** | | | | |
| 1. Materials | | | | |
| (1) D - 1 Hollow Core Tanguile | | | | |
| Flush Type Door w/ Louver (.80x2.20) | 2.00 | sets | 1,428 | 2,856 |
| (2) D - 2 Hollow Core Tanguile | | | | |
| Flush Type Door (.60x2.10) | 1.00 | sets | 1,071 | 1,071 |
| (3) D - 3 Louver Door (.60x1.40) | 5.00 | sets | 893 | 4,465 |
| (4) Door Jambs (Apitong) | | | | |
| 2"x6"x14" = 1 pc. | 14.00 | bf. | 32 | 448 |
| 2"x6"x10" = 2 pcs. | 20.00 | bf. | 32 | 640 |
| 2"x6"x10" = 1 pc. | 18.00 | bf. | 32 | 576 |
| 2"x4"x12" = 5 pcs. | 40.00 | bf. | 32 | 1,280 |
| (7) Wooden Jalousie Window | | | | |
| With 5 Blades (.40x.50) | 14.00 | set | 298 | 4,172 |
| (8) Window Jambs (Apitong) | | | | |
| 2"x6"x16" = 5 pcs. | 80.00 | bf. | 32 | 2,560 |
| 2"x6"x14" = 1 pc. | 14.00 | bf. | 32 | 448 |
| 2"x6"x10" = 1 pc. | 10.00 | bf. | 32 | 320 |
| (9) Cabinet | | | | |
| 3/4"x4'x8' = 1 pc. (plyboard) | 1.00 | pc. | 774 | 774 |
| Sub-Total of F-1 | | | | 19,610 |
| 2. Labor (30% of F-1) | | L.S. | | 5,883 |
| **Sub-Total of F** | | | | 25,493 |
| **G. Tile Work** | | | | |
| 1. Materials | | | | |
| (1) 4 - 1/4"x4 - 1/4" Glazed Tiles | 1,950.00 | pcs. | 4 | 7,800 |
| (2) 0.10x0.20m Floor Tiles | 900.00 | pcs. | 7 | 6,300 |
| (3) Cement | 4.00 | bags | 117 | 468 |
| (4) White Cement | 1.00 | bag | 629 | 629 |
| Sub-Total of G-1 | | | | 15,197 |

## Table 10.2.13 Unit Cost of School Toilet

Sheet-3 (Cost: Peso)

| Description | Quantity | Unit | Unit Cost | Cost |
|---|---|---|---|---|
| 2. Labor (30% of G-1) | | L.S. | | 4,559 |
| **Sub-Total of G** | | | | **19,756** |
| **H. Plumbing Work** | | | | |
| 1. Materials | | | | |
| (1) Toilet Bowl - Squat Type | 3.00 | sets | 596 | 1,788 |
| (2) Toilet Bowl-Sit Type | 2.00 | sets | 596 | 1,192 |
| (3) Lavatory | 2.00 | sets | 845 | 1,690 |
| (4) 4" dia x 3m PVC San. Pipe | 4.00 | pcs. | 149 | 596 |
| (5) 3" dia x 3m PVC San. Pipe | 7.00 | pcs. | 84 | 588 |
| (6) 1 1/ 2" dia x 3m PVC San. Pipe | 4.00 | pcs. | 53 | 212 |
| (7) 2" dia. x 3m PVC San. Pipe | 2.00 | pcs. | 50 | 100 |
| (8) 6" x 4" Floor Drain | 5.00 | pcs. | 84 | 420 |
| (9) 2" dia. Elbow PVC | 4.00 | pcs. | 7 | 28 |
| (10) 4" dia WYB PVC | 2.00 | pcs. | 25 | 50 |
| (11) 4" dia. x 3" dia. WYB PVC | 12.00 | pcs. | 30 | 360 |
| (12) 4" dia. x 2" dia. TEE PVC | 2.00 | pcs. | 31 | 62 |
| (13) 4" dia. TEE PVC | 3.00 | pcs. | 31 | 93 |
| (14) 1 1/2" dia. WYB PVC | 1.00 | pcs. | 12 | 12 |
| (15) 4" dia. Clean Out PVC | 3.00 | pcs. | 35 | 105 |
| (16) 3" dia. Clean Out PVC | 1.00 | pcs. | 28 | 28 |
| (17) Faucet | 3.00 | pcs. | 50 | 150 |
| (18) 3" dia. x 2" dia. WYB PVC | 2.00 | pcs. | 25 | 50 |
| (19) 1 1/2" dia. Elbow PVC | 6.00 | pcs. | 13 | 78 |
| (20) PVC Cement | 1.00 | can | 121 | 121 |
| (21) 2" dia. PVC San. Pipe x 3m | 2.00 | pcs. | 79 | 158 |
| (22) 4" dia. x 2" dia. TEE | 2.00 | pcs. | 21 | 42 |
| (23) Check Valve 1 1/2" | 1.00 | pcs. | 182 | 182 |
| (24) 4" P-Trap | 5.00 | pcs. | 66 | 330 |
| Sub-Total of H-1 | | | | 8,435 |
| 2. Labor (30% of H-1) | | L.S. | | 2,531 |
| **Sub-Total of H** | | | | **10,966** |
| **I. Painting** | | | | |
| 1. Materials | | | | |
| (1) Acrylic, Semi Gloss | 8.00 | gals. | 261 | 2,088 |
| (2) Concrete Sealer | 4.00 | gals. | 206 | 824 |
| (3) Acri Color: Wood | 4.00 | gals. | 80 | 320 |
| (4) Enamel, QDE | 6.00 | gals. | 266 | 1,596 |
| (5) Wood Putty | 1.00 | gals. | 302 | 302 |
| (6) Paint Thinner | 1.00 | gals. | 60 | 60 |
| (7) Tinting Color | 4.00 | pint | 40 | 160 |
| (8) Sand Paper (Assorted) | 15.00 | pcs. | 7 | 105 |
| (9) Misecellaneous | | L.S. | 1,000 | 0 |
| (10) Roof Paint (green, ready-mix) | 2.00 | gals. | 281 | 562 |
| Sub-Total of I-1 | | | | 6,017 |
| 2. Labor (30% of I-1) | | L.S. | | 1,805 |
| **Sub-Total of I** | | | | **7,822** |

## Table 10.2.13 Unit Cost of School Toilet

Sheet-4 (Cost: Peso)

| Description | Quantity | Unit | Unit Cost | Cost |
|---|---|---|---|---|
| **J. Electrical Work** | | | | |
| 1. Materials | | | | |
| (1) 40 Watts Flourescent Lamp | 2.00 | sets | 255 | 510 |
| (2) Elect. Wire TW #12 | 24.00 | M | 7 | 168 |
| (3) Elect. Conduit - 1/2" dia x 10" | 4.00 | pcs. | 78 | 312 |
| (4) Entrance Cap. 1/2" dia | 1.00 | pc. | 29 | 29 |
| (5) Switch Outlet, Flush Type | 2.00 | pcs. | 39 | 78 |
| (6) Utility Box 2"x3" | 2.00 | pcs. | 7 | 14 |
| (7) Porcelain Receptacle 2" dia | 2.00 | pcs. | 7 | 14 |
| (8) Safety Switch 60A, 250V | 1.00 | set | 490 | 490 |
| (9) Electrical Tape | 1.00 | roll | 22 | 22 |
| Sub-Total of J-1 | | | | 1,637 |
| 2. Labor (30% of J-1) | | L.S. | | 491 |
| **Sub-Total of J** | | | | **2,128** |
| **K. Hardware** | | | | |
| 1. Materials | | | | |
| (1) 3"x3" Butt Hinges (Loose Pin) | 10.00 | pcs. | 15 | 150 |
| (2) 4"x4" Butt Hinges (Loose Pin) | 12.00 | pcs. | 18 | 216 |
| (3) Door Lockset (Schlage US) | 3.00 | pcs. | 454 | 1,362 |
| (4) Barrel Bolt (4") | 5.00 | pcs. | 40 | 200 |
| (5) Cabinet Pull (4") | 5.00 | pcs. | 7 | 35 |
| (6) Water Storage Cover | | | | |
| Checkered Plate 1/4" thick | | | | |
| 1.44x0.645 w/ L bar & flat bar | 1.00 | set | 984 | 984 |
| 0.645x0.633 w/ L bar & flat bar | 2.00 | set | 555 | 1,110 |
| (7) Padlock | 1.00 | pcs. | 378 | 378 |
| Sub-Total of K-1 | | | | 4,435 |
| 2. Labor (30% of K-1) | | L.S. | | 1,331 |
| **Sub-Total of K** | | | | **5,766** |
| **L. Septic Tank and Sewage Basin** | | | | |
| 1. Materials | | | | |
| (1) 4" CHB | 180.00 | pcs. | 5 | 900 |
| (2) Cement | 18.00 | bags | 117 | 2,106 |
| (3) Sand | 1.50 | cu.m | 304 | 456 |
| (4) Gravel | 1.00 | cu.m | 385 | 385 |
| (5) Rebars: 10mm dia x 6m | 29.00 | pcs. | 68 | 1,972 |
| (6) #16 Tire Wire | 2.00 | kgs. | 49 | 98 |
| (7) Formworks: Coco Lumber | | | | |
| 2"x3"x10' = 12 pcs. | 60.00 | bf. | 8 | 480 |
| 1/4" plywood ord. 4'x8' | 2.00 | pcs. | 405 | 810 |
| C.W.N. (Assorted) | 2.00 | kgs. | 29 | 58 |
| Sub-Total of L-1 | | | | 7,265 |
| 2. Labor (30% of L-1) | | L.S. | | 2,180 |
| **Sub-Total of L** | | | | **9,445** |

**Table 10.2.13 Unit Cost of School Toilet**

Sheet-5 (Cost: Peso)

| Description | Quantity | Unit | Unit Cost | Cost |
|---|---|---|---|---|
| **M. Shallow Well (18 depth)** | | | | |
| **a. Drilling of Well & Installation of Steel Casing/Screen** | | | | |
| 1. Materials | | | | |
| (1) 63mm x 6m PVC Pipe with socket | 2.00 | pcs. | 813 | 1,626 |
| (2) 63mm x 3m PVC Pipe with plug | 1.00 | pc. | 410 | 410 |
| (3) 63mm PVC Socket | 1.00 | pc. | 90 | 90 |
| (4) 63mm x 3m PVC Screen | 1.00 | pc. | 1,300 | 1,300 |
| Sub-Total of M-a-1 | | | | 3,426 |
| 2. Labor, Fuel, Lubricant and others | | | | |
| Well Drilling for 18m depth at 150mm borehole | 18.00 | m | 520 | 9,360 |
| Sub-Total of M-a | | | | 12,786 |
| **b. Well Development** | | L.S. | | 500 |
| **c. Gravel Packing, Installation of Hand-Pump and Construction of Platform** | | | | |
| 1. Materials | | | | |
| (1) 50mm Jetmatic Handpump | 1.00 | set | 2,380 | 2,380 |
| (2) 50mm x 1m GI Pipe (Sch. 40) | 1.00 | pc. | 75 | 75 |
| (3) #10 Sieved Gravel | 0.10 | cu.m | 870 | 87 |
| (4) Coarse Sand | 0.07 | cu.m | 430 | 30 |
| (5) Cement for Sanitary Seal | 1.00 | bag | 117 | 117 |
| (6) Pump Base and Platform | | | | |
| 1) Cement | 4.00 | bags | 117 | 468 |
| 2) Gravel | 1.00 | cu.m | 385 | 385 |
| 3) Sand | 1.00 | cu.m | 304 | 304 |
| 4) Plywood (1,200mm x 2,400mm x 6mm) | 1.00 | pc. | 405 | 405 |
| 5) Form Lumber (50mmx75mmx1,800mm) | 1.00 | pc. | 45 | 45 |
| 6) Nail | 1.00 | kg. | 29 | 29 |
| Sub-Total of M-c-1 | | | | 33,823 |
| 2. Labor (40% of M-c-1) | | L.S. | | 13,529 |
| Sub-Total of M-c | | | | 47,352 |
| **Sub-Total of M** | | | | **60,638** |
| **N. Freight Cost (9% of Materials for A - M excluding sand and gravel)** | | **L.S.** | | **14,652** |
| **O. Indirect Cost** | | | | |
| Profit (10% of A - N) | | L.S. | | 25,949 |
| VAT (14% of Profit & Labor) | | L.S. | | 11,577 |
| **Sub-Total of O** | | | | **37,526** |
| **Total of Construction Cost (A to O)** | | | | **297,020** |
| **P. Estimated Government Expenses** | | | | |
| 1. Preliminary & Detailed Engineering Cost | | L.S. | | 2,000 |
| 2. Construction Supervision | | L.S. | | 1,500 |
| **Sub-Total of P** | | | | **3,500** |
| **GRAND TOTAL** | | | Say | 300,520<br>300,500 |

Source: DOH standard price in 1993.
Unit Cost: Adjusted to 1995 Price Level.

**Table 10.2.14 Unit Cost of Public Toilet**

Sheet-1 (Cost: Peso)

| Description | Quantity | Unit | Unit Cost | Cost |
|---|---|---|---|---|
| **A. Mobilization and Demobilization (2.4% of B - M)** | | **L.S.** | | **6,400** |
| **B. Earthwork** | | | | |
| 1. Materials | | | | |
| (1) Gravel Fill | 3.00 | cu.m | 385 | 1,155 |
| Sub-Total of B-1 | | | | 1,155 |
| 2. Labor | | | | |
| (1) Excavation | 15.88 | cu.m | 119 | 1,890 |
| (2) Backfill | 4.97 | cu.m | 108 | 537 |
| (3) Gravel Fill | 3.00 | cu.m | 141 | 423 |
| Sub-Total of B-2 | | | | 2,850 |
| **Sub-Total of B** | | | | **4,005** |
| **C. Concrete Work** | | | | |
| 1. Materials | | | | |
| (1) Cement | 61.00 | bags | 117 | 7,137 |
| (2) Sand | 4.00 | cu.m | 304 | 1,216 |
| (3) Gravel | 8.00 | cu.m | 385 | 3,080 |
| (4) Rebars: 12mm dia x 6m | 38.00 | pcs. | 68 | 2,584 |
| 10mm dia x 6m | 57.00 | pcs. | 48 | 2,736 |
| (5) #16 Tie Wire | 8.00 | kgs. | 48 | 384 |
| (6) Formworks: | | | | |
| 1/4" Plywood | 6.00 | pcs. | 405 | 2,430 |
| 2"x2"x10" (Coco Lumber) | 200.00 | bd.ft. | 8 | 1,600 |
| Sub-Total of C-1 | | | | 21,167 |
| 2. Labor (30% of C-1) | | L.S. | | 6,350 |
| **Sub-Total of C** | | | | **27,517** |
| **D. Masonry Work** | | | | |
| 1. Materials | | | | |
| (1) 6" CHB | 800.00 | pcs. | 6 | 4,800 |
| (2) 4" CHB | 260.00 | pcs. | 5 | 1,300 |
| (3) Cement | 97.00 | bags | 117 | 11,349 |
| (5) Sand | 10.00 | cu.m | 304 | 3,040 |
| (6) Rebars: 12mm dia x 6m | 30.00 | pcs. | 68 | 2,040 |
| 10mm dia x 6m | 11.00 | pcs. | 49 | 539 |
| (7) #16 Tie Wire | 4.00 | kgs. | 49 | 196 |
| (8) Scaffolding: | | | | |
| 2"x4"x8" = 10 pcs. (Coco Lumber) | 53.33 | bf. | 8 | 427 |
| Sub-Total of D-1 | | | | 23,691 |
| 2. Labor (30% of D-1) | | L.S. | | 7,107 |
| **Sub-Total of D** | | | | **30,798** |
| **E. Roofing Work** | | | | |
| 1. Materials | | | | |
| (1) GA #26 Corr. GI (1 = 10') | 20.00 | pcs. | 274 | 5,480 |
| (2) GA #24 Pln. GI Flashing | 3.00 | pcs. | 264 | 792 |
| (3) GA #24 Pln. GI Gutter (Pre-Fab) | 9.00 | pcs. | 264 | 2,376 |
| (4) Umbrella Nails 2 - 1/2" | 12.00 | kgs. | 44 | 528 |
| (5) Rafter - 2"x5"x18' = 5 pcs. | 75.00 | bf. | 32 | 2,400 |

**Table 10.2.14 Unit Cost of Public Toilet**

Sheet-2 (Cost: Peso)

| Description | Quantity | Unit | Unit Cost | Cost |
|---|---|---|---|---|
| (6) Purlins - 2"x2"x12' = 18 pcs. | 72.00 | bf. | 32 | 2,304 |
| (7) WD Cleats - 2"x2"x10" = 6 pcs. | 20.00 | bf. | 32 | 640 |
| (8) Nailers - 2"x2"x1012' = 30 pcs. | 120.00 | bf. | 32 | 3,840 |
| - 2"x2"x10' = 36 pcs. | 120.00 | bf. | 32 | 3,840 |
| (9) Fascia Board | | | | |
| 1"x12"x12' = 4 pcs. | 48.00 | bf. | 32 | 1,536 |
| 1"x12"x18' = 2 pcs. | 36.00 | bf. | 32 | 1,152 |
| (10) Wood Plate | | | | |
| 2"x4"x20' = 2 pcs. | 26.66 | bf. | 32 | 853 |
| (11) 1/4" Thk. Mar. Plywood 4'x8' | 14.00 | pcs. | 452 | 6,328 |
| (12) C.W.N. Assorted | 15.00 | kgs. | 29 | 435 |
| (13) 3" dia x 3m Downspout (PVC) | 3.00 | pcs. | 81 | 243 |
| (14) 3" dia Elbow (PVC) | 2.00 | pcs. | 15 | 30 |
| (15) 3"dia Coupling (PVC) | 1.00 | pcs. | 14 | 14 |
| (16) Ceiling Vent, 1"x1"x8', 4 pcs. | 2.67 | bf. | 26 | 69 |
| (17) Screen (1/8"x1/8") | 1.00 | yd. | 81 | 81 |
| Sub-Total of E-1 | | | | 32,941 |
| 2. Labor (30% of E-1) | | L.S. | | 9,882 |
| **Sub-Total of E** | | | | **42,823** |
| **F. Carpentry Work** | | | | |
| 1. Materials | | | | |
| (1) D - 1 Hollow Core Tanguile | | | | |
| Flush Type Door w/ Louver (.80x2.20) | 2.00 | sets | 1,428 | 2,856 |
| (2) D - 2 Hollow Core Tanguile | | | | |
| Flush Type Door (.60x2.10) | 1.00 | sets | 1,071 | 1,071 |
| (3) D - 3 Louver Door (.60x1.40) | 5.00 | sets | 893 | 4,465 |
| (4) Door Jambs (Apitong) | | | | |
| 2"x6"x14" = 1 pc. | 14.00 | bf. | 32 | 448 |
| 2"x6"x10" = 2 pcs. | 20.00 | bf. | 32 | 640 |
| 2"x6"x10" = 1 pc. | 18.00 | bf. | 32 | 576 |
| 2"x4"x12" = 5 pcs. | 40.00 | bf. | 32 | 1,280 |
| (7) Wooden Jalousie Window | | | | |
| With 5 Blades (.40x.50) | 14.00 | set | 298 | 4,172 |
| (8) Window Jambs (Apitong) | | | | |
| 2"x6"x16" = 5 pcs. | 80.00 | bf. | 32 | 2,560 |
| 2"x6"x14" = 1 pc. | 14.00 | bf. | 32 | 448 |
| 2"x6"x10" = 1 pc. | 10.00 | bf. | 32 | 320 |
| (9) Cabinet | | | | |
| 3/4"x4'x8' = 1 pc. (plyboard) | 1.00 | pc. | 774 | 774 |
| Sub-Total of F-1 | | | | 19,610 |
| 2. Labor (30% of F-1) | | L.S. | | 5,883 |
| **Sub-Total of F** | | | | **25,493** |
| **G. Tile Work** | | | | |
| 1. Materials | | | | |
| (1) 4 - 1/4"x4 - 1/4" Glazed Tiles | 1,950.00 | pcs. | 4 | 7,800 |
| (2) 0.10x0.20m Floor Tiles | 900.00 | pcs. | 7 | 6,300 |
| (3) Cement | 4.00 | bags | 117 | 468 |

**Table 10.2.14 Unit Cost of Public Toilet**

Sheet-3 (Cost: Peso)

| Description | Quantity | Unit | Unit Cost | Cost |
|---|---|---|---|---|
| (4) White Cement | 1.00 | bag | 629 | 629 |
| (5) Tiles Fittings | | L.S. | 4,790 | 4,790 |
| Sub-Total of G-1 | | | | 19,987 |
| 2. Labor (30% of G-1) | | L.S. | | 5,996 |
| **Sub-Total of G** | | | | **25,983** |
| **H. Plumbing Work** | | | | |
| 1. Materials | | | | |
| (1) Urinal | 3.00 | sets | 1,063 | 3,189 |
| (2) Toilet Bowl - Squat Type | 6.00 | sets | 596 | 3,576 |
| (3) 4" dia x 3m PVC San. Pipe | 6.00 | pcs. | 149 | 894 |
| (4) 3" dia x 3m PVC San. Pipe | 4.00 | pcs. | 84 | 336 |
| (5) 2" dia x 3m PVC San. Pipe | 3.00 | pcs. | 50 | 150 |
| (6) 3/4" dia x 6m G.I. Pipe Sch. 40 | 5.00 | pcs. | 244 | 1,220 |
| (7) 1/2" dia x 6m G.I. Pipe Sch. 40 | 1.00 | pcs. | 179 | 179 |
| (8) 4"x4" WYE PVC | 1.00 | pcs. | 25 | 25 |
| (9) 3" dia Elbow PVC | 10.00 | pcs. | 30 | 300 |
| (10) 3" dia 45 degrees Bend PVC | 2.00 | pcs. | 25 | 50 |
| (11) 2" dia Elbow PVC | 6.00 | pcs. | 7 | 42 |
| (12) 2" dia 45 degrees Bend PVC | 2.00 | pcs. | 20 | 40 |
| (13) 1/2" dia Elbow G.I. | 5.00 | pcs. | 10 | 50 |
| (14) 4" dia 3" dia WYE PVC | 8.00 | pcs. | 40 | 320 |
| (15) 3/4" dia TEE G.I. | 7.00 | pcs. | 40 | 280 |
| (16) 1/2" dia TEE G.I. | 5.00 | pcs. | 20 | 100 |
| (17) 4" dia x 2" dia TEE PVC | 6.00 | pcs. | 40 | 240 |
| (18) 4" dia Clean Out PVC | 3.00 | pcs. | 35 | 105 |
| (19) 2" dia Clean Out PVC | 1.00 | pcs. | 25 | 25 |
| (20) Faucet | 10.00 | pcs. | 50 | 500 |
| (21) 3" dia x 2" dia Elbow Reducer PVC | 1.00 | pcs. | 28 | 28 |
| (22) 3" dia x 2" dia WYE PVC | 3.00 | pcs. | 25 | 75 |
| (23) 2" dia x 2" dia WYE PVC | 3.00 | pcs. | 15 | 45 |
| (24) PVC Cement | 1.00 | can | 121 | 121 |
| (25) 4" dia x 2" dia WYE PVC | 2.00 | pcs. | 40 | 80 |
| (26) Gate Valve 3/4" dia | 1.00 | pcs. | 121 | 121 |
| (27) Gate Valve 1/2" dia | 1.00 | pcs. | 96 | 96 |
| (28) Water Meter 3/4" dia | 1.00 | pcs. | 1,261 | 1,261 |
| (29) 3/4"dia x1/2"dia Elbow Reducer G.I. | 1.00 | pcs. | 14 | 14 |
| Sub-Total of H-1 | | | | 13,462 |
| 2. Labor (30% of H-1) | | L.S. | | 4,039 |
| **Sub-Total of H** | | | | **17,501** |
| **I. Painting** | | | | |
| 1. Materials | | | | |
| (1) Acrylic, Semi Gloss | 8.00 | gals. | 261 | 2,088 |
| (2) Concrete Sealer | 4.00 | gals. | 206 | 824 |
| (3) Acri Color: Wood | 4.00 | gals. | 80 | 320 |
| (4) Enamel, QDE | 6.00 | gals. | 266 | 1,596 |
| (5) Wood Putty | 1.00 | gals. | 302 | 302 |
| (6) Paint Thinner | 1.00 | gals. | 60 | 60 |

**Table 10.2.14 Unit Cost of Public Toilet**

Sheet-4 (Cost: Peso)

| Description | Quantity | Unit | Unit Cost | Cost |
|---|---|---|---|---|
| (7) Tinting Color | 4.00 | pint | 40 | 160 |
| (8) Sand Paper (Assorted) | 15.00 | pcs. | 7 | 105 |
| (9) Misecellaneous | | L.S. | 1,005 | 0 |
| (10) Roof Paint (green, ready-mix) | 2.00 | gals. | 281 | 562 |
| Sub-Total of I-1 | | | | 6,017 |
| 2. Labor (30% of I-1) | | L.S. | | 1,805 |
| **Sub-Total of I** | | | | **7,822** |
| **J. Electrical Work** | | | | |
| 1. Materials | | | | |
| (1) 40 Watts Flourescent Lamp | 2.00 | sets | 255 | 510 |
| (2) Elect. Wire TW #12 | 24.00 | M | 7 | 168 |
| (3) Elect. Conduit - 1/2" dia x 10' | 4.00 | pcs. | 78 | 312 |
| (4) Entrance Cap. 1/2" dia | 1.00 | pc. | 29 | 29 |
| (5) Switch Outlet, Flush Type | 2.00 | pcs. | 39 | 78 |
| (6) Utility Box 2"x3" | 2.00 | pcs. | 7 | 14 |
| (7) Porcelain Receptacle 2" dia | 2.00 | pcs. | 7 | 14 |
| (8) Safety Switch 60A, 250V | 1.00 | set | 490 | 490 |
| (9) Electrical Tape | 1.00 | roll | 22 | 22 |
| Sub-Total of J-1 | | | | 1,637 |
| 2. Labor (30% of J-1) | | L.S. | | 491 |
| **Sub-Total of J** | | | | **2,128** |
| **K. Hardware** | | | | |
| 1. Materials | | | | |
| (1) 3"x3" Butt Hinges (Loose Pin) | 10.00 | pcs. | 15 | 150 |
| (2) 4"x4" Butt Hinges (Loose Pin) | 12.00 | pcs. | 18 | 216 |
| (3) Door Lockset (Schlage US) | 3.00 | pcs. | 454 | 1,362 |
| (4) Barrel Bolt (4") | 5.00 | pcs. | 40 | 200 |
| (5) Cabinet Pull (4") | 5.00 | pcs. | 7 | 35 |
| (6) Water Storage Cover | | | | |
| Checkered Plate 1/4" thick | | | | |
| 1.44x0.633 w/ L bar & flat bar | 1.00 | set | 984 | 984 |
| (7) 0.645x0.633 w/ L bar & flat bar | 2.00 | set | 555 | 1,110 |
| (8) Padlock | 1.00 | pcs. | 378 | 378 |
| Sub-Total of K-1 | | | | 4,435 |
| 2. Labor (30% of K-1) | | L.S. | | 1,331 |
| **Sub-Total of K** | | | | **5,766** |
| **L. Septic Tank and Sewage Basin** | | | | |
| 1. Materials | | | | |
| (1) 4" CHB | 180.00 | pcs. | 5 | 900 |
| (2) Cement | 18.00 | bags | 117 | 2,106 |
| (3) Sand | 1.50 | cu.m | 304 | 456 |
| (4) Gravel | 1.00 | cu.m | 385 | 385 |
| (5) Rebars: 10mm dia x 6m | 29.00 | pcs. | 68 | 1,972 |
| (6) #16 Tire Wire | 2.00 | kgs. | 49 | 98 |

**Table 10.2.14 Unit Cost of Public Toilet**

Sheet-5 (Cost: Peso)

| Description | Quantity | Unit | Unit Cost | Cost |
|---|---|---|---|---|
| (7) Formworks: Coco Lumber | | | | |
| 2"x3"x10' = 12 pcs. | 60.00 | bf. | 8 | 480 |
| 1/4" plywood ord. 4'x8' | 2.00 | pcs. | 405 | 810 |
| C.W.N. (Assorted) | 2.00 | kgs. | 29 | 58 |
| Sub-Total of L-1 | | | | 7,265 |
| 2. Labor (30% of L-1) | | L.S. | | 2,180 |
| **Sub-Total of L** | | | | **9,445** |
| **M. Concrete Water Tank (Elevated)** | | | | |
| 1. Earth Work | | | | |
| (1) Materials | | | | |
| 1) Gravel Fill | 1.00 | cu.m | 385 | 385 |
| Sub-Total of M-1 (1) | | | | 385 |
| (2) Labor | | | | |
| 1) Excavation | 14.70 | cu.m | 119 | 1,749 |
| 2) Backfill | 13.08 | cu.m | 108 | 1,413 |
| 3) Gravel Fill | 1.00 | cu.m | 141 | 141 |
| Sub-Total of M-1 (2) | | | | 3,303 |
| Sub-Total of M-1 | | | | 3,688 |
| 2. Materials | | | | |
| (1) Cement | 62.00 | bags | 117 | 7,254 |
| (2) Sand | 4.50 | cu.m | 304 | 1,368 |
| (3) Gravel | 8.00 | cu.m | 385 | 3,080 |
| (4) Rebars: 12mm dia x 6m | 160.00 | pcs. | 49 | 7,840 |
| (5) #16 Tie Wire | 4.00 | kgs. | 49 | 196 |
| (6) Formworks: | | | | |
| 1/4" plywood | 12.00 | pcs. | 405 | 4,860 |
| 2"x3"x16' = 60 pcs. | 480.00 | bf. | 8 | 3,840 |
| (7) C.W.N. (Assorted) | 5.00 | kgs. | 29 | 145 |
| Sub-Total of M-2 | | | | 39,647 |
| 3. Labor (30% of M-2) | | L.S. | | 11,894 |
| **Sub-Total of M** | | | | **55,229** |
| **N. Freight Cost (9% of Materials for A - M excluding sand and gravel)** | | **L.S.** | | **15,951** |
| **O. Indirect Cost** | | | | |
| Profit (10% of A - M) | | L.S. | | 27,686 |
| VAT (14% of Profit & Labor) | | L.S. | | 12,712 |
| **Sub-Total of O** | | | | **40,398** |
| **Total of Construction Cost (A to O)** | | | | **317,259** |
| **P. Estimated Government Expenses** | | | | |
| 1. Preliminary & Detailed Engineering Cost | | L.S. | | 2,000 |
| 2. Construction Supervision | | L.S. | | 1,500 |
| **Sub-Total of P** | | | | **3,500** |
| **GRAND TOTAL** | | | | **320,759** |
| | | | Say | 320,800 |

Source: DOH standard price in 1993.
Unit Cost: Adjusted to 1995 Price Level

### 10.2.2 Unit Cost of Equipment

Unit cost (CIF Manila) of equipment was referred to the standard cost estimates of DPWH as follows.

(1) Medium size rotary drilling rig

Type:

Truck-mounted top head drive mud circulation type

Rated drilling capacity:

150 m depth for ϕ250 mm bore hole

Equipment composition:

One unit of truck-mounted drilling rig

Each one set of operating accessories, drilling tools, casing tools and fishing tools

One set of spare parts (equivalent to 10% of above equipment/tool cost)

Unit cost:

Peso 17,370,000 per set

(2) Medium size percussion drilling equipment

Type:

Truck-mounted cable percussion type

Rated drilling capacity:

150 m depth for ϕ250 mm bore hole

Equipment composition:

One unit of truck-mounted drilling rig

Each one set of operating accessories, drilling tools, pipe handling tools and fishing tools

One set of spare parts (equivalent to 10% of above equipment/tool cost)

Unit cost:

Peso 10,280,000 per set

(3) Well rehabilitation equipment

Equipment composition:

One unit of diesel engine driven air compressor (7.5 kg/sq.cm, 500 liter/min.)

One set of air hose and hose fittings

Unit cost:

Peso 138,000 per set

(4) Service truck

Type:

Diesel engine driven 4 tons truck equipped with crane

Unit cost:

Peso 1,175,000 per unit

(5) Support vehicle

Type:

Diesel engine driven pick-up truck with electric winch

Unit cost:

Peso 500,000 per unit

(6) Refuse collection truck

Type:

Closed type compactor truck with 5 cu.m of payload capacity

Unit cost:

Peso 1,380,000 per unit including spare parts

## Table 10.3.1 Construction Cost of Water Supply Facilities Required for Phase I (2000)

Unit: 1,000 Pesos

| Municipalities | Urban Water Supply Level III | Rural Water Supply | | | | | | | | Grand Total |
|---|---|---|---|---|---|---|---|---|---|---|
| | | New System | | | | | | Level I Rehabilitation | Total | |
| | | Level II | Level I | | | | | | | |
| | | | Deep Well | | | Shallow Wells | Sub-Total | | | |
| | | | 30 m | 50 m | 70 m | | | | | |
| Adams | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 13 | 13 |
| Bacarra | 2,705 | 0 | 0 | 14,402 | 0 | 0 | 14,402 | 260 | 14,662 | 17,367 |
| Badoc | 3,956 | 0 | 0 | 25,995 | 0 | 0 | 25,995 | 469 | 26,464 | 30,420 |
| Bangui | 1,800 | 0 | 1,431 | 0 | 0 | 0 | 1,431 | 38 | 1,469 | 3,269 |
| Batac | 2,683 | 0 | 5,605 | 0 | 0 | 0 | 5,605 | 149 | 5,754 | 8,437 |
| Burgos | 708 | 0 | 3,220 | 0 | 0 | 0 | 3,220 | 86 | 3,306 | 4,014 |
| Carassi | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Currimao | 0 | 0 | 0 | 7,201 | 0 | 0 | 7,201 | 130 | 7,331 | 7,331 |
| Dingras | 0 | 510 | 0 | 6,499 | 0 | 0 | 6,499 | 117 | 7,126 | 7,126 |
| Dumalneg | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Espiritu | 0 | 0 | 0 | 2,108 | 0 | 0 | 2,108 | 38 | 2,146 | 2,146 |
| Laoag City (Capital) | 17,487 | 0 | 0 | 18,618 | 0 | 0 | 18,618 | 336 | 18,954 | 36,441 |
| Marcos | 1,512 | 0 | 0 | 3,688 | 0 | 0 | 3,688 | 67 | 3,755 | 5,267 |
| Nueva Era | 1,212 | 0 | 0 | 3,688 | 0 | 0 | 3,688 | 67 | 3,755 | 4,967 |
| Pagudpud | 389 | 550 | 1,312 | 0 | 0 | 0 | 1,312 | 35 | 1,897 | 2,286 |
| Paoay | 8,500 | 0 | 0 | 8,079 | 0 | 0 | 8,079 | 146 | 8,225 | 16,725 |
| Pasuquin | 0 | 0 | 0 | 8,606 | 0 | 0 | 8,606 | 155 | 8,761 | 8,761 |
| Piddig | 1,840 | 490 | 0 | 4,040 | 0 | 0 | 4,040 | 73 | 4,603 | 6,443 |
| Pinili | 0 | 0 | 0 | 11,944 | 0 | 0 | 11,944 | 215 | 12,159 | 12,159 |
| San Nicolas | 0 | 0 | 0 | 6,499 | 0 | 0 | 6,499 | 117 | 6,616 | 6,616 |
| Sarrat | 940 | 0 | 0 | 10,890 | 0 | 0 | 10,890 | 196 | 11,086 | 12,026 |
| Solsona | 404 | 0 | 0 | 11,944 | 0 | 0 | 11,944 | 215 | 12,159 | 12,563 |
| Vintar | 2,087 | 0 | 0 | 3,162 | 0 | 0 | 3,162 | 57 | 3,219 | 5,306 |
| **Provincial Total** | 46,223 | 1,550 | 11,568 | 147,363 | 0 | 0 | 158,931 | 2,979 | 163,460 | 209,683 |

Table 10.3.2 Construction Cost of Water Supply Facilities Required for Phase II (2010)

Unit: 1,000 Pesos

| Municipalities | Urban Water Supply Level III | Rural Water Supply (Level I) | | | | | | | Grand Total |
|---|---|---|---|---|---|---|---|---|---|
| | | New System | | | | | Level I Rehabilitation | Total | |
| | | Deep Well | | | Shallow Wells | Sub-total | | | |
| | | 30 m | 50 m | 70 m | | | | | |
| Adams | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 13 | 13 |
| Bacarra | 10,834 | 0 | 12,822 | 0 | 0 | 12,822 | 231 | 13,053 | 23,887 |
| Badoc | 3,526 | 0 | 15,632 | 0 | 0 | 15,632 | 282 | 15,914 | 19,440 |
| Bangui | 9,021 | 4,293 | 0 | 0 | 0 | 4,293 | 114 | 4,407 | 13,428 |
| Batac | 30,334 | 13,236 | 0 | 0 | 0 | 13,236 | 352 | 13,588 | 43,922 |
| Burgos | 3,489 | 2,981 | 0 | 0 | 0 | 2,981 | 79 | 3,060 | 6,549 |
| Carassi | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 6 | 6 |
| Currimao | 973 | 0 | 5,620 | 0 | 0 | 5,620 | 101 | 5,721 | 6,694 |
| Dingras | 3,249 | 0 | 16,335 | 0 | 0 | 16,335 | 295 | 16,630 | 19,879 |
| Dumalneg | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 10 | 10 |
| Espiritu | 2,168 | 0 | 7,904 | 0 | 0 | 7,904 | 143 | 8,047 | 10,215 |
| Laoag City (Capital) | 57,968 | 0 | 30,737 | 0 | 0 | 30,737 | 554 | 31,291 | 89,259 |
| Marcos | 4,766 | 0 | 7,904 | 0 | 0 | 7,904 | 143 | 8,047 | 12,813 |
| Nueva Era | 4,710 | 0 | 2,810 | 0 | 0 | 2,810 | 51 | 2,861 | 7,571 |
| Pagudpud | 4,196 | 5,366 | 0 | 0 | 0 | 5,366 | 143 | 5,509 | 9,705 |
| Paoay | 17,446 | 0 | 9,133 | 0 | 0 | 9,133 | 165 | 9,298 | 26,744 |
| Pasuquin | 4,177 | 0 | 11,065 | 0 | 0 | 11,065 | 200 | 11,265 | 15,442 |
| Piddig | 11,633 | 0 | 9,485 | 0 | 0 | 9,485 | 171 | 9,656 | 21,289 |
| Pinili | 936 | 0 | 8,079 | 0 | 0 | 8,079 | 146 | 8,225 | 9,161 |
| San Nicolas | 14,784 | 0 | 5,972 | 0 | 0 | 5,972 | 108 | 6,080 | 20,864 |
| Sarrat | 9,616 | 0 | 9,836 | 0 | 0 | 9,836 | 177 | 10,013 | 19,629 |
| Solsona | 13,472 | 0 | 10,890 | 0 | 0 | 10,890 | 196 | 11,086 | 24,558 |
| Vintar | 8,569 | 0 | 15,105 | 0 | 0 | 15,105 | 272 | 15,377 | 23,946 |
| **Provincial Total** | 215,867 | 25,876 | 179,329 | 0 | 0 | 205,205 | 3,952 | 209,157 | 425,024 |

## Table 10.3.3 Costs of Sanitation Facilities Required for Phase I (2000)

Unit: 1,000 Pesos

| Municipality | Urban Sanitation | | | | | | | | | Rural Sanitation | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Household Toilets | | | | | Public School Toilets | Public Toilets | Total Construction Cost | Total Public Investment Cost | Household Toilets | | | | | Public School Toilets | Total Construction Cost | Total Public Investment Cost |
| | Flush | Pour Flush | VIP Latrine | Sub-total of Construction Cost | Sub-total of Public Investment Cost | | | | | Flush | Pour Flush | VIP Latrine | Sub-total of Construction Cost | Sub-total of Public Investment Cost | | | |
| Adams | 0 | 0 | 0 | 0 | 0 | 0 | 317 | 317 | 317 | 816 | 133 | 0 | 949 | 5 | 0 | 949 | 5 |
| Bacarra | 0 | 2,354 | 0 | 2,354 | 97 | 0 | 0 | 2,354 | 97 | 6,307 | 4,336 | 0 | 10,643 | 178 | 409 | 11,052 | 587 |
| Badoc | 1,521 | 0 | 0 | 1,521 | 0 | 0 | 317 | 1,838 | 317 | 0 | 3,870 | 0 | 3,870 | 159 | 0 | 3,870 | 159 |
| Bangui | 4,526 | 0 | 0 | 4,526 | 0 | 0 | 317 | 4,843 | 317 | 0 | 3,352 | 0 | 3,352 | 138 | 0 | 3,352 | 138 |
| Batac | 15,026 | 0 | 0 | 15,026 | 0 | 0 | 635 | 15,661 | 635 | 0 | 15,282 | 0 | 15,282 | 629 | 0 | 15,282 | 629 |
| Burgos | 2,152 | 0 | 0 | 2,152 | 0 | 0 | 635 | 2,787 | 635 | 4,267 | 4,362 | 0 | 8,629 | 179 | 0 | 8,629 | 179 |
| Carassi | 0 | 0 | 0 | 0 | 0 | 0 | 317 | 317 | 317 | 0 | 1,476 | 0 | 1,476 | 61 | 0 | 1,476 | 61 |
| Currimao | 0 | 0 | 0 | 0 | 0 | 0 | 317 | 317 | 317 | 4,749 | 3,963 | 0 | 8,712 | 163 | 0 | 8,712 | 163 |
| Dingras | 6,901 | 0 | 0 | 6,901 | 0 | 0 | 635 | 7,536 | 635 | 7,235 | 0 | 0 | 7,235 | 0 | 0 | 7,235 | 0 |
| Dumalneg | 0 | 0 | 0 | 0 | 0 | 0 | 317 | 317 | 317 | 705 | 0 | 0 | 705 | 0 | 0 | 705 | 0 |
| Espiritu | 186 | 2,088 | 0 | 2,274 | 86 | 0 | 0 | 2,274 | 86 | 0 | 8,658 | 0 | 8,658 | 356 | 0 | 8,658 | 356 |
| Laoag City (Capital) | 3,562 | 3,817 | 0 | 7,379 | 157 | 4,013 | 635 | 12,027 | 4,805 | 4,786 | 12,050 | 0 | 16,836 | 496 | 4,711 | 21,547 | 5,207 |
| Marcos | 2,412 | 0 | 0 | 2,412 | 0 | 0 | 317 | 2,729 | 317 | 0 | 3,445 | 0 | 3,445 | 142 | 0 | 3,445 | 142 |
| Nueva Era | 1,966 | 412 | 0 | 2,378 | 17 | 0 | 317 | 2,695 | 334 | 0 | 4,429 | 0 | 4,429 | 182 | 0 | 4,429 | 182 |
| Pagudpud | 6,567 | 0 | 0 | 6,567 | 0 | 0 | 635 | 7,202 | 635 | 9,312 | 279 | 0 | 9,591 | 11 | 0 | 9,591 | 11 |
| Paoay | 186 | 466 | 0 | 652 | 19 | 0 | 0 | 652 | 19 | 482 | 6,597 | 0 | 7,079 | 271 | 0 | 7,079 | 271 |
| Pasuquin | 1,113 | 2,367 | 0 | 3,480 | 97 | 311 | 317 | 4,108 | 725 | 0 | 15,694 | 0 | 15,694 | 645 | 979 | 16,673 | 1,624 |
| Piddig | 2,300 | 0 | 0 | 2,300 | 0 | 0 | 317 | 2,617 | 317 | 0 | 2,008 | 0 | 2,008 | 83 | 0 | 2,008 | 83 |
| Pinili | 3,116 | 0 | 0 | 3,116 | 0 | 0 | 0 | 3,116 | 0 | 0 | 3,564 | 0 | 3,564 | 147 | 0 | 3,564 | 147 |
| San Nicolas | 17,252 | 0 | 0 | 17,252 | 0 | 0 | 317 | 17,569 | 317 | 0 | 1,303 | 0 | 1,303 | 54 | 0 | 1,303 | 54 |
| Sarrat | 4,675 | 0 | 0 | 4,675 | 0 | 0 | 317 | 4,992 | 317 | 0 | 1,397 | 0 | 1,397 | 57 | 0 | 1,397 | 57 |
| Solsona | 0 | 519 | 0 | 519 | 21 | 0 | 0 | 519 | 21 | 0 | 2,820 | 0 | 2,820 | 116 | 848 | 3,668 | 964 |
| Vintar | 3,228 | 2,461 | 0 | 5,689 | 101 | 0 | 317 | 6,006 | 418 | 0 | 21,320 | 0 | 21,320 | 877 | 1,176 | 22,496 | 2,053 |
| Provincial Total | 76,689 | 14,484 | 0 | 91,173 | 595 | 4,324 | 7,296 | 102,793 | 12,215 | 38,659 | 120,338 | 0 | 158,997 | 4,949 | 8,123 | 167,120 | 13,072 |

## Table 10.3.4 Costs of Sanitation Facilities Required for Phase II (2010)

Unit: 1,000 Pesos

| Municipality | Urban Sanitation | | | | | | | | | | Rural Sanitation | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Household Toilets | | | | | Public School Toilets | Public Toilets | Total Construction Cost | Total Public Investment Cost | Urban Sewerage | Houshold Toilets | | | | | Public School Toilets | Total Construction Cost | Total Public Investment Cost |
| | Flush | Pour Flush | VIP Latrine | Sub-total of Construction Cost | Sub-total of Public Investment Cost | | | | | | Flush | Pour Flush | VIP Latrine | Sub-total of Construction Cost | Sub-total of Public Investment Cost | | | |
| Adams | 0 | 0 | 0 | 0 | 0 | 0 | 317 | 317 | 317 | 0 | 1,670 | 971 | 0 | 2,641 | 40 | 0 | 2,641 | 40 |
| Bacarra | 28,196 | 0 | 0 | 28,196 | 0 | 311 | 317 | 28,824 | 628 | 36,996 | 27,640 | 11,518 | 0 | 39,158 | 474 | 733 | 39,891 | 1,207 |
| Badoc | 5,899 | 0 | 0 | 5,899 | 0 | 0 | 635 | 6,534 | 635 | 0 | 0 | 29,992 | 0 | 29,992 | 1,234 | 732 | 30,724 | 1,966 |
| Bangui | 13,616 | 0 | 0 | 13,616 | 0 | 0 | 317 | 13,933 | 317 | 0 | 742 | 10,254 | 0 | 10,996 | 422 | 526 | 11,522 | 948 |
| Batac | 49,120 | 0 | 0 | 49,120 | 0 | 396 | 635 | 50,151 | 1,031 | 59,838 | 0 | 37,400 | 0 | 37,400 | 1,538 | 1,306 | 38,706 | 2,844 |
| Burgos | 5,083 | 0 | 0 | 5,083 | 0 | 0 | 635 | 5,718 | 635 | 0 | 3,413 | 7,594 | 0 | 11,007 | 312 | 355 | 11,362 | 667 |
| Carrassi | 0 | 0 | 0 | 0 | 0 | 0 | 317 | 317 | 317 | 0 | 0 | 811 | 0 | 811 | 33 | 0 | 811 | 33 |
| Currimao | 3,413 | 1,210 | 0 | 4,623 | 50 | 0 | 635 | 5,258 | 685 | 0 | 2,300 | 10,055 | 0 | 12,355 | 414 | 339 | 12,694 | 753 |
| Dingras | 20,850 | 0 | 0 | 20,850 | 0 | 0 | 635 | 21,485 | 635 | 0 | 2,820 | 30,111 | 0 | 32,931 | 1,238 | 715 | 33,646 | 1,953 |
| Dumalneg | 0 | 0 | 0 | 0 | 0 | 0 | 317 | 317 | 317 | 0 | 1,373 | 745 | 0 | 2,118 | 31 | 0 | 2,118 | 31 |
| Espiritu | 11,167 | 0 | 0 | 11,167 | 0 | 0 | 635 | 11,802 | 635 | 0 | 0 | 17,037 | 0 | 17,037 | 701 | 318 | 17,355 | 1,019 |
| Laoag City (Capital) | 143,614 | 0 | 0 | 143,614 | 0 | 1,245 | 635 | 145,494 | 1,880 | 180,785 | 7,346 | 52,389 | 0 | 59,735 | 2,155 | 1,460 | 61,195 | 3,615 |
| Marcos | 5,231 | 0 | 0 | 5,231 | 0 | 0 | 635 | 5,866 | 635 | 0 | 0 | 15,215 | 0 | 15,215 | 626 | 381 | 15,596 | 1,007 |
| Nueva Era | 5,417 | 0 | 0 | 5,417 | 0 | 0 | 317 | 5,734 | 317 | 0 | 0 | 5,160 | 0 | 5,160 | 212 | 0 | 5,160 | 212 |
| Pagudpud | 14,580 | 0 | 0 | 14,580 | 0 | 0 | 635 | 15,215 | 635 | 0 | 10,722 | 15,242 | 0 | 25,964 | 627 | 499 | 26,463 | 1,126 |
| Paoay | 25,117 | 0 | 0 | 25,117 | 0 | 0 | 635 | 25,752 | 635 | 0 | 2,857 | 18,660 | 0 | 21,517 | 767 | 330 | 21,847 | 1,097 |
| Pasuquin | 19,032 | 0 | 0 | 19,032 | 0 | 0 | 635 | 19,667 | 635 | 0 | 0 | 19,777 | 0 | 19,777 | 813 | 631 | 20,408 | 1,444 |
| Piddig | 13,838 | 0 | 0 | 13,838 | 0 | 0 | 317 | 14,155 | 317 | 0 | 0 | 15,947 | 0 | 15,947 | 656 | 438 | 16,385 | 1,094 |
| Pinili | 7,197 | 0 | 0 | 7,197 | 0 | 0 | 317 | 7,514 | 317 | 0 | 0 | 16,638 | 0 | 16,638 | 684 | 417 | 17,055 | 1,101 |
| San Nicolas | 68,524 | 0 | 0 | 68,524 | 0 | 656 | 317 | 69,497 | 973 | 86,271 | 0 | 11,997 | 0 | 11,997 | 493 | 321 | 12,318 | 814 |
| Sarrat | 25,414 | 0 | 0 | 25,414 | 0 | 0 | 317 | 25,731 | 317 | 0 | 0 | 15,189 | 0 | 15,189 | 625 | 383 | 15,572 | 1,008 |
| Solsona | 12,911 | 0 | 0 | 12,911 | 0 | 0 | 635 | 13,546 | 635 | 0 | 0 | 20,948 | 0 | 20,948 | 862 | 580 | 21,528 | 1,442 |
| Vintar | 15,656 | 0 | 0 | 15,656 | 0 | 0 | 635 | 16,291 | 635 | 0 | 0 | 27,212 | 0 | 27,212 | 1,119 | 605 | 27,817 | 1,724 |
| **Provincial Total** | 493,875 | 1,210 | 0 | 495,085 | 50 | 2,608 | 11,425 | 509,118 | 14,083 | 363,890 | 60,883 | 390,862 | 0 | 451,745 | 16,076 | 11,069 | 462,814 | 27,145 |

## 10.4 Costs of Sector Management

### 10.4.1 Breakdown of Community Development and Training Cost

Cost of community development and training was estimated at 12% of the total construction cost of Level I & II water supply facilities and public toilets and at 3% of the total construction cost of Level III water supply systems. This was formulated based on the following:

(1) The 12% was derived on the basis of DILG's past experience in BWSA formation; and
(2) The 3% was derived on the basis of LWUA's past experience in the institutional strengthening needs of W.Ds.

These ratios adopted for estimating community development and training cost will allow the province to meet with its needs for community development in the sector management. The following breakdown provides a view of the components under this category.

**Table 10.4.1 Breakdown of Community Development and Training Cost**

| Component | % Share of Cost |
|---|---|
| 1. Preparation for Training Activities | 10 |
| 1.1 Transportation | 1 |
| 1.2 Technical Assistance | 1 |
| 1.3 Food | 1 |
| 1.4 Supplies and Materials including Production of Training Kits | 6 |
| 1.5 Generation of Training Aids | 1 |
| 2. Conduct of Training Activities | 53 |
| 2.1 Transporation | 5 |
| 2.2 Food | 12 |
| 2.3 Accommodation | 33 |
| 2.4 Training Room Rental | 1 |
| 2.5 Miscellaneous | 2 |
| 3. Field Visits to Support BWSA Formation | 37 |
| 3.1 Transporation | 5 |
| 3.2 Food | 15 |
| 3.3 Accommodation | 12 |
| 3.4 Field | 4 |
| Total | 100 |

# 11. FINANCIAL ARRANGEMENTS

## 11.3 Additional Funding Requirements

### Percentages for Annual Investment

Percentages of annual investment for different fields of implementation activities are assumed for each sub-sector as general indication and summarized in Table 11.3.1. Assumptions on investment timing shall be subject to change, especially for individual projects depending on fund availability and relevant conditions such as land acquisition and institutional set-up.

**Table 11.3.1 Percentages for Annual Investment**

| Sub-Sector | Component | 1996 | 1997 | 1998 | 1999 | 2000 | Total |
|---|---|---|---|---|---|---|---|
| Urban Water Supply | Level III System | | | | | | |
| | Feasibility Study and Detail Design | 50 | 50 | 0 | 0 | 0 | 100 |
| | Construction & Supervision | 0 | 20 | 30 | 30 | 20 | 100 |
| | Community Development & Training | 30 | 20 | 20 | 20 | 10 | 100 |
| Rural Water Supply | Level I Facility | | | | | | |
| | Detail Design | 50 | 50 | 0 | 0 | 0 | 100 |
| | Construction & Supervision | 12 | 22 | 22 | 22 | 22 | 100 |
| | Community Development & Training | 22 | 22 | 22 | 22 | 12 | 100 |
| | Level II System | | | | | | |
| | Detail Design | 100 | 0 | 0 | 0 | 0 | 100 |
| | Construction & Supervision | 50 | 50 | 0 | 0 | 0 | 100 |
| | Community Development & Training | 50 | 50 | 0 | 0 | 0 | 100 |
| Sanitation | Urban Household Toilet | 12 | 22 | 22 | 22 | 22 | 100 |
| | Rural Household Toilet | 12 | 22 | 22 | 22 | 22 | 100 |
| | Public School Toilet | 12 | 22 | 22 | 22 | 22 | 100 |
| | Public Toilet | 12 | 22 | 22 | 22 | 22 | 100 |
| | Disinfection of Level I Wells | 12 | 22 | 22 | 22 | 22 | 100 |
| | Detail Design | 100 | 0 | 0 | 0 | 0 | 100 |
| | Construction & Supervision | 12 | 22 | 22 | 22 | 22 | 100 |
| | Community Development & Training | 22 | 22 | 22 | 22 | 12 | 100 |

Urban water supply:

- Engineering services for feasibility study and detailed design will be undertaken in the first two years.
- Construction work accompanied by supervisory services will be commenced partially in 2nd year and in full operation from 3rd year to 4th year.
- Community development will take place from the first year.

Rural water supply (Level I):

- Engineering services for detailed design will be undertaken during the first two years for Level I and completed within the first year for Level II.
- Construction work accompanied by supervisory services will be partially commenced from the first year and in full operation from 2nd year for Level I, while Level II will be completed within first two years.
- Community development and training will take place from the first year for Level I, while Level II will be completed within the first two years.

Sanitation:

- Engineering services for detailed design will be completed within the first year.
- Construction work accompanied by supervisory services will be partially commenced in the first year and in full operation from 2nd year.
- Community development and training will be in full operation from the first year.

## 11.4 Medium-Term Implementation Arrangements

### 11.4.2 Alternative Countermeasures

**The Local Government Empowerment Fund (LGEF)**

The Local Government Empowerment Fund (LGEF) will be established in 1996. Purposes, concept and mechanics of LGEF are discussed below.

(1) Purpose

1) To provide a mechanism for channeling grants and/or concessional loan funds to LGUs
2) To rationalize the allocation of funds to priority national projects in support of devolved activities of LGUs over and above their mandated IRA shares
3) To effect a more transparent presentation to fund allocations to LGUs in the budget

(2) Concept

1) The LGEF is an umbrella program fund in the GAA (General Appropriate Act) for national government projects being implemented by national government agencies with components supportive of devolved activities of LGUs.

2) Projects under the LGEF are to be supported wholly or partially by grants or highly concessional loans such as those from the ADF funds from ADB, which carry zero interest and payable in 40 years. Highly concessional loan is defined as those loans with a grant element of no less than 75%.
3) Projects for inclusion in the LGEF will be basically those under the economic and health services sectors.
4) As a matter of strategy, to ensure sustainability of LGU support to the project, a "matching fund" of no less than 10% of the total project cost shall be required from the beneficiary LGU. "The matching fund" may be in cash or in-kind.

(3) Mechanics

1) Authorization of funds for the eligible projects will be made under the budgets of the implementing agencies following usual budgetary process, rules and regulations.
2) The LGEF like MDF (Municipal Development Fund) will be included as one of the items under Assistance to Local Government Units (ALGU) authorized in the GAA. It will likewise identity foreign assisted projects being implemented by national government agencies with components that are directly benefiting specific LGUs, such as the implementation of devolved activities. However, unlike the MDF, fund allocations for LGU projects under LGEF are not to be repaid and are to be treated as subsidies.
3) The LGEF will support programs/activities of the 19 priority provinces under the Social Reform Agenda (SRA) and/or those classified as 5th or 6th class LGUs.

**Fund from Tobacco Excise Tax under RA7171**

Contents of "An Act to promote the development of the farmers in the Virginia tobacco producing provinces" (RA7171) are as follows:

(1) RA7171 was implemented in 1992. Actual allotment started in 1994. Its objective is to advance the self-reliance of the tobacco farmers through the support to the Virginia tobacco-producing provinces.

(2) An amount of 15% of the tobacco excise taxes on locally manufactured Virginia type cigarettes based on actual collection by the Bureau of Internal Revenue for the second calendar year preceding the year of distribution (namely, the collection in 1992 for 1994

distribution) was allotted to 4 Virginia tobacco producing provinces (Abra, Ilocos Norte, Ilocos Sur and La Union).

(3) This allotment is treated as a special account under the general fund of LGUs of the provinces to be utilized for (a) cooperative projects that will enhance better quality of products, (b) livelihood projects particularly the development of alternative farming system, (c) agro-industrial projects and (d) infrastructure projects. (Thus, this allotment can be utilized for development of the water supply and sanitation sector although they are not major targeted projects.)

(4) The allotted amounts to provincial governments and municipalities (unit: 1,000 pesos) in 1994 are shown below.

| | Provincial Government | Municipalities (total) |
|---|---|---|
| Abra: | 12,276 | 16,367 |
| Ilocos Norte: | 16,596 | 21,647 |
| Ilocos Sur: | 47,025* | 83,600 |
| La Union: | 36,924 | 49,232 |

* Based on the Provincial Annual Report in 1994. Other figures are derived from DBM.

## Table 11.4.1 Comprehensive Investment Need Ranking of the Municipalities

| Municipality | Evaluation Factor (% of Underserved and Unserved Population or Households) | | | | Score by Sub-Sector | | | | Weighted Score by Sub-Sector | | | | | Synthetic Investment Need Ranking |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Urban Water Supply | Rural Water Supply | Urban Sanitation | Rural Sanitation | Urban Water Supply | Rural Water Supply | Urban Sanitation | Rural Sanitation | Urban Water Supply | Rural Water Supply | Urban Sanitation | Rural Sanitation | Total Weighted Score | |
| Adams | N.A. | 45 | N.A. | 14 | N.A. | 0.80 | N.A. | 0.60 | N.A. | 0.40 | N.A. | 0.30 | 0.70 | 6 |
| Bacarra | N.A. | 45 | 6 | 8 | 0.53 | 0.80 | 0.40 | 0.40 | 0.13 | 0.20 | 0.10 | 0.10 | 0.53 | 9 |
| Badoc | N.A. | 59 | 7 | 5 | 1.00 | 1.00 | 0.40 | 1.00 | 0.25 | 0.25 | 0.10 | 0.25 | 0.85 | 2 |
| Bangui | N.A. | 24 | 3 | 11 | 0.66 | 0.40 | 0.20 | 0.60 | 0.17 | 0.10 | 0.05 | 0.15 | 0.47 | 12 |
| Batac | N.A. | 26 | 4 | 17 | 0.49 | 0.40 | 0.20 | 0.60 | 0.12 | 0.10 | 0.05 | 0.15 | 0.42 | 15 |
| Burgos | N.A. | 44 | 13 | 29 | 0.66 | 0.80 | 0.60 | 0.80 | 0.17 | 0.20 | 0.15 | 0.20 | 0.72 | 5 |
| Carasi | N.A. | 8 | N.A. | 41 | N.A. | 0.20 | N.A. | 1.00 | N.A. | 0.10 | N.A. | 0.50 | 0.60 | 8 |
| Currimao | N.A. | 49 | 43 | 22 | 0.39 | 0.80 | 1.00 | 0.80 | 0.10 | 0.20 | 0.25 | 0.20 | 0.75 | 4 |
| Dingras | N.A. | 28 | 1 | 0 | 0.32 | 0.40 | 0.20 | 0.20 | 0.08 | 0.10 | 0.05 | 0.05 | 0.28 | 21 |
| Dumalneg | N.A. | 15 | N.A. | 0 | N.A. | 0.20 | N.A. | 0.20 | N.A. | 0.10 | N.A. | 0.10 | 0.20 | 23 |
| Espiritu | N.A. | 22 | 0 | 1 | 0.32 | 0.40 | 0.20 | 0.20 | 0.08 | 0.10 | 0.05 | 0.05 | 0.28 | 21 |
| Laoag City (Capital) | N.A. | 31 | 1 | 9 | N.A. | 0.60 | 0.20 | 0.40 | N.A. | 0.30 | 0.05 | 0.10 | 0.45 | 14 |
| Marcos | N.A. | 27 | 0 | 8 | 0.83 | 0.40 | 0.20 | 0.40 | 0.21 | 0.10 | 0.05 | 0.10 | 0.46 | 13 |
| Nueva Era | N.A. | 50 | 29 | 34 | 0.83 | 0.80 | 1.00 | 1.00 | 0.21 | 0.20 | 0.25 | 0.25 | 0.91 | 1 |
| Pagudpud | N.A. | 26 | 10 | 10 | 0.49 | 0.40 | 0.40 | 0.40 | 0.12 | 0.10 | 0.10 | 0.10 | 0.42 | 15 |
| Paoay | N.A. | 39 | 0 | 2 | 0.90 | 0.60 | 0.20 | 0.20 | 0.23 | 0.15 | 0.05 | 0.05 | 0.48 | 10 |
| Pasuquin | N.A. | 36 | 16 | 31 | 0.29 | 0.60 | 0.80 | 1.00 | 0.07 | 0.15 | 0.20 | 0.25 | 0.67 | 7 |
| Piddig | N.A. | 30 | 0 | 2 | 0.66 | 0.40 | 0.20 | 0.20 | 0.17 | 0.10 | 0.05 | 0.05 | 0.37 | 19 |
| Pinili | N.A. | 54 | 0 | 8 | 0.32 | 1.00 | 0.20 | 0.40 | 0.08 | 0.25 | 0.05 | 0.10 | 0.48 | 10 |
| San Nicolas | N.A. | 44 | 0 | 4 | 0.26 | 0.80 | 0.20 | 0.20 | 0.07 | 0.20 | 0.05 | 0.05 | 0.37 | 19 |
| Sarrat | N.A. | 44 | 0 | 1 | 0.46 | 0.80 | 0.20 | 0.20 | 0.12 | 0.20 | 0.05 | 0.05 | 0.42 | 17 |
| Solsona | N.A. | 44 | 4 | 4 | 0.49 | 0.80 | 0.20 | 0.20 | 0.12 | 0.20 | 0.05 | 0.05 | 0.42 | 17 |
| Vintar | N.A. | 21 | 25 | 31 | 0.66 | 0.40 | 1.00 | 1.00 | 0.17 | 0.10 | 0.25 | 0.25 | 0.77 | 3 |
| **Provincial Total** | N.A. | 35 | 4 | 10 | | | | | | | | | | |

Note:

(1) Scoring to Underserved and Unserved Percentage.

| Score | Range of Underserved and Unserved Percentage | | |
|---|---|---|---|
| 1.0 | 51 < % | 21 < % | 31 < % |
| 0.8 | 41 < % < 50 | 16 < % < 20 | 21 < % < 30 |
| 0.6 | 31 < % < 40 | 11 < % < 15 | 11 < % < 20 |
| 0.4 | 21 < % < 30 | 6 < % < 10 | 6 < % < 10 |
| 0.2 | % < 20 | % < 5 | % < 5 |

2) Assumed Weight by Sub-Sector for Synthetic Evaluation by Municipality.

| 0.25 | 0.25 | 0.25 | 0.25 | Allocated Weight |
|---|---|---|---|---|

**Table 12.4.1 Draft Formats for Annual Sector Performance Summary Report (Provincial and Municipal Levels)**

Province of _____ Form P-1

Provincial Water & Sanitation Monitoring System

Annual Sector Performance Summary Report

Period Covered : _____ to _____

I. Service Coverage

| Municipality (1) | LAST YEAR | | | | THIS YEAR | | | |
|---|---|---|---|---|---|---|---|---|
| | Population (2) | Persons with Safe Water & Sanitary Toilets (3) | Persons with Safe Water Only (4) | Persons with Sanitary Toilets Only (5) | Population (6) | Persons with Safe Water & Sanitary Toilets (7) | Persons with Safe Water Only (8) | Persons with Sanitary Toilets Only (9) |
| 1. | | | | | | | | |
| 2. | | | | | | | | |
| 3. | | | | | | | | |
| 4. | | | | | | | | |
| 5. | | | | | | | | |
| 6. | | | | | | | | |
| 7. | | | | | | | | |
| 8. | | | | | | | | |
| 9. | | | | | | | | |
| 10. | | | | | | | | |
| 11. | | | | | | | | |
| 12. | | | | | | | | |
| 13. | | | | | | | | |
| 14. | | | | | | | | |
| 15. | | | | | | | | |
| Total | | | | | | | | |
| % Served | | | | | | | | |
| Targets | | | | | | | | |

II. Sources & Uses of Capital Development Funds

| Source of Fund (1) | Budget for Water Supply & Sanitation (2) | Actual Disbursement (3) | Uses of Funds | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | Water Source Development (4) | Water Supply Transmission (5) | Water Storage/ Treatment & Distribution (6) | Household Toilets (7) | School Toilets (8) | Public Toilets (9) | Others (10) |
| A. Local Funds. | | | | | | | | | |
| Provincial Funds | | | | | | | | | |
| Municipal Funds | | | | | | | | | |
| A. | | | | | | | | | |
| B. | | | | | | | | | |
| C. | | | | | | | | | |
| D. | | | | | | | | | |
| E. | | | | | | | | | |
| F. | | | | | | | | | |
| G. | | | | | | | | | |
| H. | | | | | | | | | |
| I. | | | | | | | | | |
| J. | | | | | | | | | |
| SUB-TOTAL | | | | | | | | | |
| B. National Funds | | | | | | | | | |
| DPWH | | | | | | | | | |
| DOH | | | | | | | | | |
| LWUA | | | | | | | | | |
| SUB-TOTAL | | | | | | | | | |
| C. External Funds | | | | | | | | | |
| NGO | | | | | | | | | |
| NGO | | | | | | | | | |
| NGO | | | | | | | | | |
| SUB-TOTAL | | | | | | | | | |
| TOTAL | | | | | | | | | |

III. School Sanitation (Source, DECS)

| School (Location) (1) | No. of Students Enrolled (2) | Water Supply Adequate ? (Y/N) (3) | No. of Functioning Toilet Units (4) | Facility: Student Ratio (5) |
|---|---|---|---|---|
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

IV. Incidence of Diarrhea (Source IPHO)

| Month (1) | Last Year (2) | This Year (3) |
|---|---|---|
| January | | |
| February | | |
| March | | |
| April | | |
| May | | |
| June | | |
| July | | |
| August | | |
| September | | |
| October | | |
| November | | |
| December | | |

V. Water Resources: Report any major changes in the availability and quality of water in the province. Attach map.

VI. Unit Cost Summary : Based on projects actually implemented and paid for during the reporting period, indicate the following average unit costs

1. Shallow Well (w/o hand pump) = _____ / Meter Depth
2. Deep Well (w/o pump) = _____ / Meter Depth
3. Pipeline = _____ / meter
4. Storage Tanks =
5. Others,

Form M - 1

Municipality of _____

Provincial Water & Sanitation Monitoring System

Annual Sector Performance Summary Report

Period Covered : _____ to _____

I. Service Coverage

| | LAST YEAR | | | | THIS YEAR | | | |
|---|---|---|---|---|---|---|---|---|
| Name of Barangay (1) | Population (2) | Persons with Safe Water & Sanitary Toilets (3) | Persons with Safe Water Only (4) | Persons with Sanitary Toilets Only (5) | Population (6) | Persons with Safe Water & Sanitary Toilets (7) | Persons with Safe Water Only (8) | Persons with Sanitary Toilets Only (9) |
| 1. | | | | | | | | |
| 2. | | | | | | | | |
| 3. | | | | | | | | |
| 4. | | | | | | | | |
| 5. | | | | | | | | |
| 6. | | | | | | | | |
| 7. | | | | | | | | |
| 8. | | | | | | | | |
| 9. | | | | | | | | |
| 10. | | | | | | | | |
| 11. | | | | | | | | |
| 12. | | | | | | | | |
| 13. | | | | | | | | |
| 14. | | | | | | | | |
| 15. | | | | | | | | |
| 16. | | | | | | | | |
| 17. | | | | | | | | |
| Total | | | | | | | | |
| % Served | | | | | | | | |

II. Sources & Uses of Capital Development Funds.

| Source of Funds (1) | Budget (2) | Actual Disbursement (3) | Uses of Funds | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | Water Source Development (4) | Water Supply Transmission (5) | Water Storage/ Treatment & Distribution (6) | Household Toilets (7) | School Toilets (8) | Public Toilets (9) | Others (10) |
| Municipal Funds | | | | | | | | | |
| Barangay Funds | | | | | | | | | |
| A. | | | | | | | | | |
| B. | | | | | | | | | |
| C. | | | | | | | | | |
| D. | | | | | | | | | |
| E. | | | | | | | | | |
| F. | | | | | | | | | |
| G. | | | | | | | | | |
| H. | | | | | | | | | |
| I. | | | | | | | | | |
| J. | | | | | | | | | |
| K. | | | | | | | | | |
| L. | | | | | | | | | |
| M. | | | | | | | | | |
| N. | | | | | | | | | |
| O. | | | | | | | | | |
| P. | | | | | | | | | |
| Q. | | | | | | | | | |
| R. | | | | | | | | | |
| S. | | | | | | | | | |
| T. | | | | | | | | | |
| U. | | | | | | | | | |
| W. | | | | | | | | | |
| SUB-TOTAL | | | | | | | | | |
| NGO | | | | | | | | | |
| NGO | | | | | | | | | |
| NGO | | | | | | | | | |
| SUB-TOTAL | | | | | | | | | |
| TOTAL | | | | | | | | | |

# DATA REPORT

# 1. INTRODUCTION

## 1.3 The Provincial Plan for the Province of Ilocos Norte

### 1.3.2 Outline of the Report

**Table 1.3.1 List of the Report/Data/Information/Materials Collected (1/2)**

| No. | Title | Year | Prepared by | Related Subjects | | | | | | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | WS | HD | SE | CD | SE | O | |
| | **LAWS AND REGULATIONS** | | | | | | | | | |
| 1 | The Local Government Code of 1991 | 1991 | Congress of the Phil. | | | | x | | | |
| 2 | The Code of Sanitation of the Philippines Presidential Decree No. 856 | 1976 | DOH | | | x | | | | |
| 3 | National Handbook on Land and Other Water Resources | Jul-91 | NLUC,NEDA | | | | | x | | |
| | **STATISTICS - National Level** | | | | | | | | | |
| 1 | 1991 Family Income and Expenditures Survey of Households Bulletin Series 72 | 1991 | NSO | | | | | x | | |
| 2 | 1992 Philippine Statistical Yearbook | Oct-92 | NSCB | | | x | | x | | |
| 3 | 1992 Philippine Yearbook. | Dec-92 | NSO | | | | | x | | |
| 4 | National Health Survey | 1992 | DOH | | | x | | | | |
| | **STATISTICS - Provincial Level** | | | | | | | | | |
| 1 | 1990 Census of Population and Housing Report No. 3-64 D: Socio-Economic and Demographic | 1990 | | | | | | | | |
| | Characteristics of Ilocos Norte | | | | | | | | | |
| 2 | Socio-Economic Profile Province of Ilocos Norte | | | | | | | | | |
| | **NATIONAL DEVELOPMENT PLAN/ SECTOR PLAN** | | | | | | | | | |
| 1 | Water Supply, Sewerage and Sanitation Master Plan of the Philippines 1988-2000. | 1988 | NEDA | x | x | x | | | | |
| 2 | National Physical Framework Plan 1993-2022. | Oct-92 | Nat'l. Land Use Com. | | | | | x | | |
| 3 | Philippines : Water Supply Sector Reform Study. | Aug-93 | WORLD BANK | x | x | x | | | | Working Papers |
| 4 | Philippine Development Report 1987-1992 | 1993 | NEDA | | | | | x | | |
| 5 | Project Benefit Monitoring and Evaluation (PBME). | Oct-93 | NJS/Basic Team | | | | x | | | Final Report |
| 6 | Study for the Groundwater Development in Manila Volume 2. | Jun-92 | JICA | | | | | | | Main Report |
| 7 | First Water Supply, Sewerage and Sanitation Sector Project BWSA Package Phase I & II. | Mar-93 | DILG-PMO | | | | x | | | Training Manual 2nd Edition |
| 8 | The Special Assistance for Project Sustainability Program for Rural Water Supply Project. | Mar-92 | OECF | x | | | | | | Final Report (Main Report) |
| 9 | BWSA Primer English Version. | Sep-92 | DILG,DPWH,DOH | | | | x | | | Second Edition |
| 10 | Database Application for Provincial Water Supply, Sewerage & Sanitation Sector Plan. | Apr-93 | WORLD BANK | | | | | | x | Mission Report |
| 11 | Skills Training for Sanitary Engineers | Sep-92 | | | | x | | | | Training Manual 1st Edition |
| 12 | National Strategy and Action Plan Philippine National Urban Sewerage and Sanitation Strategy and | May-93 | World Bank Proj. | | | x | | | | |
| | Feasibility Studies Project. | | Loan 3242-DH | | | | | | | |
| 13 | PAG-ASA Climatological Data | | | | x | | | | | |
| 14 | Sanitation and Water Supply : Practical Lessons from the Decade. | 1992 | Sandy Cairncross | | | x | x | | | Discussion Paper Series |
| 15 | Community Water Supply and Sanitation | 1989 | WHO | | | x | x | | | |

## List of the Report/Data/Information/Materials Collected (2/2)

| No. | Title | Year | Prepared by | Related Subjects | | | | | | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | WS | HD | SE | CD | SE | O | |
| 17 | Guidelines for Planning Community Participation in Water Supply & Sanitation Projects. | | Anne Whyle | | | | x | | | |
| 18 | Participatory Evaluation : Tools for Managing Change in Water and Sanitation. | Feb-93 | Deepa Narayan | | | | x | | | |
| 19 | Community Participation and Hygiene Education on Water Supply and Sanitation (CPHE). | Oct-89 | Technical Coop. | | | | x | | | |
| 21 | Geological Maps of the Phils. | | BMGS | | x | | | | | |
| 23 | Philippine Atmospheric, Geo-Physical and Astronomical Services Admin. Data. | | PAG-ASA | | x | | | | | |
| 24 | Philippine Water Resources Summary Data. Vol-I Stream Flow and Lake or River Stage. | | Bureau of Research | | x | | | | | |
| 25 | Hydrogeology of Central Luzon | Aug-70 | BM.Sandoval & Mamaril | | x | | | | | |
| | **PROVINCIAL SECTOR PLAN/DEVELOPMENT PROGRAM** | | | | | | | | | |
| 1 | Provincial Profile | | | | | | | x | | |
| 2 | Provincial Annual Accomplishment Report | 1994 | | | | | | x | | |
| 3 | Municipal Annual Accomplishment Report - Municipality of Bangui | 1994 | | | | | | x | | |
| 4 | Municipal Annual Accomplishment Report - Municipality of Paoay | 1994 | | | | | | x | | |
| 5 | Rang-ay Ti Barangay List of Projects - Ilocos Norte | 1995 | | | | | | x | | |
| 6 | Socio-Economic Profile - Ilocos Norte | 1994 | | x | | | | x | | |
| 7 | Feasibility/Engineering Studies for Ilocos Norte, Badoc and Sarrat Water Districts | | | x | x | | | | | |
| 8 | Water Supply Feasibility Study Report - Ilocos Norte Water District | | Kamsax - Krugger | x | x | | | | | |
| 9 | Land Resources Evaluation Project Part I - Physical Environment | | Bureau of Soils | | x | | | | | |
| 10 | Local Government Report - Laoag City | 1994 | CPDO | | | | | x | | |
| 11 | Annual Investment Plan - Laoag City | 1994 | CPDO | | | | | x | | |
| 12 | Administrative Map (1:150,000) for the Province of Ilocos Norte | | NAMRIA | | x | | | | | |
| 13 | Topographic Map (1:50,000) for the Province of Ilocos Norte | | NAMRIA | | x | | | | | |
| 14 | Rapid Assessment of Water Supply Sources for the Province of Ilocos Norte | | NWRB | | x | | | | | |
| 15 | Groundwater Resources Investigation for the Province of Ilocos Norte | | NWRB | | x | | | | | |
| 16 | Geology and Mineral Resources of the Philippines | | BMGS | | x | | | | | |
| 17 | Geological Map of the Philippines (1:1,000,000) | | BMGS | | x | | | | | |
| 18 | Reconnaisance Hydrogeological Survey of the Province of Ilocos Norte | | BMGS | | x | | | | | |
| 19 | Philippine Water Resources Summary Data - Ilocos Norte | | DPWH/BRS | | x | | | | | |
| | **OTHER REFERENCES** | | | | | | | | | |
| 1 | Microsoft Windows Version 3.1 | 1992 | Microsoft Corporation | | | | | | x | User's Manual |
| 2 | Microsoft Excel Version 5.0 | 1994 | Microsoft Corporation | | | | | | x | User's Manual |
| 3 | Microsoft Word Version 6.0 | 1994 | Microsoft Corporation | | | | | | x | User's Manual |

Related Subject : WS Water Supply, HD Hydrogeology, SE Sanitation and Environment, CD Community Development, SE Socio-Economy, O Others

Table 1.4.1 List of Persons and Institutions Who Participated in the Preparation of PW4SP

| Name | Position | Office |
|---|---|---|
| *Provincial Sector Planning Team:* | | |
| 1. Mr. Francisco Pilar | Provincial Planning & Dev't. Coordinator | Provincial Planning & Dev't. Office |
| 2. Mr. Pedro Bueno | Provincial Local Go'vt. Operation Officer | DILG |
| 3. Mr. Peter Agcaoili | Training Specialist | Provincial Planning & Dev't. Office |
| 4. Ms. Eva Ibarra | Computer Programmer/Encoder | -do - |
| 5. Ms. Veronica Fabian | Sanitary Engineer | Provincial Health Office |
| 6. Mr. Winston Guerero | Water Resource Engineer | INWAD |
| 7. Mr. Bonifacio Pailma | Water Supply Engineer | Provincial Engineer's Office |
| 8. Mr. Charito Julian | Provincial Engineer | - do - |
| 9. Ms. Leslie Leaño | Training Specialist | DILG |
| *Water Supply and Sanitation - Project Management Office:* | | |
| 1. Mr. Orville M. Roque | Program Manager | WSS-PMO, DILG |
| 2. Ms. Ellen I. Pascua | Asst. Program Manager | - do - |
| 3. Mr. Rogelio B. Ocampo | Chief, Planning Division | - do - |
| 4. Mr. Mario V. De Dios | Development Management Officer V | - do - |
| 5. Ms. Fe Crisilla M. Banluta | PW4SP Project Officer/Coordinator | - do - |

Table 2.6.1 Guideline for Preparation of PW4SP

COMPOSITION OF FIGURES AND TABLES BY CHAPTER/SECTION

| Table of Contents | Contents | Tables & Figures | | | |
|---|---|---|---|---|---|
| | | Main Report | Supporting Report | Data Report | |
| 1. INTRODUCTION | | | | | |
| 1.1 Sector Development in the Philippines | Nationwide sector development | | | | |
| 1.2 Provincial Sector Planning | Outline of provincial sector planning | | | | |
| 1.2.1 Objectives of Sector Planning | | | | | |
| 1.2.2 Scope of Sector Planning | | | | | |
| 1.2.3 Financing of Sector Plan | | | | | |
| 1.3 The Provincial Plan for the Province | | F1.3.1 Flow Diagram of Sector Planning | F1.3.1 Organization Chart for Implementation of PW4SP | | |
| 1.3.1 Preparation of the Plan | | | | *1.3.1 List of Report/Data/ Information/Materials Collected | |
| 1.3.2 Outline of the Report | | | | | |
| 1.4 Acknowledgments | | | | | |
| 2. PLANNING APPROACH FOR FUTURE SECTOR DEVELOPMENT | | | | | |
| 2.1 General | | | | | |
| 2.2 Planning Framework | - Sector Arrangements with Reference to National Master Plan and Medium-Term Development Plan | T2.2.1 National Sector Coverage Targets | | | |

* Questionnaire form

Table - T, Figure - F

# COMPOSITION OF FIGURES AND TABLES BY CHAPTER/SECTION

| Table of Contents | Contents | Tables & Figures | | | | |
|---|---|---|---|---|---|---|
| | | Main Report | | Supporting Report | | Data Report |
| 2.3 Sector Objectives | - Water Supply Coverage<br>- Sanitation and Sewerage Coverage | | | | | |
| 2.4 Current Sector Policies and Strategies | - Self-Reliance<br>- Integrated Approach<br>- Cost Recovery<br>- Sustainability<br>- Private Sector Participation<br>- Water Resources Management | | | | | |
| 2.5 Major Legislation and Regulations Affecting the Sector | - Local Government Code<br>- Water Code of the Philippines<br>- Philippine Environmental Code<br>- National Drinking Water Standards<br>- Plumbing Code of the Philippines<br>- Code on Sanitation<br>- National Building Code | | | | | |
| 2.6 Planning Principles and Data Management | - Constraints and required arrangements to undertake planning work<br>- Data storage processing and retrieval | F2.6.1 | Institutional Hierarchical System of the Philippines | T2.6.1 | Data File Linkages | |
| 2.6.1 Planning Principles | | F2.6.2 | Structure of Questionnaire | T2.6.2 | Key Parameter | |
| 2.6.2 Data Management | | | | T2.6.3 | Composition of Well Sources and Specific Capacity | |
| | | | | T2.6.4 | Annual Distribution of Investment Cost Required by Sub-sector for Medium-term Development Plan | |
| | | | | T2.6.5 | Level I Safe & Unsafe Percentage | |
| | | | | T2.6.7 | Scoring Factor for Municipal Investment Ranking for Urban Water Supply | |
| | | | | T2.6.8 | Scoring Factor for Municipal Comprehensive Investment Ranking | |

* Questionnaire form  Table - T,  Figure - F

# COMPOSITION OF FIGURES AND TABLES BY CHAPTER/SECTION

| Table of Contents | | Contents | Tables & Figures: Main Report | | Tables & Figures: Supporting Report | | Tables & Figures: Data Report | |
|---|---|---|---|---|---|---|---|---|
| 3. | PROVINCIAL PROFILE | | | | | | | |
| 3.1 | General | - Location of Province<br>- Administrative composition | F3.1.1<br>T3.1.1 | Location Map<br>Outline of City/ Municipalities | | | | |
| 3.2 | Natural Conditions and Geographical Features | | | | | | T3.2.1 | Flow Data of Major Rivers |
| 3.2.1 | Meteorology | - Classification of climate by type and its characteristics<br>- Average rainfall, temperature and wind direction | | | | | | |
| 3.2.2 | Land Use | - Current land use | T3.2.1 | Current Land Use | | | | |
| 3.2.3 | Topography and Drainage | - Topographical characteristics of the province: mountains, major rivers and its flow rates, and water quality of typical rivers | F3.2.1<br>T3.2.2 | Major River Networks<br>Drainage Areas and Flow Rates of Major Rivers | | | | |
| 3.3 | Socio-economic Conditions | | | | | | | |
| 3.3.1 | Economic Activities and Household Income | (1) Brief description on major economic activities<br>(2) Discussion on (a) household income level and (b) occupation | F3.3.1<br>F3.3.2 | Distribution of Households by Income Class<br>Population Distribution by Occupation | T3.3.1<br>T3.3.2 | Distribution of Households by Income Class<br>Gainful Workers by Occupation Group and Major Industry Group | T3.3.1 | Number of Elementary School, High School and Other Served Facilities |
| 3.2.3 | Basic Infrastructure | (1) Description on current basic infrastructure in the province (roads, electricity, telecom, postal services, transportation, banking facilities, tourism facilities, schools, etc.) | T3.3.1<br>T3.3.2 | Provincial Outline on Public Services<br>Public Facilities and Services by Municipality | | | | |

* Questionnaire form  Table - T,  Figure - F

# COMPOSITION OF FIGURES AND TABLES BY CHAPTER/SECTION

| Table of Contents | | Contents | Tables & Figures: Main Report | | Supporting Report | | Data Report | |
|---|---|---|---|---|---|---|---|---|
| | | (2) Discussion on public facilities and services (schools, public markets, banks and hospitals) by municipality | | | | | | |
| 3.3.3 | Education | Description on (a) education levels and (b) literacy level | F3.3.3 | Population Distribution by Highest Attainment of Education | T3.3.3 | Household Population by Highest Educational Attainment | | |
| 3.4 | Population | | | | | | | |
| 3.4.1 | Previous Population Development | (1) Population data of NSO for the census periods from 1960 to 1990 together with projected (1995) population | T3.4.1 | Previous Population Development by Municipality | | | | |
| | | (2) Special issues, if any, which affected the present population of the province, i.e., special development and those of Mt. Pinatubo eruption in 1991 | F3.4.1 | Previous Population Development of the Province | | | | |
| 3.4.2 | Classification of Urban and Rural Areas | (1) Urban and rural areas classified at barangay level based on the definition of NSO | F3.4.2 | Present Population Distribution | F3.4.1 | Distribution of Urban and Rural Areas | | |
| | | (2) Re-classification of urban and rural areas based on actual condition by PSPT | T3.4.2 | Outline of Urban and Rural Areas in the Province | | | | |
| 3.4.3 | Present Population Distribution | (1) No. of barangays, households & population, household size by urban and rural area | T3.4.3 | Household Numbers and Household Sizes | | | | |
| 3.5 | Health Status | | | | | | | |
| 3.5.1 | Morbidity, Mortality and Infant Mortality | - Ten leading causes of morbidity, mortality and infant mortality and comparison with national level<br>- Identification and rank of diseases related to water among the 10 leading causes | T3.5.1 | Number and Rates of Ten Leading Causes of Morbidity, Mortality and Infant Mortality | | | T3.5.1 | Morbidity, Mortality and Infant Mortality by Municipality (Annual Incidence per 100,000 Persons) |

* Questionnaire form  Table - T,  Figure - F

# COMPOSITION OF FIGURES AND TABLES BY CHAPTER/SECTION

| Table of Contents | | Contents | Tables & Figures | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | Main Report | | Supporting Report | | Data Report | |
| 3.5.2 | Water Related Diseases | - Classification of water-borne, based, washed, vector related diseases<br>- Enumeration of water related diseases and their incidence<br>- Discussion on the health implications of sanitation | T3.5.2 | Reported Cases and Deaths of Notifiable Water Related Diseases, (Year) | | | | |
| 3.5.3 | Health Facilities and Practitioners | - No. of medical facilities and practitioners, its ratio to population and comparison with national level | | | T3.5.1 | Number and Ratio to Population of Health Facilities and Medical Practitioners | T3.5.2 | Number of Health Facilities and Practitioners by Municipality |
| 3.6 | Environmental Conditions | | | | | | | |
| 3.6.1 | General | - Scope of the subject limited to the sector | | | | | | |
| 3.6.2 | Water Pollution | - Evaluation of existing drainage system, its function as a disposal point of domestic wastewater<br>- Evaluation of industrial wastewater discharge<br>- Existing classification of rivers in terms of water quality and extent of water pollution of water bodies | | | T3.6.1 | DENR Water Quality Criteria/Water Usage and Classification for Fresh Water | T3.6.1 | Municipal Solid Waste Collection and Disposal by Municipality |
| 3.6.3 | Solid Waste Disposal | - Evaluation of solid waste collection and disposal | T3.6.1 | Municipal Solid Waste Collection and Disposal, and Service Coverage | | | | |
| 4. | EXISTING FACILITIES AND SERVICE COVERAGE | | | | | | | |
| 4.1 | Water Supply | | | | T4.1.1 | Details on Existing Level III Systems | | |
| 4.1.1 | General | (1) Types and composition of existing water supply facilities by service level | | | | | | |

* Questionnaire form

Table - T, Figure - F

# COMPOSITION OF FIGURES AND TABLES BY CHAPTER/SECTION

| Table of Contents | Contents | Tables & Figures | | |
|---|---|---|---|---|
| | | Main Report | Supporting Report | Data Report |
| | (2) Survey results complied from questionnaire by service level shall be arranged to urban and rural areas at municipal level | | T4.1.2 Existing Level II Systems | |
| | (3) Service coverage shall be counted as percentage of population served by the existing facilities. Further classification by safe and unsafe sources together with adequacy of service are incorporated in the service coverage | | | |
| 4.1.2 Types of Facilities and Definition of Service Level Standard | (1) Adequacy of service defined by DOH | T4.1.1 Composition of Water System/Facility by Service Level | | |
| 4.1.3 Level III Systems | (1) Description of existing Level III system:<br>- No. of WD & Level III (being operated by LGUs)<br>- Type of major water sources<br>- Range of water consumption | T4.1.2 Information on Existing Level III Systems<br>T4.1.3 Information on Water Districts | | T4.1.3 List of Subdivisions by Municipality |
| | (2) Operating conditions of WDs:<br>- Range of service (No. of connection)<br>- Range of charge collection efficiency | | | |
| 4.1.4 Level II Systems | (1) Description of existing Level II system<br>- No. of operating Level II systems<br>- Type of major water source<br>- Range of household coverage<br>(2) Operating conditions:<br>- Water supply interruption<br>- Water quality<br>- Collection efficiency | T4.1.4 Information on Existing Level II Systems | | |

* Questionnaire form

Table - T, Figure - F

# COMPOSITION OF FIGURES AND TABLES BY CHAPTER/SECTION

| Table of Contents | Contents | Tables & Figures | | | | |
|---|---|---|---|---|---|---|
| | | Main Report | | Supporting Report | | Data Report |
| 4.1.5 Level I Facilities | (1) Description of existing Level I facilities:<br>- No. of operational and non-operational facilities<br>- Safe and unsafe sources<br>- Ownership by public and private | T4.1.5 | Information on Existing Level I Facilities | T4.1.3 | Percentage of Unsafe Water Sources by IPHO | |
| | | T4.1.6 | Operating Status of Existing Wells in the Province | T4.1.4 | No. of Level I Facilities by Safe and Unsafe Classification | |
| | (2) Problem areas:<br>- Needs for rehabilitation and replacement of existing facilities | | | T4.1.5 | Estimation of Unserved Population by Municipality | |
| 4.1.6 Water Supply Service Coverage | (1) Criteria of adequate service based on the national standard | T4.1.7 | Water Supply Service Coverage by Municipality | T4.1.6 | Estimation of Population Covered by Safe and Unsafe Source by Municipality | |
| | (2) Service coverage (percent of population served by safe sources) in urban and rural areas by municipality | F4.1.1 | Water Supply Coverage of the Province | | | |
| | | F4.1.2 | Existing Water Supply Service Covrage Map | | | |
| | (3) On-going projects by municipality | | | | | |
| 4.2 Sanitation and Sewerage | | | | | | |
| 4.2.1 General | - Brief discussion of government policies/ guidelines on sanitation and sewerage as spelled out in the Code of Sanitation and NUSSMP<br>- Coverage of the PW4SP (HH, school toilets and public toilets) | | | | | |
| 4.2.2 Types of Facilities and Definition of Service Level Standard | - DOH/DECS classification by service level<br>- Types of toilet facilities considered as sanitary and unsanitary in this sector plan<br>- Definition of served and underserved/ unserved | | | F4.2.1 | Standard Structure of Private Toilet Facility | |
| | | | | F4.2.2 | Standard Structure of School Toilet Facility | |

* Questionnaire form  Table - T,  Figure - F

# COMPOSITION OF FIGURES AND TABLES BY CHAPTER/SECTION

| Table of Contents | Contents | Tables & Figures | | | | | |
|---|---|---|---|---|---|---|---|
| | | Main Report | | Supporting Report | | Data Report | |
| 4.2.3 Sanitation Facilities and Service Coverage | | | | | | | |
| (1) Household Toilets | - No. of Households with sanitary toilet facilities and underserved, by municipality | T4.2.1 | Sanitation Facilities and Service Coverage of Household Toilets, Urban and Rural, 1994 | T4.2.1 | Sanitation Facilities and Service Coverage of Household Toilets, by Type, by Municipality, Urban and Rural, 1994 | | |
| | - Service coverage (percent of household with sanitary toilet facilities and underserved/unserved in urban and rural area, by municipality | F4.2.1 | Provincial Service Coverage of Household Toilet Facilities, 1994 | | | | |
| | | F4.2.2 | Existing Household Toilets Service Coverage Map | | | | |
| (2) School and Public Toilets | - No. of School and public toilets by municipality | T4.2.2 | School Toilet Facilities and Service Coverage in 1994 | | | | |
| | - Service coverage (percent of students adequately served by sanitary facilities and percent of public utilities with sanitary facilities) | T4.2.3 | Public Toilet Facilities and Service Coverage in 1994 | | | | |
| (3) On-going Projects | - On-going projects by municipality (service coverage) | | | | | | |
| (4) Problem Areas | - Common problems encountered with regards to physical and social standpoints | | | | | | |
| 4.2.4 Sewerage Facilities | - Presence/absence of sewerage facilities. If none, description of existing condition on sewage disposal<br>- If present, description of sewerage system | | | | | | |

* Questionnaire form  Table - T,  Figure - F

# COMPOSITION OF FIGURES AND TABLES BY CHAPTER/SECTION

| Table of Contents | Contents | Tables & Figures | | |
|---|---|---|---|---|
| | | Main Report | Supporting Report | Data Report |
| 5. EXISTING SECTOR ARRANGEMENTS AND INSTITUTIONAL CAPACITY | | | | |
| 5.1 General | | | | |
| 5.2 Sector Reforms | - NEDA Board Resolution No. 4<br>- NEDA Board Resolution No. 5 | | | |
| 5.3 Sector Institutions | - Existing Institutional Arrangements<br>- Sector Financing | F5.3.1 Functional Relationships | | |
| 5.4 Sector Agencies at the National Level | (To be discussed for each of the major agencies) | | | |
| (1) DILG | - Existing mechanisms and processes to deliver or support services to provinces, municipalities and barangays (financial, technical and institutional)<br>- Mechanisms for coordination and collaboration with LGUs<br>- Existing capacity of national agency to implement sector projects (technical, financial, institutional)<br>- Actual programs being implemented by national sector agencies focusing on transfer of appropriate technologies and approaches<br>- Actual experiences and practices of national agency in project implementation<br>- Problem areas | | | |
| (2) LWUA | | | | |
| (3) DPWH | | | | |
| (4) DOH | | | | |
| (5) Other Agencies (NEDA, DOF, NWRB, DBM, DENR, DECS, MWSS) | | | | |

* Questionnaire form

Table - T, Figure - F

# COMPOSITION OF FIGURES AND TABLES BY CHAPTER/SECTION

| Table of Contents | Contents | Tables & Figures | | |
|---|---|---|---|---|
| | | Main Report | Supporting Report | Data Report |
| 5.5 Sector Agencies at the Local Level<br><br>(1) Provincial Level<br>- PPDO<br>- PEO<br>- PHO<br><br>(2) Municipal and Barangay Levels<br>- MDO<br>- MEO<br>- Barangay Councils<br>- RHU/BHS<br><br>(3) Field Offices of Central Sector Agencies<br>- DPWH DEO<br>- DILG P/MLGOO<br>- NEDA RO and RDC<br><br>(4) Water Districts<br>(5) RWSAs<br>(6) BWSAs<br>(7) Others (including CBOs) | (To be discussed for each of the agencies)<br><br>- General description of mandate and responsibility<br>- Present capacity of local agency to undertake: the LGU level within the sector<br>* Project identification and priority-setting<br>* Establishment of community-based organization<br>* Project preparation and planning<br>* Project implementation<br>* Operation and maintenance<br>* Monitoring and evaluation<br>- Financial resources (Refer to Chap 6)<br>- Actual experiences and practices of local agencies on project implementation<br>- Mechanism for coordination and collaboration level among local offices to implement, coordinate and monitoring of program activities<br>- Extent of private sector participation<br>- Linkage with national government agencies | | F5.5.1 Organization Chart of the PPDO<br><br>F5.5.2 Organization Chart of PEO<br><br>F5.5.3 Organization Chart of PHO | |
| 5.6 External Support Agencies Active in the Sector<br>(1) Multilateral Agencies | - The World Bank (IBRD)<br>- The Asian Development Bank (ADB)<br>- The United Nations Development Program and the United Nations Children's Fund (UNICEF) | | | |



* Questionnaire form

Table - T, Figure - F

# COMPOSITION OF FIGURES AND TABLES BY CHAPTER/SECTION

| Table of Contents | Contents | Tables & Figures | | |
|---|---|---|---|---|
| | | Main Report | Supporting Report | Data Report |
| (2) Bilateral Agencies | - The Japan International Cooperation Agency (JICA)<br>- The Overseas Economic Cooperation Fund (OECF)<br>- The Australian International Development Assistance Bureau (AIDAB)<br>- The Danish International Agency (DANIDA)<br>- KfW<br>- The Royal Government of the Netherlands | | | |
| (3) NGOs and Private Sector | | | | |
| 5.7 Current Community Development and Training Approaches | | | | |
| 5.7.1 Community Development | - Existing CD approaches to promote participation of local beneficiaries<br>- Experiences/practices on participation of project beneficiaries<br>- Financial contributions from beneficiaries<br>- Strategies for targeting involvement of women<br>- Organization and training of beneficiaries | | | |
| 5.7.2 Human Resources Development & Training | - Staffing situation (quality and quantity)<br>- Existing training programs of sector agencies and mechanisms for implementation (technical and management training)<br>- Access to technical information<br>- Available training and information materials<br>* Types and contents<br>* Mode of dissemination | | | |

* Questionnaire form

Table - T, Figure - F

## COMPOSITION OF FIGURES AND TABLES BY CHAPTER/SECTION

| Table of Contents | | Contents | Tables & Figures | | |
|---|---|---|---|---|---|
| | | | Main Report | Supporting Report | Data Report |
| | | - Actual experiences and practices of sector agencies | | | |
| 5.7.3 | Sanitation/Hygiene Education | - Existing health/hygiene education programs of sector agencies and mechanisms for implementation<br>* DOH (Implementing program on Public Toilets)<br>* DECS (Implementing program on School Toilets)<br>- Mechanisms and resources for mass dissemination of information and other social marketing programs<br>- Hygiene educational materials available<br>* Types and content<br>* Mode of dissemination | | | |
| | | - Actual experiences and practices of sector agencies (national-and local-level) | | | |
| 5.8 | Existing Sector Monitoring | | | | |
| | (1) National Level<br>(2) Local Level | | | | |
| 6. | PAST FINANCIAL PERFORMANCE IN WATER SUPPLY AND SANITATION | | | | |
| 6.1 | General | - Basic idea and brief contents of this chapter | | | |
| 6.2 | Past Public Investment | | | | |

* Questionnaire form

# COMPOSITION OF FIGURES AND TABLES BY CHAPTER/SECTION

| Table of Contents | | Contents | Tables & Figures | | | | |
|---|---|---|---|---|---|---|---|
| | | | Main Report | | Supporting Report | | Data Report |
| 6.2.1 | Past Public Investment by the Central Government Agencies and LGUs | (1) Study on the previous public investment to the province by concerned agencies | T6.2.1 | Previous Sector Investment to the Province by Concerned Agency | T6.2.1 | Past Internal Revenue Allotment to Municipalities from Central Government | |
| 6.2.2 | Sources of Local Fund | (2) Role of past IRA in the provincial finance (profile of sector investment to allotted IRA in the province) | T6.2.2 | Past Internal Revenue Allotment to the Province from Central Government | | | |
| 6.3 | Cost Recovery | - Study on cost recovery in water supply by service level and sanitation (WD, RWSA and BWSA) | | | | | |
| 6.4 | Affordability | - Affordability of water rates by service level and sanitation costs by users in comparison with income level | T6.4.1 | Affordability in Water and Sanitation Services | | | |
| 6.5 | Past Financial Performance of WDs and RWSAs/BWSAs | - Study on past financial performance of WDs RWSAs/BWSAs | T6.5.1 | Financial Indicators of Water Districts | | | |
| | | | T6.5.2 | Loan Status of Water Districts | | | |
| 7. | WATER SOURCE DEVELOPMENT | | | | | | |
| 7.1 | General | | | | | | |
| | (1) Approach and Outputs | - Available water sources and their application to suit the locality<br>- Study approach with justification focusing on groundwater<br>- Water Availability Map & standard well specification | | | | | |

* Questionnaire form

Table - T, Figure - F

# COMPOSITION OF FIGURES AND TABLES BY CHAPTER/SECTION

| Table of Contents | Contents | Tables & Figures: Main Report | Tables & Figures: Supporting Report | Tables & Figures: Data Report |
|---|---|---|---|---|
| (2) Basic Data/Report with Conditions | - Major reports and hydrogeological maps used as basis of the study (with conditions and limitations)<br>- Effective data to supplement the base materials | | | |
| (3) Utilization and Up-dating | - Manner of out-put in PW4SP<br>- Updating methods clarifying what factors can be modified and updated | | | |
| (4) Existing Water Sources in the Province | - Description of existing water sources in the province | T7.1.1 Existing Groundwater Sources in the Province | | T7.1.1 Water Source Information |
| 7.2 Geology | - Classification of geologic rock units (3 types: Recent, Pliocene to Pleistocene, Pleistocene and Old rock units)<br>- Distribution of each rock units and their proportion by municipality<br>- Hydrogeolocial characteristics of each units | F7.2.1 Geological Map | | |
| 7.3 Groundwater Sources | | | | T7.3.1 Well Inventory by Municipality |
| 7.3.1 Classification of Ground-water Sources | - Definition and classification of groundwater sources<br>- shallow well area (with high yield area)<br>- deep well area (with high yield area)<br>- difficult area | F7.3.1 Groundwater Availability Map | | |
| 7.3.2 Groundwater Availability in the Province | | | F7.3.1 Work Flow of Groundwater Availability Map | |
| (1) Shallow Well Area | - Shallow well distribution | | | |

* Questionnaire form

Table - T, Figure - F

## COMPOSITION OF FIGURES AND TABLES BY CHAPTER/SECTION

| Table of Contents | Contents | Tables & Figures | | | | |
|---|---|---|---|---|---|---|
| | | Main Report | Supporting Report | | Data Report | |
| | - Technical information of shallow well (Depth, SWL, SPC-CP) | | F7.3.2 | Groundwater Potential Area in the Province | | |
| (2) Deep Well Area | - Deep well distribution<br>- Technical information of deep well (Depth, SWL, SPC-CP) | | F7.3.3 | Potential Areas of High Yielding and With Salt Intrusion Problem | | |
| (3) Difficult Area | - Distribution and proportion of difficult areas<br>- Geological & Topographical characteristics of the area | | F7.3.4 | Area Category in Groundwater Utilization | | |
| (4) Water Quality of Groundwater | - Possible area of salt water intrusion<br>- Iron & Manganese problem area | | | | | |
| 7.4 Spring Sources | - Distribution of spring sources<br>- Technical information | | T7.4.1 | Existing Spring Sources by Municipality | | |
| 7.5 Surface Water Sources | - Major rivers in the province<br>- Typical feature of the river both in quality and flow | | F7.5.1 | Study River Basin and Water Sampling Points | | |
| | | | T7.5.1 | River Information and Related Data | T7.5.1 | Water Quality Examination Results |
| | | | T7.5.2 | Water Quality Analysis Results | | |
| 7.6 Future Development Potential of Water Sources | - Potential water sources in each municipality (especially for rural area) with standard specifications by well type (shallow well, deep well, and spring) | | T7.6.1 | Existing Well Sources | F7.6.1 | Individual Well Location and Specifications Map |
| | | | T7.6.2 | Standard Specifications of Wells by Municipality | | |

* Questionnaire form  Table - T,  Figure - F

# COMPOSITION OF FIGURES AND TABLES BY CHAPTER/SECTION

| Table of Contents | Contents | Tables & Figures: Main Report | Supporting Report | Data Report |
|---|---|---|---|---|
| 8. FUTURE REQUIREMENTS IN WATER SUPPLY AND SANITATION IMPROVEMENT | | | | |
| 8.1 General | (1) Physical targets<br>- Provincial sector targets in context of the National Sector Master Plan and the National Medium-Term Development Plan<br>- Population to be served by target year based on the NSO population projection and broken down to urban and rural areas at municipal level by sub-sector<br>- Public school students to be served by target year based on projected school enrollment at municipal level<br>- Projected number of public utilities by target year at municipal level<br>(2) Physical requirements<br>- Required facilities classified by urban and rural areas by sub-sector with implementation criteria<br>- Equipment for construction, rehabilitation and O&M be identified<br>(3) Identification of priority projects<br>- Criteria for identifying priority projects<br>- Priority projects by sub-sector | | | |

* Questionnaire form  Table - T,  Figure - F

# COMPOSITION OF FIGURES AND TABLES BY CHAPTER/SECTION

| Table of Contents | Contents | Tables & Figures | | | | |
|---|---|---|---|---|---|---|
| | | Main Report | | Supporting Report | | Data Report |
| 8.2 Targets of Provincial Sector Plan | (1) Percentages of beneficiaries or utilities to be served as target indicator | T8.2.1 | Provincial Sector Targets | T8.2.1 | Estimation of Base Year Service Coverage of Water Supply | |
| | (2) Setting up of provincial sector targets by sub-sector<br>- Water supply<br>- Sanitation<br>- Sewerage<br>- Solid waste | T8.2.2 | Base Year Service Coverage of Water Supply | T8.2.2 | Population Coverage in Phase I Provided by Served Population in the Base Year (Water Supply) | |
| | | T8.2.3 | Base Year Service Coverage of Household Toilets | T8.2.3 | Number of Households Served by Sanitary Toilets in the Base Year (1995) | |
| | | T8.2.4 | Base Year Service Coverage of Public School Toilets and Public Toilets | T8.2.4 | Number of Public School Students Served by School Toilets in the Base Year (1995) | |
| | | T8.2.5 | Base Year Service Coverage of Municipal Solid Waste System in 1995 | T8.2.5 | Number of Public Utilities with Sanitary Toilets in the Base Year (1995) | |
| | | | | T8.2.6 | Household Coverage in Phase I Provided by Existing Facilities in the Base Year (Household Toilets) | |
| | | | | T8.2.7 | Public School Students and Public Utilities Coverage in Phase I Provided by Existing Facilities in the Base Year | |

* Questionnaire form

Table - T, Figure - F

# COMPOSITION OF FIGURES AND TABLES BY CHAPTER/SECTION

| Table of Contents | | Contents | Tables & Figures | | | | |
|---|---|---|---|---|---|---|---|
| | | | Main Report | | Supporting Report | | Data Report |
| 8.3 | Projection of Frame Values | | | | | | |
| 8.3.1 | Population Projection | (1) Methodology for population projection by urban and rural areas by municipality<br>- Base figures and conditions: 1990 population census and future population by urban and rural areas by municipality by target year as projected by NSO<br>- Review/verify past population development characteristics by urban and rural areas at regional and provincial level<br>- Review/compare past population in urban and rural areas at provincial level<br>- Identify areas/municipalities where adjustment of projected population is necessary<br>- Identify areas/municipalities to be excluded from PW4SP<br>- Establish future population of urban and rural areas by municipality by target year for | T8.3.1 | Future Population by Urban and Rural Area by Municipality | T8.3.1 | Population Distribution in Urban and Rural Areas | |
| | | | | | T8.3.2 | Past Population Development | |
| | | | | | T8.3.3 | Population Projection for Target Years: Region and Province | |
| | | | | | T8.3.4 | Provincial Population for Target Years | |
| | | | | | T8.3.5 | Projected Number of Households by Urban and Rural Area by Municipality by Target Year | |
| 8.3.2 | School Enrollment Projection | (1) Methodology for school enrollment projection by municipality<br>- Determine school age population<br>- Determine participation rate of total school enrollment and participation rate of public school enrollment<br>- Establish future participation rate of total school enrollment and participation rate of public school enrollment | T8.3.2 | Projected Public School Enrollment and Number of Public Utilities by Municipality | T8.3.6 | Projected School Enrollment by Municipality by Target Year | |
| 8.3.3 | Projection of the Number of Public Utilities | - Conditions used for projection of the number of public utilities toilets | | | T8.3.7 | Projected Number of Public Utilities by Municipality by Target Year | |

* Questionnaire form  Table - T,  Figure - F

# COMPOSITION OF FIGURES AND TABLES BY CHAPTER/SECTION

| Table of Contents | Contents | Tables & Figures | | | | | |
|---|---|---|---|---|---|---|---|
| | | Main Report | | Supporting Report | | Data Report | |
| 8.3.4 Planning Area and Population to be Served by the Sewerage System | - Conditions used to define planning area and population to be served | | | | | | |
| 8.3.5 Number of Households to be Served by Municipal Solid Waste Collection System | - Condition used to determine population to be served | | | | | | |
| 8.4 Types of Facilities and Implementation Criteria | | | | | | | |
| 8.4.1 Water Supply | - Classification of service level by urban and rural area<br>- Optimum number of persons to be served by type andn level of service<br>- Limited utilization/application of Levels I & II systems<br>- Rehabilitation/replacement of Level I facilities | T8.4.1<br>T8.4.2 | Groundwater Productivity<br>Standard Specifications of Level I Wells | F8.4.1 | Standard Structure of Wells (Open-hole Drilling and Gravel Pack Method) | | |
| 8.4.2 Sanitation | (1) HH toilets: One sanitary toilet per household is considered. Type of facility is dependent on the existing or planned water supply level of community<br><br>(2) School and public utilities toilets<br>- Future assumption on the number of public schools/utilities toilets<br>- Standard DECS coverage based on a 1:50 facility-student ratio will be followed and the standard designs of RESP will be adopted.<br>- Standard FW4SP designs (with modification) for public toilets will be adopted | | | | | | |

* Questionnaire form

Table - T, Figure - F

# COMPOSITION OF FIGURES AND TABLES BY CHAPTER/SECTION

| Table of Contents | Contents | Tables & Figures: Main Report | Tables & Figures: Supporting Report | Tables & Figures: Data Report |
|---|---|---|---|---|
| 8.4.3 Urban Sewerage | - Staged implementation of the sewerage program for limited urban area. | | F8.4.2 Staged Improvement in Sewage Collection Method | |
| 8.4.4 Solid Waste | - Requirement of garbage collection trucks is considered. | | | |
| 8.5 Service Coverage by Target Year | | | | |
| 8.5.1 Water Supply | (1) Assumptions/conditions adopted<br>- Criteria on number of persons served by type and level of service through the future<br>- Limited utilization/application of Levels I & II systems | T8.5.1 Population to be served by Target Year (Water Supply)<br>F8.5.1 Map Showing Future Water Supply Service Coverage by 2000 | T8.5.1 Population to be Served by Level II System in Phase I<br>T8.5.2 Population to be Served in Phase I (Water Supply) | |
| | (2) Additional population to be served by target year<br>- Present population served in urban and rural areas at each municipality (1994) | F8.5.2 Map Showing Future Water Supply Service Coverage by 2010 | T8.5.3 Population to be Served in Phase II (Water Supply) | |
| 8.5.2 Sanitation | (1) Household toilets<br>- Present household served by type of toilet facility in urban and rural areas at municipal level (1994)<br>- Households to be served by type of toilet facility in urban and rural areas at municipal level by target year<br>- Additional households to be served by type of toilet facility in urban and rural areas at municipal level by target year | T8.5.2 Additional number of Households to be Served by Target Year (Household Toilets)<br>F8.5.3 Map Showing Household Toilets Service Coverage by 2000<br>F8.5.4 Map Showing Household Toilets Service Coverage by 2010 | T8.5.4 Additional Number of Households to be Served in Phase I (Household Toilets)<br>T8.5.5 Additional Number of Households to be Served in Phase II (Household Toilets) | |

* Questionnaire form  Table - T,  Figure - F

## COMPOSITION OF FIGURES AND TABLES BY CHAPTER/SECTION

| Table of Contents | | Contents | Tables & Figures | | | | |
|---|---|---|---|---|---|---|---|
| | | | Main Report | | Supporting Report | | Data Report |
| | | (2) School toilets<br>- Present number of public school students adequately served at municipal level (1994)<br>- Number of public school students to be served at municipal level by target year<br>- Additional public school students to be served at municipal level by target year | T8.5.3 | Additional Number of Public School Students to be Served by Target Year (School Toilets) | T8.5.6 | Additional Number of Public School Students to be Served in Phases I and II (School Toilets) | |
| | | (3) Public utilities toilets<br>- Present number of sanitary public toilets at municipal level (1994)<br>- Projected number of sanitary public utilities toilets at municipal level by target year (new construction)<br>- Additional public utilities toilets at municipal level by target year | T8.5.4 | Additional Number of Public Utilities with Sanitary Toilets by Target Year | T8.5.7 | Number of Public Utilities with Sanitary Toilets in Phases I and II | |
| 8.5.3 | Urban Sewerage | - Assumptions adopted to define service coverage<br>- Population to be served by target year (2010) | T8.5.5 | Population to be Served by Urban Sewerage in Phase II | | | |
| 8.5.4 | Solid Waste | - Assumptions adopted to define service coverage<br>- Additional number of households to be served by the municipal system by target year (2000) | T8.5.6 | Additional No. of Urban Households to be Served by Municipal Solid Waste System in Phase I | | | |
| 8.6 | Facilities, Equipment and Rehabilitation to Meet the Target Services | | | | | | |
| 8.6.1 | Water Supply | (1) Water supply facilities by service level by target year | T8.6.1 | Water Supply Facilities Required by Target Year | T8.6.1 | Urban Water Supply Facilities Required by Target Year | |

* Questionnaire form  Table - T,  Figure - F

# COMPOSITION OF FIGURES AND TABLES BY CHAPTER/SECTION

| Table of Contents | | Contents | Tables & Figures | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | Main Report | | Supporting Report | | Data Report | |
| | | (2) Equipment:<br>- Well drilling equipment for water source development<br>- Workshop bldg., and its equipment/tools<br>- Major transportation equipment for construction and O&M | | | T8.6.2<br><br><br>T8.6.3 | Plan for Expansion of Existing Level III System<br><br>Rural Water Supply Facilities Required by Target Year | | |
| | | (3) Rehabilitation<br>- Wells and handpumps | | | | | | |
| 8.6.2 | Sanitation | - Urban household toilets required by target year<br>- Rural household toilets required at municipal level by target year<br>- Public school toilets required at municipal level by target year<br>- Public utilities toilets required at municipal level by target year | T8.6.2 | Sanitation Facilities Required by Target Year | T8.6.4<br><br>T8.6.5<br><br>T8.6.6<br><br>T8.6.7 | Urban Household Toilets Required by Target Year<br><br>Rural Household Toilets Required by Target Year<br><br>Public School Toilets Required by Target Year<br><br>Public Toilets Required by Target Year | | |
| 8.6.3 | Urban Sewerage and Solid Waste | - Additional units of truck required to meet service coverage | T8.6.3 | Number of Garbage Collection Trucks Required in Phase I | | | | |
| 8.7 | Identification of Priority Projects for Medium-Term Development | (1) Criteria for identifying priority projects<br><br>(2) Description of identified projects by mode of service in each sub-sector | | | | | | |

* Questionnaire form

Table - T, Figure - F

# COMPOSITION OF FIGURES AND TABLES BY CHAPTER/SECTION

| Table of Contents | Contents | Tables & Figures | | | | | |
|---|---|---|---|---|---|---|---|
| | | Main Report | | Supporting Report | | Data Report | |
| 9. SECTOR MANAGEMENT PLAN | | | | | | | |
| 9.1 General | | | | | | | |
| 9.2 Sector Management | - Situational Analysis: Developing the Vision<br>- Service Provision Policies and Objectives<br>- Operating Policies<br>- Regulatory Policies<br>- Financing System | F9.2.1 | Sector Management Model | | | | |
| | | F9.2.2 | Flow of Funds | | | | |
| 9.3 Institutional Arrangements | | | | | | | |
| 9.4 Project Management Arrangements | - Level I<br>- Level II<br>- Level III | | | F9.4.1 | Formats for Level I Project Data and Level II Feasibility Study | | |
| 9.5 Community Involvement Models | - Policy; responsibilities<br>- Potential future development needs | T9.5.1 | Summary of Community Development Study Sites | | | | |
| 9.6 Human Resources Development and Training | - Policy; responsibilities | | | | | | |
| 10. COST ESTIMATES FOR FUTURE SECTOR DEVELOPMENT | | | | | | | |
| 10.1 General | (1) Methodology adopted to cost estimates | | | | | | |
| | (2) Composition of cost estimates<br>- Costs for required facilities by urban and rural areas at municipal level together with equipment for construction/rehabilitation and O&M | | | | | | |

* Questionnaire form

Table - T, Figure - F

# COMPOSITION OF FIGURES AND TABLES BY CHAPTER/SECTION

| Table of Contents | | Contents | Tables & Figures | | | | |
|---|---|---|---|---|---|---|---|
| | | | Main Report | | Supporting Report | | Data Report |
| | | - Costs for sector management and recurrent costs | | | | | |
| 10.2 | Assumptions for Cost Estimates | (1) Unit Cost of facilities<br><br>Establish unit cost (per capital/HH or facility) by type and level of service based on:<br>- Existing standard unit costs of sector agencies concerned (DPWH, LWUA and DOH)<br>- Typical standards development for PW4SP (i.e., deep wells by different depths) | T10.2.1 | Unit Cost of Facilities by Type and Service Level | T10.2.1 | Unit Cost of Level I (Deep Well - 30m Depth) | |
| | | | T10.2.2 | Unit Cost of Equipment and Vehicle | T10.2.2 | Unit Cost of Level I (Deep Well - 50m Depth) | |
| | | | | | T10.2.3 | Unit Cost of Level I (Deep Well - 70m Depth) | |
| | | | | | T10.2.4 | Unit Cost of Level I (Deep Well Rehabilitation) | |
| | | (2) Unit costs of equipment based on the standard unit cost and recent procurement record at sector agencies concerned (DPWH, LWUA, DOH) | | | T10.2.5 | Unit Cost of Level I (Shallow Well-18m Depth) | |
| | | | | | T10.2.6 | Unit Cost of Level II (600 Service Population) | |
| | | | | | T10.2.7 | Unit Cost of Level III (5,000 Service Population) | |
| | | (3) Sector management costs<br><br>Establish percentages to base cost or unit cost for following sector management activities:<br>- Engineering studies<br>- Community development and training<br>- Health and hygiene education<br>- Logistics support | | | T10.2.8 | Unit Cost of Level III (10,000 Service Population) | |
| | | | | | T10.2.9 | Unit Cost of Level III (15,000 Service Population) | |

* Questionnaire form  Table - T,  Figure - F

# COMPOSITION OF FIGURES AND TABLES BY CHAPTER/SECTION

| Table of Contents | Contents | Tables & Figures | | | | |
|---|---|---|---|---|---|---|
| | | Main Report | | Supporting Report | | Data Report |
| | (4) Recurrent costs<br><br>Establish unit cost or percentage to base cost for following purposes:<br>- Regular operation cost<br>- Spare parts and equipment replacement, and<br>- Management cost | | | T10.2.10 | Unit Cost of Flush Water Sealed with Septic Tank Toilet | |
| | | | | T10.2.11 | Unit Cost of Pour Flush with Double Pit Latrine | |
| | | | | T10.2.12 | Unit Cost of Ventilated Improved Pit Latrine (VIP) | |
| | | | | T10.2.13 | Unit Cost of School Toilet | |
| | | | | T10.2.14 | Unit Cost of Public Toilet | |
| 10.3 Cost of Required Facilities and Equipment | | | | | | |
| 10.3.1 Cost of Required Facilities | - Costs of required facilities by type and service level of each sub-sector by municipality | T10.3.1 | Construction Cost of Required Facilities by Municipality | T10.3.1 | Construction Cost of Water Supply Facilities Required for Phase I (2000) | |
| 10.3.2 Cost of Required Equipment and Vehicle | - Costs of required equipment (by municipality and province) | T10.3.2 | Cost of Equipment and Vehicle | T10.3.2 | Construction Cost of Water Supply Facilities Required for Phase II (2010) | |
| | | | | T10.3.3 | Costs of Sanitation Facilities Required for Phase I (2000) | |
| | | | | T10.3.4 | Costs of Sanitation Facilities Required for Phase II (2010) | |

* Questionnaire form

Table - T, Figure - F

## COMPOSITION OF FIGURES AND TABLES BY CHAPTER/SECTION

| Table of Contents | | Contents | Tables & Figures | | | | |
|---|---|---|---|---|---|---|---|
| | | | Main Report | | Supporting Report | | Data Report |
| 10.4 | Recurrent Cost | - Recurrent costs | T10.4.1 | Recurrent Cost | T10.3.5 | Breakdown of Community Development and Training Cost | |
| 11. | FINANCIAL ARRANGEMENTS | | | | | | |
| 11.1 | General | - Scope of the study with limitations and future development needs | F11.1.1 | Sector Budget Allocation | | | |
| | | | F11.1.2 | General Flow of Financial Arrangements for Relevant Sector Development | | | |
| 11.2 | Projection of IRA | - Study on fund availability: Internal Revenue Allotment and other sources to be negotiated/arranged | F11.2.1 | Trial Allocation of Internal Revenue Allotment (IRA) to Municipalities for Relevant Sector Development | | | |
| | | | T11.2.1 | Projected Internal Revenue Allotment for Medium-Term Sector Development | | | |
| | | | T11.2.2 | Projected Allotment of IRA to the Relevant Sector by Component, 1996-2000 | | | |
| 11.3 | Additional Funding Requirements | - Financial shortfall to implement Medium-Term Development Plan | T11.3.1 | Financing Requirements for Sector Component for the Province | T11.3.1 | Percentages for Annual Investment | |
| | | | T11.3.2 | Additional Fund Requirements for the Medium-Term Plan | | | |

* Questionnaire form  Table - T,  Figure - F

# COMPOSITION OF FIGURES AND TABLES BY CHAPTER/SECTION

| Table of Contents | Contents | Tables & Figures | | |
|---|---|---|---|---|
| | | Main Report | Supporting Report | Data Report |
| | | T11.3.3 Internal Revenue Allotment for Water Supply and Sanitation Sector by Municipality (Medium-Term Development/1996-2000) | | |
| 11.4 Medium-Term Implementation Arrangements | - Implementation arrangements with available funds for relevant sector | | T11.4.1 Comprehensive Investment Need Ranking of the Municipalities | |
| 11.4.1 Reference Scenarios in Different Funding Levels | - Trial calculation on the allocation of projected IRA to municipalities for Medium-Term Development | F11.4.1 Relationship Between Funding Levels and Percent of Coverage for Water Supply Sector<br>F11.4.2 Relationship Between Funding Levels and Percent of Coverage for Sanitation Sector | | |
| 11.4.2 Alternative Countermeasures | - Acquisition of external funds<br>- Augmentation of sector finance<br>- Private sector participation<br>- Effective and economical investment | T11.4.1 Municipal Investment Need Ranking for Urban Water Supply<br>T11.4.2 Distribution of Provincial IRA to Municipalities for Urban Water Supply<br>T11.4.3 Municipal Investment Need Ranking | | |
| 11.5 Cost Recovery | - Discussion of the cost recovery by beneficiaries (O&M and other costs) and possible arrangement by LGUs | | | |

* Questionnaire form  Table - T,  Figure - F

# COMPOSITION OF FIGURES AND TABLES BY CHAPTER/SECTION

| Table of Contents | Contents | Tables & Figures | | |
|---|---|---|---|---|
| | | Main Report | Supporting Report | Data Report |
| 12. MONITORING | | | | |
| 12.1 General | | | | |
| 12.2 Sector Monitoring | - Monitoring activities with responsibilities in different administrative levels | | | |
| 12.3 Project Monitoring | - Monitoring activities at project level | | | |
| 12.4 Evaluation of Plan Implementation and Updating the PW4SP | - Manner of follow-up and feed back in planning and project implementation | | T12.4.1 Draft Formats for Annual Sector Performance Summary Report (Provincial and Municipal Levels) | |

* Questionnaire form  Table - T,  Figure - F

### 2.6.2 Data Management

#### 2.6.2.1 QUESTIONNAIRE FORMS

## STRUCTURE OF QUESTIONNAIRE

| Grouping of Questionnaire | Data Level | | | | | | |
|---|---|---|---|---|---|---|---|
| | Nat. R | Reg. R | Prov. P | Mun. M | Bar. B | Sys./Fac. S/F | Ind. I |
| 1 SOCIO ECONOMIC DATA | | | | | | | |
| 1.1 Administrative Composition | | | | M 1.1 | B 1.1 | | |
| 1.2 Past Population | | | | M 1.2.1 | B 1.2.1 | | |
| | | | | M 1.2.2 | B 1.2.2 | | |
| 1.3 Projected Population | | | | M 1.3 | B 1.3 | | |
| 1.4 Household Number | | | | M 1.4 | B 1.4 | | |
| 1.5 Services | | | | M 1.5 | B 1.5 | | |
| 1.6 Occupation Category | | | | M 1.6 | B 1.6 | | |
| 1.7 Family Income, Education and Literacy | | | | M 1.7 | B 1.7 | | |
| 2 LAND USE DATA | | | | | | | |
| 2.1 Existing Land Use | | | | M 2.1 | B 2.1 | | |
| 2.2 Future Land Use | | | | M 2.2 | B 2.2 | | |
| 3 HEALTH DATA | | | | | | | |
| 3.1 Morbidity and Mortality | | | | M 3.1 | B 3.1 | | |
| 3.2 Facility and Practitioner | | | | M 3.2 | B 3.2 | | |
| 4 WATER SOURCE DATA | | | | | | | |
| 4.1 General Infonnation | | | | M 4.1 | B 4.1 | | |
| 4.2 Water Source | | | | M 4.2 | B 4.2 | | |
| 5 WATER SUPPLY SYSTEMS | | | | | | | |
| 5.1 Level II Systems | | | | | | S 5.1.1 | |
| | | | | | | S 5.1.2 | |
| 5.2 Level III Systems | | | | | | S 5.2.1 | |
| | | | | | | S 5.2.2 | |
| | | | | | | S 5.2.3 | |
| 5.3 Level I Facilities | | | | | | F 5.3.1 | |
| | | | | | | F 5.3.2 | |
| | | | | | | F 5.3.3 | |
| 6 ENVIRONMENTAL SANITATION | | | | | | | |
| 6.1 Private Toilet | | | | M 6.1 | B 6.1 | | |
| 6.2 School/Public Toilet | | | | M 6.2 | B 6.2 | | |
| 6.3 Drainage Facility | | | | M 6.3 | B 6.3 | | |
| 6.4 Solid Waste Collection and Disposal | | | | M 6.4 | B 6.4 | | |
| 7 INVESTMENT DATA | | | | | | | |
| 7.1 Previous annual Investment | | | P 7.1 | | | | |
| 7.2 Planned Annual Investment | | | P 7.2 | | | | |

Note: Barangay level questionnaire forms are for reference purpose only