Sample Manifesto

MANIFESTO RESOLUTION

We, household heads (men or women) of Barangay _____, Municipality of _____, Province of _____, seek the assistance of the Provincial Government in putting up a Level I water system in our area.

Conscious of the attendant responsibilities in operating and maintaining the facilities, we constitute ourselves into an association in accordance with R.A. 6716 and hereby declare:

1. That the name of the association shall be _____ Barangay Waterworks and Sanitation Association;

2. That the association is formed primarily to own, operate and maintain the water facilities and provide members with adequate supply of water for domestic use;

3. That the association shall maintain office of Barangay _____;

4. That the following shall maintain office at Barangay _____;

   President _____
   Vice-President _____
   Secretary _____
   Treasurer _____
   Board Member _____

5. That membership shall be open to household heads (men or women) who shall use the water facilities; and

6. That this Resolution may be amended or repealed by majority vote of all members of the association.

To ensure the construction, smooth operation and proper maintenance of the water supply system, we bind ourselves to the following:

1. That we will provide a suitable site for the project;

2. That we will collect monthly contributions for water fees to raise funds for the repair, maintenance and cost recovery of the system;

3. That we will attend meetings and seminars conducted by PWSU/MSLT for the association;

4. That we will provide counterpart needed for the water facilities;

5. That we will exercise the following rights:

   a. Right to vote
   b. Right to hold elective office
   c. Right to be informed of the association's affairs
   d. Right to use the association's facilities

6. That we will hold an annual meeting every _____, to discuss the association's business and to elect officers for one year.

NOW, THEREFORE, we hereunto set our hands this _____ day of _____, 19___.

	PRINTED NAME	SIGNATURE	CTN
1.			
2.			
3.			
4.			
5.			
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9.			
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11.			
12.			
13.			
14.			
15.			
16.			
17.			
18.			

_____
(Name of BWSA)

_____
(Barangay, Municipality)

_____
(Province)

The Board of Directors

Date _____

_____Barangay Waterworks
and Sanitation Association

_____

Gentlemen:

I hereby apply for membership in _____ Barangay Waterworks and Sanitation Association to avail of its services of providing potable water for domestic use. I pledge to faithfully obey and comply with the rules and regulations, which may be promulgated by the Board of Directors.

I hereby further pledge to:

1. Attend all meetings which will be called by the BWSA Board of Directors/Officers;
2. Attend training/seminars which will be conducted by PWSU/MSLT for BWSA members;
3. Pay monthly water fee contributions for operation, repair, maintenance and cost recovery of the facilities as may be prescribed by the Board;
4. Observe proper utilization of water and preventive maintenance of facilities as required by the Association;
5. Assist in the installation of the water facility by providing labor, local materials and snacks, and
6. Help attain the objectives of the Association.

For information about myself and my household, please refer to my information sheet at the back page.

_____

Signature of Applicant
Over Name in Print

Right Thumbmark

BWSA Member Information Sheet

Name of Prospective Member: _____

Age: _____ Civil Status: _____ Sex: _____

Place of Birth: _____ Date of Birth: _____

Household Members (include household help):

Name	Age	Relation to Member

Present Water Source used by Household (Please Check):

Handpump _____ Artesian Well

Dug Well _____ Spring

Others _____

Present Expenses for Water per Month _____

Distance of Water Source to the House _____ meters

I hereby certify that the information above are true and correct to the best of my knowledge.

_____ _____

Signature Date

Duties and Responsibilities of BOD/Officers and Members

The management of the BWSA rests on the Board of Directors/Officers who are elected by the general membership. The Board elects from among themselves the Officers of the association: President, Vice-President, Treasurer and Secretary. The President designates the Bookkeeper and Caretaker of the BWSA. The duties and responsibilities of the Board/Officers, Bookkeeper and Caretakers are shown below.

(1) Duties and responsibilities of the Board of Directors

- Oversee the activities of the BWSA
- Formulate policies and procedures to carry out the affairs of the BWSA
- Elect the BWSA officers
- Attend all meetings of the Board and the General Assembly
- Attend training for BOD/Officers conducted by PWSU/MSLT

(2) Duties and responsibilities of the President

- Conduct/Preside over all meetings of the General Assembly and BOD meetings
- Execute policies relative to the management of the Association and the maintenance of the water facility
- Act as arbitrator in settling conflicts among members regarding BWSA operations
- Represent the Association in any activity involving BWSA operations
- Investigate the current condition of the Association and recommend measures for its improvement or solutions to its problems
- Perform such other duties as may be assigned by the Board of Directors

(3) Duties and responsibilities of the Vice-President

In the event of death, incapacity or refusal of the President to perform higher duties and responsibilities, the Vice-President shall assume the Presidency. He shall perform the duties of the President and such other duties as may be assigned by the BOD.

(4) Duties and responsibilities of the Secretary

- Attend all meetings and record the minutes
- Call meetings in the absence of the President and the Vice-President and preside until a temporary presiding officer is chosen
- Prepare and send notice to all Association meetings
- Keep all papers/documents pertinent to the Association
- Perform such other duties as may be assigned by the Board of Directors

(5) Duties and responsibilities of the Treasurer

- Attend all meetings of the Board and the General Assembly
- Take proper custody of all funds and properties of the Association
- Ensure the proper issuance of official receipts for money received by the Association
- Ensure that all expenses are authorized by the Board and covered by official receipts
- Deposit all funds of the Association in a bank designated by the Board; and
- Produce periodic reports and account reconciliation as prescribed
- Perform such other duties as may be assigned by the Board of Directors

(6) Duties and responsibilities of Bookkeeper

- Keep the financial records of the Association;
- Collect water fee contributions from and issue receipts to user members;
- Remit collected water contributions to the BWSA treasurer;
- Submit a quarterly financial status report to the Board of Directors or as often as the Board may require;
- Attend BOD meetings and BWSA training/activities conducted by the PWSU/MSLT
- Perform such other duties as may be assigned by the Board of Directors

(7) Duties and responsibilities of Caretaker

- Remind the members of the proper use of the facility
- Ensure that the water facility is in good operating condition
- Keep the record of the operation and maintenance of the water facility
- Report to the Board of Directors (BOD) any damaged or repair needs of the facility
- Perform minor repairs of the water facility
- Assist in the collection of water be contributions
- Attend meetings of the Board as may be required
- Attend skills training on operation and maintenance conducted by the PWSU/MSLT
- Perform such other duties as may be assigned by the Board of Directors

(8) Duties and responsibilities of Members

- Pay monthly water fee contribution;
- Attend meetings and training activities designed for members;
- Observe rules and regulations and policies approved by the BOD/Officers;
- Remind other water users to use the facility properly;
- Keep the premises of the water facility clean, sanitary and free from excess water which may cause contamination of the water source; and
- Adopt proper health and sanitation practices.

Procedures for BWSA Financial Operations

Bookkeeping records an organization's financial transactions involving the receipt and expenditure of money in an organization. The organization may be a small business or large corporation. It may be government or a non-government organization. Regardless of the size of the organization, it provides a standard method for recording and reporting financial transactions of all kinds. The information obtained from accurate and timely bookkeeping provides timely information on the financial health of the operation.

The information contained herein will enable the BWSA bookkeepers to record financial transactions and prepare financial reports. The manual presents the overall picture, through the General Accounting Plan procedures. A step-by-step guide follows the General Accounting Plan through all the transactions, entries and reports. Each transactions, entry and report has a corresponding form. Each form is presented with explanations on its function and how it relates to the other forms. Instructions are provided line-by-line for a clear understanding.

(1) BWSA Business Operation

The BWSA business operation is simple. Funds are generated through water fees. Although there may be other sources of income, user fees will be the main source of income. Money is spent to maintain the barangay water system and other properties owned by the association. Other funds spent include expenses for administration, parts and supplies.

With only a few sources of income and expenses, financial transaction entries can be made quickly as they occur. If transactions pile up, even a simple operation can become very complicated. It is recommended that all transactions be recorded daily. If this is done regularly, periodic reports can be prepared quickly and accurately.

(2) Maintenance and Custody of Documents and Records

Safekeeping the books of accounts, related records, accounting forms and reports is a major responsibility of the bookkeeper. Accounting forms used as the basis for recording should be arranged and filed separately in sequence. All records and documents should be locked up and access should be limited to authorized BWSA officers and personnel.

The BWSA officers should agree on the reports to be prepared, who received the reports and how frequently. It is recommended that certain records be maintained and certain reports be complied. It is up to the BWSA officers to determine how often these reports are to be made and if

additional reports are necessary. Some larger BWSAs may need monthly reports. Smaller BWSAs may only require quarterly reports.

(3) General Accounting Plan (GAP)

The flow of accounting and reporting is shown in the General Accounting Plan, Figure 1. The GAP will guide users through this section as each procedure is explained. The GAP contains four columns of boxes. Columns are headed:

- Transactions - consisting of cash and non-cash transactions
- Document - for recording different types of financial transactions
- Books - to maintain a record of financial transactions
- Reports - to summarize all financial transactions for given period.

(4) Transaction Defined

The BWSA financial transactions are classified as:

- Cash Transactions
  - Cash-In (cash receipts)
  - Cash Out (cash disbursements)
- Non-Cash Transactions

Money, incoming and outgoing, is classified as cash transactions. The GAP shows two kinds of cash transactions, cash-in (cash receipts) and cash-out (disbursement). There are also non-cash transactions, which document money owed to the BWSA or money that the BWSA owes.

1) Documents for Cash Transactions

The Official Receipt (OR), (See Figure 2) and the Voucher (See Figure 3) are the source documents for cash transactions. ORs and vouchers are called source document because they initiate the bookkeeping process.

Each time a person gives money or its equivalent to the BWSA, an OR is issued to the person. Each time the BWSA pays money to a person, a voucher is completed to show that it is an authorized expenditure. The voucher also records to whom the money was given and for what purpose.

Both the OR and voucher are numbered and all numbered documents should be accounted-for. This means that if an OR or a voucher has been incorrectly filled out, it must be kept for the record.

a) The OR records all money received by the BWSA and must specify:
   - The date funds are actually received
   - The name and address of the person paying the money
   - The amount received, both in words and in figures
   - An explanation or purpose of the payment
   - Confirmation of receipt as shown by the authorized collector's signature, usually the bookkeeper
   - The billing form number, if money is for payment of water fees

b) The voucher records all money paid out by the BWSA. Each numbered voucher must specify:
   - The date money is actually paid
   - The name and address of the person receiving the money
   - The total amount of money paid, is words and in figures
   - Details of payment, including invoice number
   - Signature of person authorized to approve payment
   - Confirmation of receipt as shown by the authorized collector's signature, usually the bookkeeper, of the person paying money
   - Signature of person receiving the money and date received

2) Document for Non-Cash Transactions

The sources for recording non-cash transactions are the billing form and the invoices. The billing form documents money that is owed to the BWSA. Invoices or statements of account are documents made by others showing money owed by the BWSA. These are transactions, which do not involve cash collection or payments, and therefore, are not to be recorded in the Cash Record Book.

a) The Billing Form (See Figure 4) is used to notify water consumers of the fees owed to the BWSA covering a certain billing period. Billing forms may be made monthly or quarterly as the Association decides. Billing forms must specify:
   - List of services rendered
   - The name and address of the person being billed
   - Period covered by this bill, beginning and ending dates

- The total amount of money owed
- Date of billing
- Date the bill should be paid
- Official signature, usually the bookkeeper

Unaccounted Water Fees are examples of non-cash transactions which should be recorded in the Receivable Book.

b) The Invoice or Statement of Account (See Figure 5) is a document prepared by the seller and presented to the BWSA showing money owed to the seller by the BWSA. Invoices usually contain:
   - An invoice number
   - The person or company sending the invoice
   - The name of the BWSA that owes the money
   - Particulars of goods or service provided
   - The breakdown of money owed and total amount due
   - A payment due date
   - Name or signature of the person requesting payment

Unpaid invoices on repair and maintenance and other unpaid expenses, such as honoraria are recorded in the Payable Book.

(5) Book of Accounts

The book of account are basic records used to record all financial transactions. Three books of accounts are maintained as described below.

1) Cash Record Book

The Cash Record Book is used to record all cash incoming and out-going transactions. The OR is recorded in the Credit column (Money Received). The voucher is recorded in the Debit Column (Money Disbursed). All entries are recorded by date, including all cancelled forms, properly notes. After each credit or debit entry, the amount is added or subtracted from the Daily Balance. At the end of the month, the entries form the bases for preparing the Statement of Operation and the Cash Position Statement.

2) Receivable Book

Unaccounted account from the members and outside parties are recorded in the Receivable Book (See Figure 7). This book shows the transaction date, the billing number, the household head, the amount and explanation or remarks about the nature/condition of the account.

3) Payable Book

Unpaid accounts on the expenses incurred by the BWSA such as salaries or wages, repair and maintenance and other expenses are recorded in the Payable Book (See Figure 8). This book shows the transaction date, the payee, the nature/explanation of the unpaid account and the amount.

(6) Financial Reports

The BWSA reports are usually prepared monthly or quarterly. The financial reports are prepared to inform the BWSA financial members of the Association's financial status. In preparing the BWSA financial reports, the bookkeeper reviews all source documents supporting the transaction to countercheck the amount appearing in the books. The recorded transactions should be summarized and arranged chronologically to produce a report easily understood by BWSA officers and members.

1) Statement of Operations

The statement of Operations (See Figure 9) is prepared monthly to record the income and expenses incurred by the Association in its operation during the period. The statement shows the revenues earned, the operating expenses incurred and the income or loss as a result of operation.

2) Cash Position Statement

The sources of information when preparing the Cash Position Statement (See Figure 10) are the cash record books and the statement of operations. The report is prepared to determine if the Association can cover its operating expenses. This statement shows the beginning cash balance, the cash receipts for the period, the cash disbursement, and the cash balance ending for the period.

3) Financial Summary Report (Annual Report)

The financial Summary Report (See Figure 11) is prepared to summarize the periodic reports prepared during the year and the supporting schedules.

(7) Bookkeeping Procedures

A step-by-step review of all BWSA transactions can be accomplished by following the accounting entries and reports.

GENERAL ACCOUNTING PLAN (GAP)
FOR BWSA TRANSACTIONS

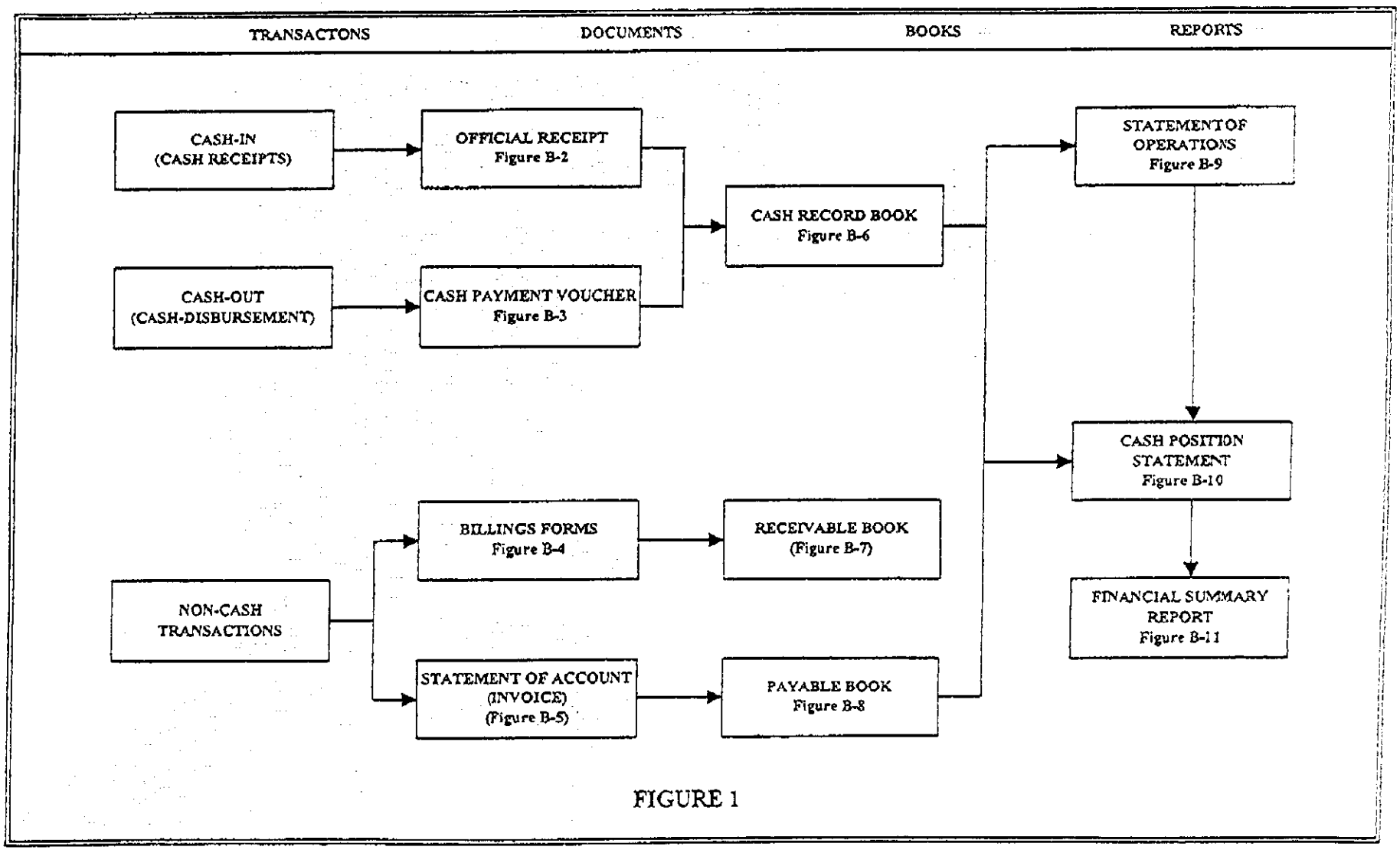


FIGURE 1

OFFICIAL RECEIPT
BWSA _____

OR. NO. _____
Date: _____

Received from _____

the sum of _____ (₱ _____)

in payment of _____

Billing Form # _____ (For payment of water fees only).

_____
Treasurer/Collector
(Bookkeeper)

Note: Print Name Below Signature

(IN TRIPLICATE)

Complete Official Receipt in Triplicate

Official Receipt must be issued for all payments received by the Bookkeeper.

FIGURE 2

CASH PAYMENT VOUCHER _____

CPV No. _____
Date: _____

Paid to : _____

Address : _____

In the sum of : _____ (₱ _____)

PARTICULARS	AMOUNT

Approved By:

_____

Received from _____

The amount of _____

As payment for the above described.

Received By

Date Received _____

Note: Print Name Below Signature

VOUCHER (IN TRIPLICATE)

Each time a disbursement is made, a cash payment voucher must be prepared to support such disbursement.

FIGURE 3

Name of BWSA

Barangay, Municipality

Province

BILLING FORM

for

WATER CONSUMPTION

Name of Member _____

Address: _____

No. _____

PERIOD COVERED					AMOUNT
FROM		TO			
MONTH	DAY	MONTH	DAY	YEAR	

Date of Billing: _____ Please pay On or Before: _____

Please pay your bill at the Office on or before the date shown above.

_____
BWSA Treasurer

Note: Print Name Below Signature

Billing must be prepared and sent to all BWSA members for their monthly dues as their monthly obligation to the Association.

FIGURE 4

Date: _____

Invoice # _____

INVOICE

_____

Sold to: _____

ITEM	NO.	UNIT PRICE	PRICE
TOTAL			₱

Received By: _____
(Print Name below Signature)

FIGURE 5

BWSA _____

CASH RECORD BOOK
COLLECTION/DISBURSEMENT
Month: _____ Year: _____

DATE	PARTICULARS	CREDIT (Money Received)	DEBIT (Money Disbursed)	DAILY BALANCE

This book records all cash transactions (collection/disbursements) made by the BWSA, and calculates a daily balance.

FIGURE 6

Name of BWSA

Barangay, Municipality

Province

RECEIVABLE BOOK

DATE	BILLING FORM NO.	HOUSEHOLD HEAD (Family Name)	AMOUNT DUE	REMARKS

This form records all accounts due to the Association

FIGURE 7

BWSA _____

_____

Barangay, Municipality

_____

Province

PAYABLE BOOK

DATE	INVOICE NO. AND DATE	CREDITOR	EXPLANATION	AMOUNT DUE	VOUCHER NO. DATE PAID

This form records all incoming invoices that have not been paid by the Association.

FIGURE 8

Name of BWSA

Barangay, Municipality

Province

STATEMENT OF OPERATIONS
For the Month _____, _____

Revenues:

Water Fees		₱
Others (Specify)		
Total Revenues		₱

Operating Expenses:

Salaries		₱
Supplies		
Repair and Maintenance		
Others (Specify)		
Total Operating Expenses		₱

Net Income/Loss ₱

Prepared By: Date Prepared:

Certified true and correct: Date Certified:

BWSA Treasurer

Note: Print Name below signature

At the end of each month, the bookkeeper prepares the Statement of Operations for the previous month.

FIGURE 9

Name of BWSA

Barangay, Municipality

Province

CASH POSITION STATEMENT
For the Month _____, _____

Revenues:			
Water Fees		₱	
Contribution			
Others (Specify)			
Total Revenues		₱	
Less: Operating Expenses:			
Salaries		₱	
Supplies			
Repair and Maintenance			
Others (Specify)			
Total Operating Expenses		₱	
Cash Balance, During the Period		₱	
Add: Cash Balance, Beginning		₱	
Cash Balance, Ending		₱	

Prepared By:

Date Prepared:

_____
BWSA Bookkeeper

_____

Note: Print Name below signature

Cash Position Statement summarizes the Association's transactions for the month ended. The Bookkeeper fills up this form every end of the month.

FIGURE 10

Name of BWSA

Barangay, Municipality

Province

FINANCIAL SUMMARY REPORT
Year End _____

I. Financial Results

1. Total Revenues _____ ₱ _____
2. Total Expenditures _____ ₱ _____
3. Total Cash on Hand _____ ₱ _____
4. Total Cash in Bank _____ ₱ _____
5. Total Accounts Receivable _____ ₱ _____
6. Total Accounts Payable _____ ₱ _____

II. Findings/Recommendations:

_____

_____

_____

_____

_____

_____

Prepared By:

_____

BWSA Bookkeeper

Date Prepared:

_____

Note: Print Name below signature

Financial summary report is made after a year of operation. It provides information to show whether the association profited or not.

FIGURE 11

Table 9.4.1 Format for Level I Project Data

Form _____

PROPOSED LEVEL I PROJECT DATA

Notice : This form shall be accomplished upon instruction of PST/PWSD

LOCATION

1.1 Barangay/Sitio

1.3 Province

1.2 Municipality

1.4 Region

POP. DATA

2.1 Total Community/Barangay Population

2.3 Proposed Population to be Served

2.2 Total Number of Households

2.4 Proposed Number of Households to be Served

INFORMATION ON THE WELL SITE

3.1 Ownership :

☐ Public ☐ Private

3.2 Description :

3.3 Location:

3.4 Donor (If Private Lot):

(Use separate sheets if necessary)

4.1 Type of Point Source:

☐ Deep Well

☐ Shallow Well

☐ Spring

☐ Others (dug well pond)

4.2 Ownership :

☐ Public

☐ Private

4.3 For wells :

Casing diameter _____ in. or _____ m.

Casing depth _____ ft. or _____ m.

Water level Well _____ ft. or _____ m.

Well capacity/yield _____ gpm. or _____ lps

4.4 For Springs : Capacity/yield _____ gpm. or _____ lps.

Approx. elevation above or below

Service Area _____ ft. or _____ m

Location

☐ Inside of service area

☐ Outside of service area

Approximate distance from center of service area _____ km.

Prepared by :

_____ _____

Municipal Liason Staff Date

Table 9.4.2 Format for Level II Feasibility Study

Form

FEASIBILITY STUDY (Level II)	Barangay	Municipality
Notice : This form shall be accomplished upon instruction of the PST/PWSO.	Province	Region

PROJECT SUMMARY

POPULATION DATA

1. Present Population	2. Design Population	3. Number of Households
		6. Number of Faucets

TECHNICAL DATA

4. Type of Source	5. Type of System	
☐ Spring ☐ Well ☐ Surface Water	☐ Gravity ☐ Pumped	
	7. Pump Horsepower _____ HP	8. Pumping Time _____ Hours per Day
9. Total Average Daily Demand _____ Liters	10. Storage Tank Capacity _____ Liters	11. Pump Discharge Capacity _____ LPS

FINANCIAL DATA

12. Total System Cost ₱ _____	13. Maximum Loan Amount ₱ _____	14. Interest Rate _____
15. Local Equity ₱ _____	16. Funding Cost per Household ₱ _____	17. Repayment Period (months) _____

18. Type of Local Equity
☐ Cash ☐ Labor ☐ Materials ☐ Others, _____

19. Total Monthly Expenses ₱ _____	20. Monthly Fee Per Household ₱ _____

ANNEXES

☐ 1 Survey Form	☐ 5 Design of Pipe Lines	☐ 9A Fittings Schedule	☐ 12 Financial Analysis
☐ 2 Map of the Project Area	☐ 6 Design of Reservoir	(G.I. Pipes)	☐ 13 Availability of Local
☐ 3 Design Criteria and	and Pump	☐ 9B Fittings Schedule	Equity
Basic Design Data	☐ 7 Detailed Design Plan	☐ 10 Bill of Materials	
☐ 4 Schematic Diagram of	☐ 8 Pipes Schedule	☐ 11 Cost Summary	
the System			

Prepared by :	Endorsed by :
_____ _____ Municipal Liason Staff Date	_____ _____ PST/PWSO Coordinator Date

Annex 1

SURVEY FORM
_____ Rural Water Supply Project

A. LOCATION

Barangay : _____ Province : _____
Municipality : _____ Region Number : _____

B. GENERAL INFORMATION

1. Population _____
2. Number of households _____
3. Distance from poblacion _____ kilometers
4. Availability of electricity Yes ☐ No ☐
5. Distance from electric line _____ kilometers
6. Power cost per kilowatt hour ₱ _____
7. Availability of public transportation _____
8. Main livelihood of residents
   - ☐ Land transport
   - ☐ Water transport
   - ☐ Farming
   - ☐ Industry ☐ Others
   - ☐ Fishing

C. TECHNICAL INFORMATION

1. Are there reliable sources of potable water?
   ☐ Yes ☐ No

a) For Wells

Well capacity : _____ lps
Casing diameter : _____
Casing depth : _____
Water level from top of well : _____
Location : ☐ Within service area
☐ Outside _____M. from service area

b) For Springs

Average dry season flow : _____ ☐ GPM ☐ LPS
Relative elevation of spring
a. _____ ☐ ft. ☐ m. above service area
b. _____ ☐ ft. ☐ m. below service area
Location : ☐ Within service area
☐ Outside _____ m. from service area

2. Are there water supply system materials and equipment (pumps, pipes, fittings) which can be donated for this project from other source?

☐ Yes ☐ No

For pumps : Type : _____ Power : _____ HP

For pipes : ☐ Galvanized Iron ☐ PVC
☐ Others, specify _____

3. Is there an existing water tank that can be used? ☐ Yes ☐ No

Type : ☐ Steel ☐ Reinforced Concrete

Capacity : _____ ☐ Gallons ☐ Cubic Meters

Location: (Please indicate in the map of the project area)

Relative elevation with respect to service area ____ ☐ ft. ____ ☐ m.

4. Are there other sites where water tanks may be erected? ☐ Yes ☐ No

Location : (please indicate in the map of the project area)

Relative elevation with respect to service area ____ ☐ ft. ____ ☐ m.

5. Does the barangay have skilled personnel? ☐ Yes ☐ No

If yes, how many? Estimated Number

Plumbers : _____
Masons : _____
Carpenters : _____
Others : _____

If no, are there competent contractors near the area?

Plumbing contractor : ☐ Yes ☐ No
Tank fabricator : ☐ Yes ☐ No

Are there suppliers of materials (pumps, pipes, fittings) in the municipality?

☐ Yes ☐ No

D. FINANCIAL INFORMATION

1. What can the barangay provide as local equity?

Cash :	₱ _____		
Labor :	_____	man-days	
Materials :	Sand	: _____	cu. m.
	Gravel	: _____	cu. m.
	Cement	: _____	bags
	Others, specify :	_____	

2. Have the people been informed of the current financing policies for Level II systems, particularly the monthly fees required to repay loan & provide for O & M?

☐ Yes ☐ No

3. How much are the people willing to pay per household per month as a water fee?

Below	₱ 6.00	☐	₱ 10.00 - 15.00	☐	Others ☐
₱ 6.00 -	10.00	☐	15.00 - 20.00	☐	Specify : _____

4. Average income per household ₱ _____ per month

E. INSTITUTIONAL INFORMATION

1. Is there an existing association who is ready, willing and able to manage the system

☐ Yes ☐ No

If yes, please specify. _____

2. Are people willing to join a water association to operate and manage a water supply system? ☐ Yes ☐ No

3. How many households are willing to be members? _____ households.

4. Name at least three (3) leaders of the community who can act as officers of the association, if required.

Name	Address
_____	_____
_____	_____
_____	_____
_____	_____

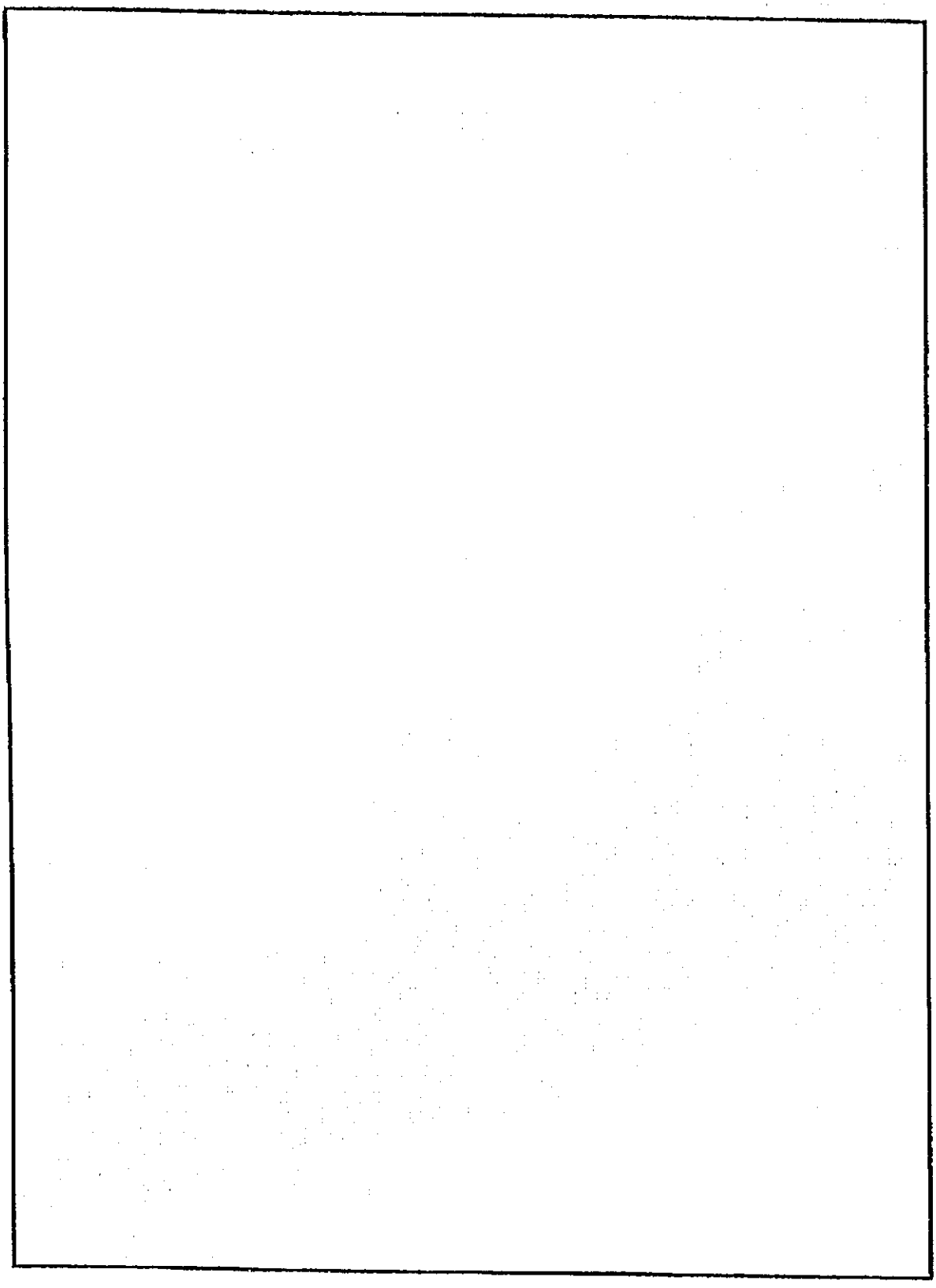
F. MAP OF THE AREA

Please attach map of the area proposed to be served. Indicate location of houses, buildings and other structures to be served including roads, the water source(s) and possible locations of storage tanks. The map should preferably be drawn to scale.

Important : If map cannot be drawn to scale, indicate distance measurements between important points along roads, or possible routes of distribution pipes with households properly indicated. For rolling terrain, indicate elevation differences between measurement points.

G. REMARKS :

Annex 2
MAP OF THE PROJECT AREA
_____ Rural Water Supply Project



Annex 3

DESIGN CRITERIA AND BASIC DESIGN DATA

_____ Rural Water Supply Project

I. Design Criteria

1. Design Period : 5 years
2. Population
   - Annual Growth : 3%
   - Average Household Size : 6 persons/HH
   - Design Population : Present Population x 1.16
3. Per Capita Water Consumption
   - Level II : 60 lpcd
   - Level II with garden : 75 lpcd
   - Level III : 100 lpcd
4. Water Demand
   - Average Day Demand : Design Population X Per Capita Consumption
   - Maximum Day Demand : 1.3 X Average Day Demand
   - Maximum Hour Demand : 2.5 X Average Day Demand
5. Pump Operation
   - Pumping Hours : 8 -15 hours
   - Pumping Rate : Maximum Day Demand/PumpingHrs. = _____
6. Storage Capacity : 1/4 of Average Day Demand
7. System Pressure : 5 - 10 psi at faucet
8. Households Served Per Faucet : 4 - 6 HH

II. Basic Design Data

1. Present Population : _____
2. Design Population (Present Population X 1.16) : _____
3. Average Day Demand: _____ X _____ : _____
   (Per Capita Consumption) (Design Pop.)
4. Maximum Day Demand: 1.3 X _____ : _____
   (Average Day Demand)

Annex 5

DESIGN OF PIPE LINES

_____ Rural Water Supply Project

SECTION (1)	NODES From (2)	NODES To (3)	SECTION LENGTH(M) (4)	HOUSEHOLD SERVED (5)	PEAKFLOW (LPS) (6)	PIPE DIA (MM) (7)	HEAD LOSS PER 100M (8)	ACTUAL HEADLOSS (9)	REMARK (10)

Annex 6

DESIGN OF RESERVOIR AND PUMP

_____ Rural Water Supply Project

A. DESIGN

1. Determine Capacity of Reservoir, (C_r)

   C_r = 1/4 x Average Day Demand

   C_r = 1/4 x D_a (LPD)

   C_r = _____ liters

2. Determine Minimum Water Elevation, (WL_m)

   WL_m = total head loss + Minimum Pressure in Main (Meters)

   For Barangay System, Min. Pressure = 5 psi (use 3M.)

   For Poblacion System, Min. Pressure = 10 psi (use 7M.)

   WL_m = _____ M.

   Note : The bottom of the storage tank should be higher than this elevation.

B. DESIGN OF PUMP

1. Determine Pump Capacity, Q_p (LPS)

   Q_p = Max. Day Demand (LPD)/ Operating Time (Sec.)

   Q_p = $78 P_d/T$ where: P_d = Design Population

   T = Operating Time in Seconds

   Q_p = _____ LPS

2. Calculate Total Dynamic Head, TDH (Meters)

   TDH = Depth of Pumping Level + by Maximum Reservoir Elevation + friction loss

   TDH = _____ m

3. Calculate Brake Horsepower Requirement :

$$\text{Brake Horsepower} = \frac{Q_p \times TDH}{75 \times \text{Efficiency}}$$

Brake Horsepower = _____ Hp

Where :

Efficiency for Centrifugal Pump, 30-60 %

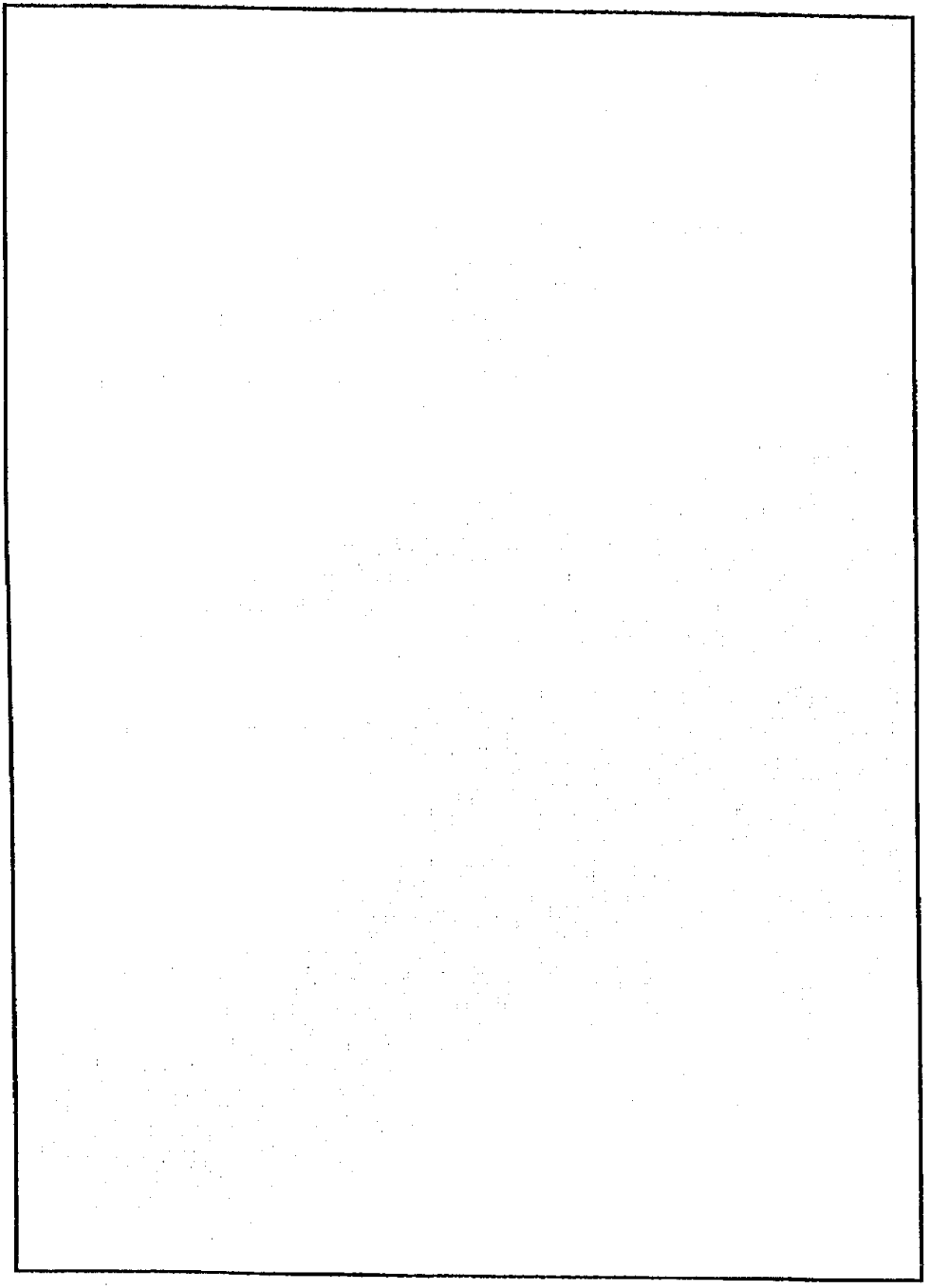
Efficiency for Submersible Pump, 50-60 %

Efficiency for Jetmatic Pump, 20-30 %

Annex 7

DETAILED DESIGN PLAN

Rural Water Supply Project



Annex 8

PIPES SCHEDULE

_____ Rural Water Supply Project

PIPE DIAMETER (1) mm	SECTION LENGTH (2) m	REQUIRED PIPES (3)	ACTUAL NO. OF PIPES (4)	ADDITIONAL PIPES (5)

Annex 9A

FITTINGS SCHEDULE (G.I. PIPES)

_____ Rural Water Supply Project

NODES / SECT LENGTH	COUPLING		UNION PATENTE	TEE STD.	TEE REDUCER	BUSHING REDUCER	ELBOW STD / ELBOW REDUCER	COUPLING REDUCER	FAUCET	NIPPLE	VALVES
	Qty.	Size	Qty.								

Annex 9B

FITTINGS SCHEDULE (PVC PIPES)

_____ Rural Water Supply Project

NODES / SECT LENGTH	SOCKET		STD. ELBOW REDUCER	STD. TEE REDUCER	SOCKET ADAPTOR	SOCKET REDUCER	G. I. FITTINGS			OTHERS
	Qty.	Size					VALVES	FAUCET	ELBOW	

Annex 10

BILL OF MATERIALS

_____ Rural Water Supply Project

QUANTITY	UNIT	DESCRIPTION	UNIT COST	TOTAL COST

Annex 11

COST SUMMARY

_____ Rural Water Supply Project

I. ESTIMATED COST OF THE SYSTEM

1. a) Cost of Pipes	₱ _____	
b) Cost of Fittings	_____	
Total Cost of Pipes and Fittings		₱ _____
2. Cost of Reservoir		_____
3. Cost of Pump		_____
4. Labor Cost		_____
a) 10% of Pipes & Fittings (For G.I. Pipes)		
b) 25% of Pipes & Fittings (For PVC Pipes)		
5. Cost of Freight and Handling		_____
6. Contingencies 5% (Pipes & Fittings - Labor)		_____
Total Cost of the System		₱ _____

For gravity system, omit cost of pump.

II. FINANCIAL DATA

1. Total Cost of the System	₱ _____
2. Local Equity	_____
3. Amount of Loan	_____

Annex 12

FINANCIAL ANALYSIS

_____ Rural Water Supply Project

A. RELEVANT DATA

1. Pumping Hours : _____ hrs.
2. Pump Horsepower : _____ HP
3. Cost/KWH : ₱_____
4. Pump Cost : ₱_____
5. Amount of Loan : ₱_____
6. Loan Terms : _____ % (interest per annum)
   : _____ years (Repayment Period)
7. Number of Households : _____

B. COMPUTATION OF MONTHLY EXPENSES (Omit non-applicable items)

1. Operations
   a. Salaries _____ x _____ = P _____
   b. Office Supplies _____ x _____ = P _____
   c. Power _____ x _____ = P _____
   d. Chemical _____ x _____ = P _____
   e. Miscellaneous _____ x _____ = P _____

2. Asset Replacement
   a. Pump _____ / _____ (Life (mos.)) = P _____
   b. Pipelines _____ / _____ (Life (mos.)) = P _____
   c. Tank _____ / _____ (Life (mos.)) = P _____
   d. Others _____ / _____ (Life (mos.)) = P _____

3. Amortization _____ (CRF) x _____ (Loan Amt.) = P _____

4. Maintenance (2% of Capital Equipt.costs annually)
   .02 X _____ /12 = P _____

6. Total Monthly Expenses = P _____

C. COMPUTATION OF WATER FEE

Monthly Water Fee Per Household :

_____ (Total Monthly Expenses) / _____ (No. of HH) = P _____

Annex 13

AVAILABILITY OF LOCAL EQUITY

Item	Amount
I. Cash	₱ _____

II. Labor

Type of Labor	No. of Workers	No. of Days	Rate Per Day	
_____	_____	_____	_____	
_____	_____	_____	_____	
_____	_____	_____	_____	
_____	_____	_____	_____	
_____	_____	_____	_____	_____

III. Materials

Type of Materials	Quantity	Unit Cost	
_____	_____	_____	
_____	_____	_____	
_____	_____	_____	
_____	_____	_____	
_____	_____	_____	_____

TOTAL ₱ _____

I certify that the items listed above represent the local share of the project cost. _____ _____ Association President Date	Noted by : _____ _____ Municipal Sector Liason Date

9.5 Community Development

9.5.2 CD Structure and Linkages

Responsibilities and Qualifications of a CO/CD Worker

1. Tasks of a CD/CO Worker

(a) As Facilitator

- Enhances individual and group strengths and helps minimize weaknesses and conflicts;
- Heightens community unity; and,
- Assists individuals and groups to respond to common interests.

(b) As Trainor and Educator

- Discerns educational needs of people;
- Helps in consciousness-raising to enable group or individual capability development;
- Assists leaders in developing new leaders;
- Continually dialogues with people; and,
- Helps develop self-determination among leaders and members.

(c) As Advocate

- Helps analyze and articulate critical issues;
- Assists others to understand and reflect upon these issues; and
- Evokes and provokes relevant discussion and actions.

(d) As Researcher

- Conducts social analysis
- Engages in participatory research with the people as partners;
- Helps create research designs for people's use and interest; and
- Integrates with the people to understand social phenomenon from the people's viewpoint.

(e) As Planner

- Conducts initial analysis of area resources and potentials;
- Assists local group's planning, strategizing and creative action; and
- Helps systematize people's actions to attain desired goals.

(f) As Catalyst

- Initiates discussions and actions regarding critical issues; and
- Monitors and nurtures growth of individuals and groups to facilitate long-term social change for people's welfare.

2. Personal characteristics of a CD/CO Worker

a) Must possess an innate and genuine love for people, which enables them to share with the people in their desire for change;

b) Must have a commitment to help people in the desire to participate in changing society. The commitment sustains them and enables them to persevere.

c) Must have a basic trust in the people, be willing to learn from them, and have faith with them.

d) Must be adaptable, flexible, able to adjust to people and circumstances and able to move with people when and where they decide to move.

e) Must be ready to learn and unlearn, be open to self-assessment and accept criticism; be able to drop pre-determined notions and stereotypes; and swallow their pride while remaining resourceful in the process.

f) Must have patience with people but not with situations so that they can keep the people moving. The people must not be pushed. A CO must keep pace with them.

g) Must be able to analyze problems, communicate with the people in their own language and work at the people's level. Only then can they start a process of critical awareness.

h) Must be able to follow the growth of critical awareness by generating with the people appropriate action towards change and transformation of the community.

3. Lifestyle and Method of Work of CD/CO Worker

(a) In Method of Work

- People-oriented, i.e. serving the interest of the people by not insisting on own project proposals.
- Able to work informally among people, and not be overburdened with committee structures.
- Able to protect the community from outside intervention such as inappropriate projects.

(b) In Lifestyle

- Humble, simple and immerse oneself in the life of the community;
- Free of self-interest and committed, and expects no reward;
- Able to identify with the people, see themselves as different, and be aware of the limitations of such;
- Open to be transformed by identification with, and involvement in the community;
- Able to develop the internal strength to accept frustrations and loneliness at times.

4. The CD/CO Worker: A Catalyst, Missionary and Visionary

a) He/she works with people, not for them.

b) He/she considers people as intelligent and with numerous experiences.

c) He/she lets the people grow.

d) He/she builds up the people's cohesiveness.

e) He/she builds up the people's organization.

f) He/she believes that people can change and can bring about change in society.

5. Desired Characteristics of a CD/CO Worker

a) Should have respect for and faith in the people they are working with; believe in the potential power and age-old wisdom of the masses.

b) Should go to the people as learners, not as teachers; listen more than talk; facilitate more than lead. Should not have the messianic or redeemed complex - but instead believe that it is the masses who will be their own redeemer.

c) Should try to know the people, their socio-economic, political and cultural situation and problems before starting any program or action.

d) Should be simple and austere in lifestyle.

e) Should have the capacity and humility to withdraw as soon as the people are ready to manage their own affairs; aims at becoming dispensable.

f) Capable of improving other's skills and knowledge.

g) Is needed in order to maintain the community's interest and participation, as well as, to maintain and accelerate the momentum needed.

h) Requires that the CO be at least several steps ahead of the community, but having in mind the direction of the community will be going and how to reach the desired goals.

FRAMEWORK FOR COMMUNITY DEVELOPMENT

Phase I: FORMATION OF ORGANIZATION

A. Pre-Entry/Preparatory

Activity	Objective	Strategy	Facilitator/Organizer
1. Hire /Appoint CD-CO worker/s	Identify and recommend a capable CD-CO worker/s from the area	Review of track records; Interview and screening of applicants	Provincial/Municipal CD Specialists
2. Orient the CD-CO worker/s on the project objectives and requirements	Familiarize the CD-CO worker/s on the project	Group discussion	Provincial/Municipal CD Specialist
3. Gather secondary data *(Barangay maps, socio-economic profile, list of leaders and development workers, peace and order situation, list of organization, history of participation in previous project.)*	Make an initial assessment of the barangay's capability to implement and assume responsibility for the project.	Data gathering	CD-CO worker/s
4. Conduct ocular survey of barangay	Orientation to the physical features/structures of the barangay	Site visits	CD-CO worker/s

B. Community Entry and Integration

5. Deploy the CD-CO Worker/s	Install the CD-CO worker/s by provincial and municipal level implementors	Community meeting	Provincial/Municipal CD Specialist; Barangay Captain
6. Pay courtesy call on barangay officials	CD-CO worker/s to establish rapport with barangay councils and leaders	Group meeting	Municipal Gov't./ Barangay Captain
7. Conduct house-to-house visit and informal interviews with the residents	Establish rapport with the barangay constituents	Home visits; Spending time in most frequented places and look and listen attentively	Barangay Leaders; CD-CO worker/s

Activity	Objective	Strategy	Facilitator/Organizer
8. Conduct project briefing	Orient community on the project objective and requirements, strategy of implementation, MOA, selection criteria of beneficiaries and activities in order to get their commitment and participation	Community meeting	CD-CO worker/s and Technical Team
9. Undertake project acceptance and signing of Memorandum of Agreement (MOA)	Delineate responsibilities of project beneficiaries and implementing agency	Community meeting	CD-CO worker/s

C. Community Assessment

10. Identify information to be gathered and possible source of information	List down relevant data that should be gathered	Group meeting	CD-CO worker/s
11. Select the method of data collection	Determine the best way of data collection, considering the information needed	Group discussion	CD-CO worker/s
12. Collect data from informants	Establish socio-economic, political and technical information about community	Home visit; focus group discussion; group meeting	CD-CO worker/s
13. Process /validate community profile and spot mapping	Confirm with the barangay officials and leaders data collected	Community and group meeting; spot checking	CD-CO worker/s
14. Present validated profile to the Community	Further enrich and refine data in the profile	Community meeting	CD-CO worker/s
15. Finalize the community profile	Update/finalize community profile	Group meeting	CD-CO worker/s
16. Analyze the problems identified	Know the causes and implications of the problems identified.	Group discussion	CD-CO worker/s

Phase II: DEVELOPMENT OF ORGANIZATION (Levels I and II)

A. Community Mobilization

Activity	Objective	Strategy	Facilitator/Organizer
1. Formulate action plan for the community	Prepare a plan of action towards the development of a WATSAN Project	Group discussion	CD-CO worker/s
2. Develop criteria to select core group that will comprise the water association	Enlist people who are interested to work actively that will support CO activities	Community meeting	CD-CO worker/s; Barangay Officials
3. Conduct core group orientation and presentation to the community	Familiarize the people comprising the core group of the water association	Barangay assembly	CD-CO worker/s; Barangay Officials

B. Formation of WATSAN Association

4A. Launch formation of WATSAN association	Community residents conduct initial meeting to formalize formation of water association	Community meeting	CD-CO worker/s; Barangay Officials
5A. Facilitate legal works and documents and mobilize committee on documentation	Prepare necessary legal documents	Committee/group discussion	Committee Chairman
6A. Finalize membership	Confirm final membership by tapstand and undertake information campaign on the importance of tapstand grouping and house rules formulation; select tapstand leader	Undertake meeting per tapstand	CD-CO worker/s
7A. Draft and ratify constitution and by-laws	Develop a set of policies and by-laws that will govern the operation of the association	Meeting of core group or tapstand leaders	CD-CO worker/s; LGU
8A. Facilitate registration and accreditation of WATSAN association	Registration of water association to appropriate government agencies	Actual registration with concerned government entity	CD-CO worker/s; Association Officers

C. Project Preparation

Activity	Objective	Strategy	Facilitator/Organizer
4B. Conduct feasibility study	Identify potential water source sites	Mobilize community through committee	Technical Team; CD-CO worker/s
5B. Present technical findings	Inform the community of the results of the feasibility study conducted	Core group meeting	CD-CO worker/s
6B. Prepare technical design	Determine/design the most appropriate technology to be used for WATSAN system	Community meeting	Technical Team
7B. Present draft technical design	Come up with recommendations on the technical study	Community meeting	Technical Team
8B. Finalize technical design	Generate community decision on the proposed WATSAN scheme	Technical Team Dicsussion	Technical Team

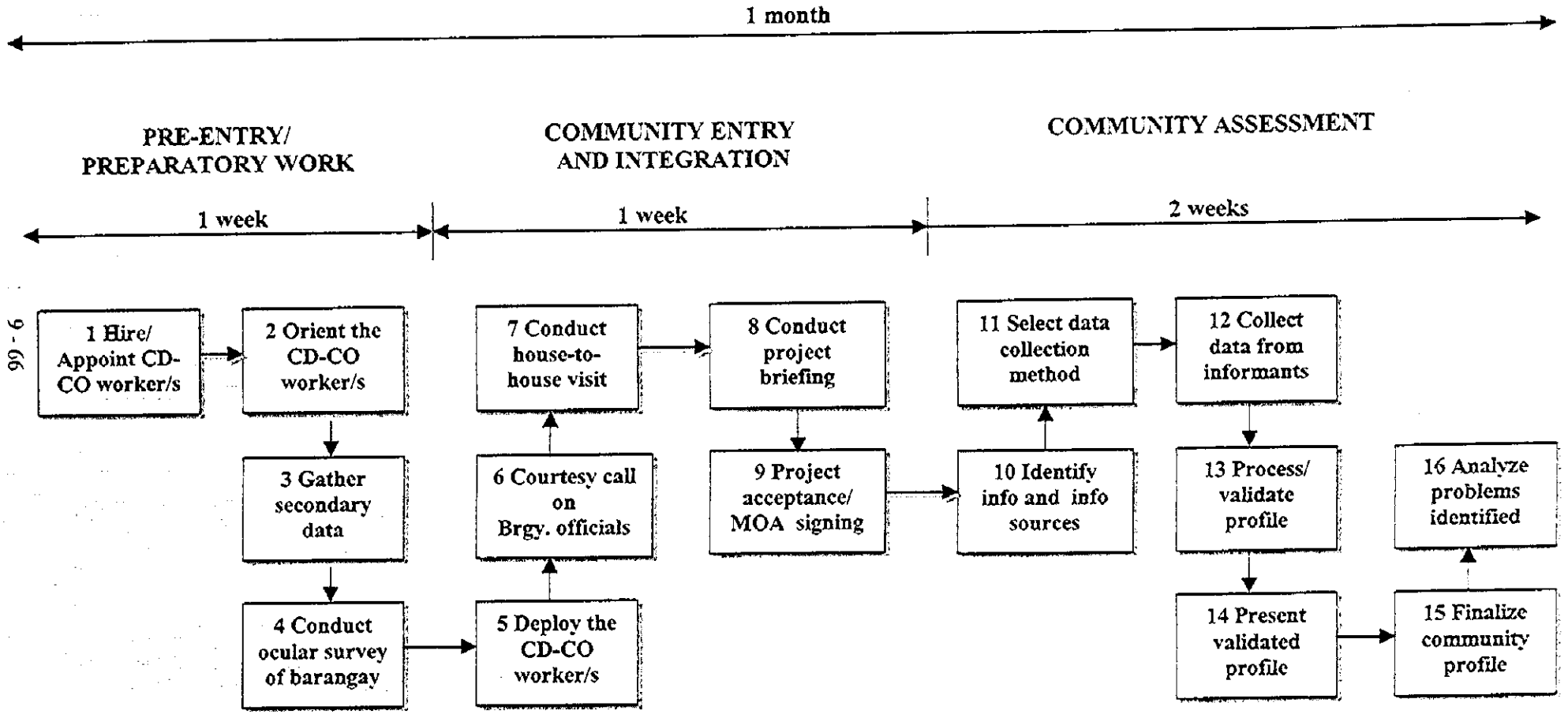
D. Project Implementation

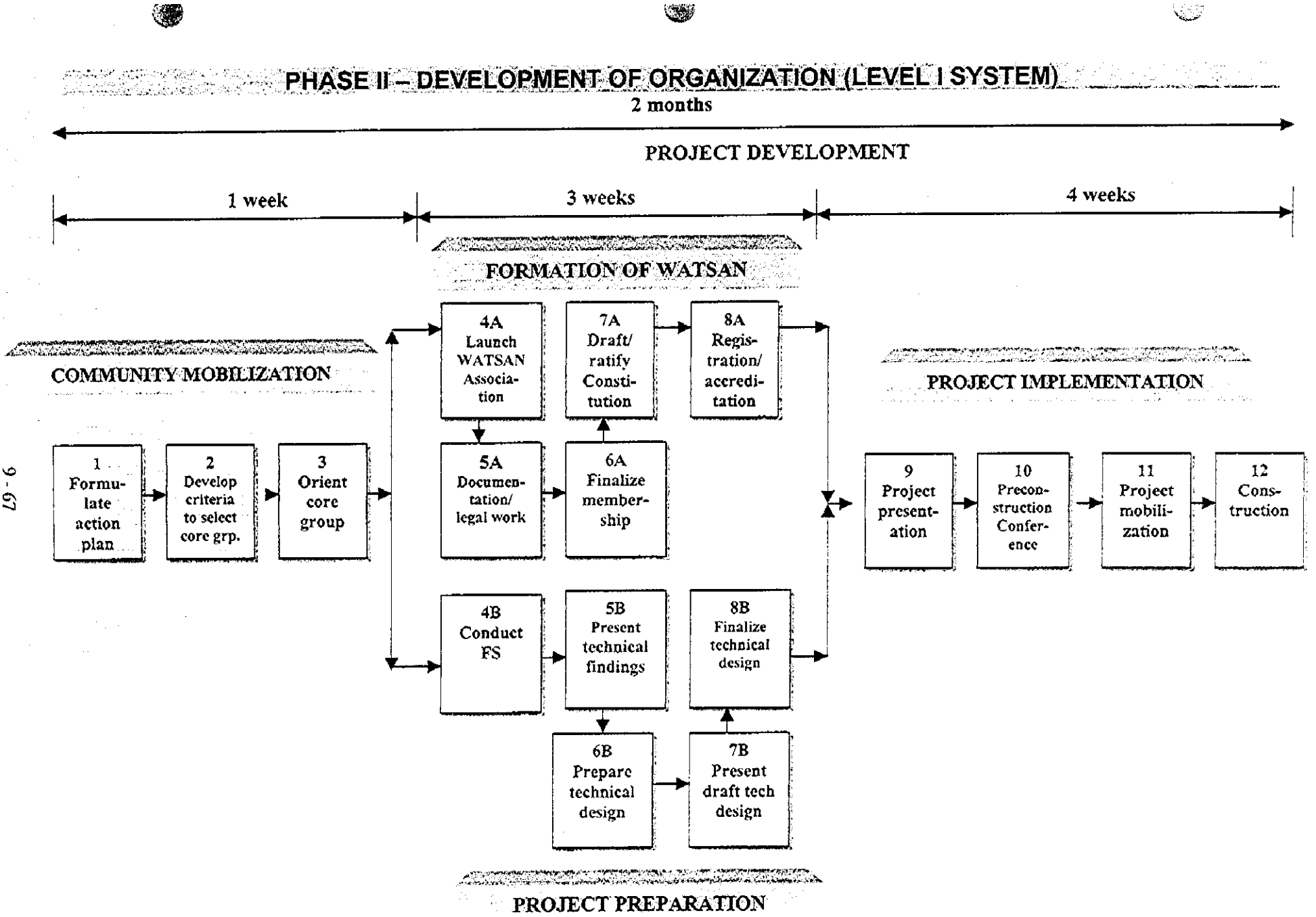
9. Undertake project presentation	Present to the community the project to be implemented and the responsibilities required of the beneficiaries	Community meeting	Technical Team/CD-CO Worker/s
10. Conduct Action Planning/Pre-construction Seminar	Generate work plan and tasking for the construction activities; Spell out what to expect during the construction processes	Community meeting	Technical Team
11. Mobilize committee for delivery of materials	Ensure that materials delivered at the community are all accounted for	Specific committee to handle materials	Selected Committee
12. Undertake construction of facility	Construct/Complete WATSAN Facility	Actual Construction	Technical Team

PHASE III: CONSOLIDATION AND SUSTENANCE OF ORGANIZATION

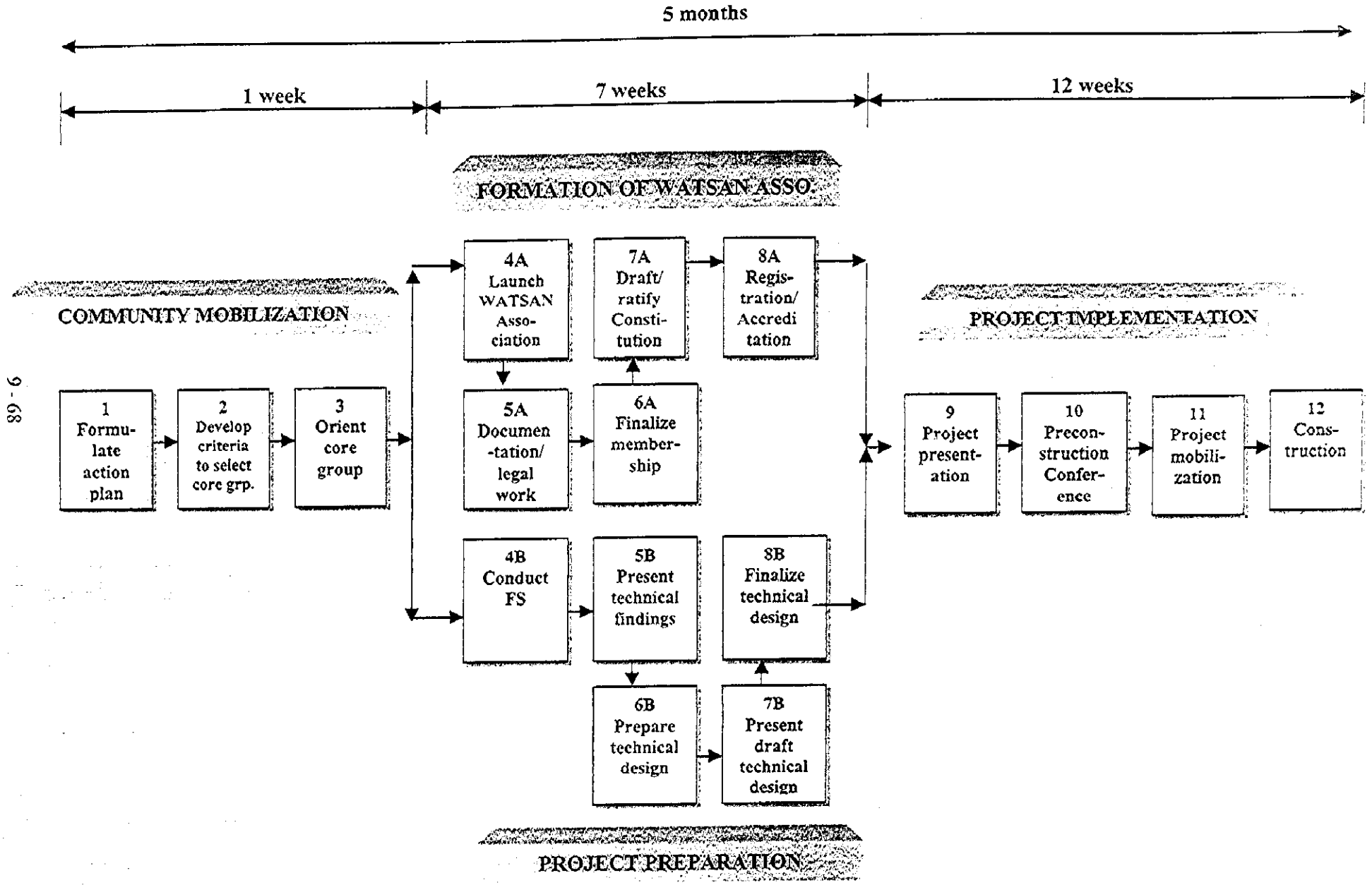
Activity	Objective	Strategy	Facilitator/Organizer
1. Conduct training on hygiene, sanitation and on health care	Conduct of training on health and sanitation	Community meeting or meeting by tapstand grouping	CD-CO worker/s; Rural Sanitary Inspector
2. Conduct training on organizational management	Conduct of training on organizational management	Seminar-workshop	LGU/CD-CO worker/s
3. Conduct training on financial management	Conduct a financial management training	Seminar-workshop	LGU/CD-CO worker/s
4. Present, compare/collate tapstand and house rules	Collate similar house rules formulated in the previous activity	Meeting of tapstand leader	CD-CO worker/s
5. Conduct test run of facility/system	Solicit community participation in ocular operation and test run of facility installed	Actual Test Run; Community meeting	Technical Team
6. Undertake water quality test	Ensure potability of water from facility	Collect water sample and submit to DOH for test	Technical Team
7. Conduct training on system operation, maintenance and repair	Conduct a training on O&M and repair	Seminar-workshop	Technical Team
8. Turn-over facility/system to WATSAN Association	To have a formal turn-over of facility/system to officers and members	Turn-over ceremony	CD-CO worker/LGU
9. Conduct Final Meeting	Conduct a final meeting with the water association officers and barangay council	Community meeting	CD-CO worker/s
10. EXIT			

PHASE I – FORMATION OF ORGANIZATION

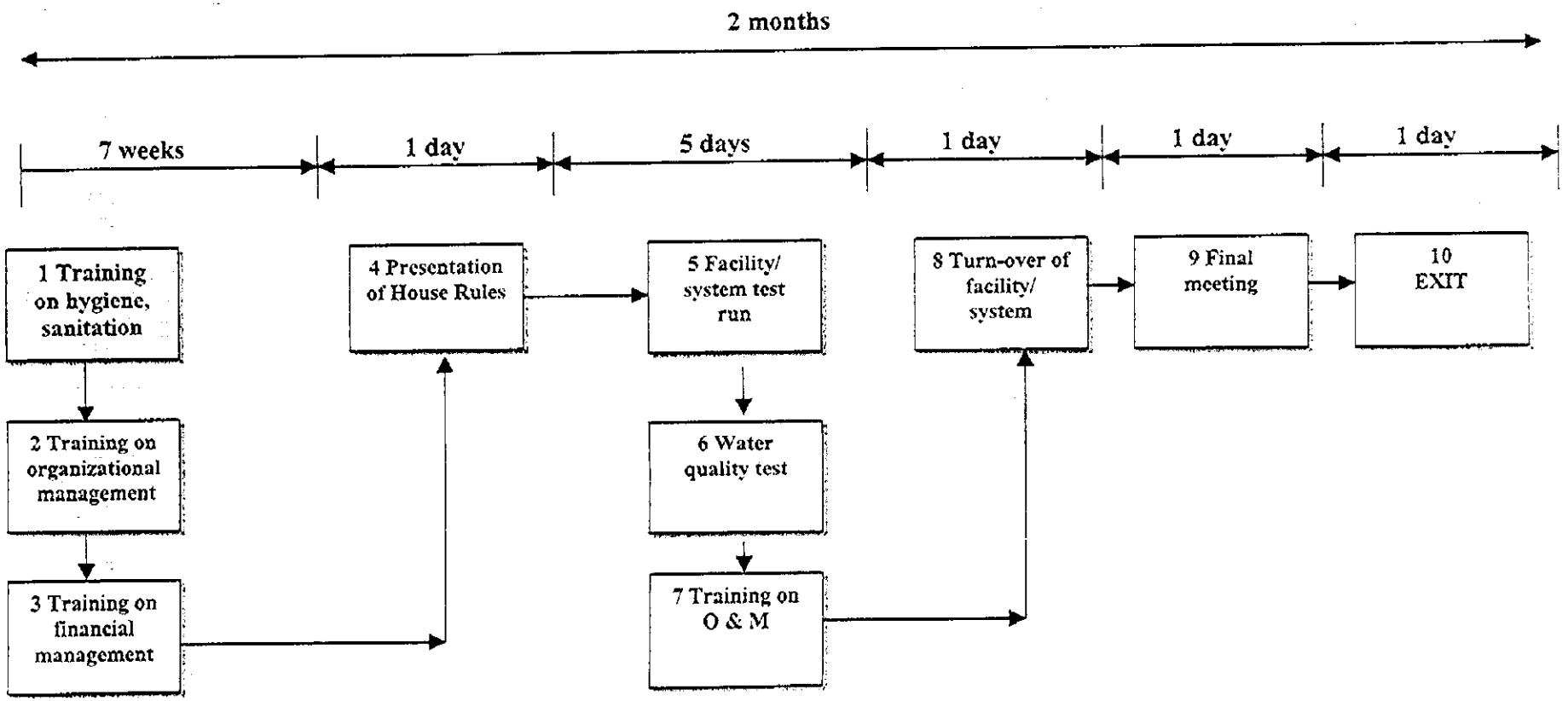



PHASE II – DEVELOPMENT OF ORGANIZATION (LEVEL I SYSTEM)
2 months
PROJECT DEVELOPMENT
1 week
3 weeks
4 weeks
FORMATION OF WATSAN
COMMUNITY MOBILIZATION
PROJECT IMPLEMENTATION
PROJECT PREPARATION
1 Formulate action plan
2 Develop criteria to select core grp.
3 Orient core group
4A Launch WATSAN Association
5A Documentation/ legal work
6A Finalize membership
7A Draft/ ratify Constitution
8A Registration/ accreditation
4B Conduct FS
5B Present technical findings
6B Prepare technical design
7B Present draft tech design
8B Finalize technical design
9 Project presentation
10 Preconstruction Conference
11 Project mobilization
12 Construction

PHASE II – DEVELOPMENT OF ORGANIZATION (LEVEL II)



PHASE III – CONSOLIDATION AND SUSTENANCE OF ORGANIZATION



Typical CD Work

Community Organizing for Water Supply and Sanitation

Community organizing for water supply and sanitation projects is aimed at forming user groups through a process that integrates the hardware (technical aspects) and software (social aspects) components of a water supply and sanitation project.

People's participation, which can be gauged against the extent to which they themselves are involved in the decision-making processes, their willingness to stake local resources, (both in cash and in kind) and the extent to which trainings have improved the knowledge, skills and attitudes of the people are some of the indicators of a good community organizing work.

The Community organizing process is developing a partnership with the community. The Community organizer is simply a catalyst in the community's efforts to build their self-confidence to operate, maintain and sustain their water supply and sanitation service.

The CO Framework

The CO Handbook is one of the tools that a community worker may use as a guide in organizing user's groups for community-managed water supply and sanitation facilities. It is presented in three (3) major stages following the community-organizing framework. These stages are a) Formation of Organization; b) Development of Organization; and c) Consolidation of Organization.

The process contains a chronology of activities that starts with the deployment of community organizer and ends up with his/her exit from the community.

Except for steps 9 and 10 of Stage II and Step 20 of Stage III which need not be undertaken for a Level I, all the rest applies to Levels I and II water supply projects. level I water supply projects refer to point source facility catering to a cluster of ten to fifteen households while level II refers to a waterworks that has a distribution system such as multiple tapstands.

The ***Formation of Organization*** stage covers activities intended to enlist community participation and make community understand the concepts, processes and importance of organizing a group that will become responsible for eliciting maximum participation for WATSAN activities.

The ***Development of Organization*** stage covers activities intended to build capability of water users' organization, which include trainings and full participation in both technical and social activities. It also includes the CO worker's sharing and transferring of organization development and community organizing technology to the leaders of the water users' association. In this way, the community will be able to increase their capability for self-management.

The ***Consolidation of Organization*** stage consists of activities intended to "tie loose ends." This is to ensure that at the exit of the CO worker, the water users' association can sustain its operations without an external catalyst.

The last part of the Handbook is a compilation of useful tips in recording the minutes of the community meetings, contents of a spot map, sample tapstand membership form and tapstand membership list, characteristics of a CO worker and community leaders and others. All these

are appended as additional guides to enhance the organization process and facilitate the attainment of the CO objective.

Community Organizer

The community organization worker as a catalyst is one who believes that the people are the main actors in the processes and that his/her role is that of facilitating the community organizing process; improving the skills and knowledge of the community; and that he/she has to withdraw as soon as the people are ready to manage their affairs.

Objectives of the CO Work

The General Objective of the CO work is to form a community-based water user's association that will operate, maintain and sustain their water supply and sanitation facilities.

Stages of CO Work

Each of the three stages of CO work as contained in the framework is distinctly characterized by various activities needed to ensure that the organization will continue to function even after the exit of the CO worker.

Phase I is characterized by the formal entry of the CO worker to the community. This is marked by courtesy call first to the barangay leaders and then to the community. These activities require thorough understanding of the nature of the project.

The CO worker needs various tools to undertake these activities. A chart preferably in the local dialect that explains the concept of the project and the roles of the various stakeholders is very important. The community profile is one tool that also needs to be validated by the community themselves. The profile serves as a CO tool in facilitating community decisions.

Phase II is characterized by a series of trainings intended to provide adult learning processes to the water users' association. This includes practical and workable approaches needed to synchronize activities and provide appropriate mix of technical and social knowledge and skills to the water users.

Phase III begins when the organization is formalized, water system potability is ensured, legal documents are executed and facility is turned-over to the water users' association for their operation and maintenance. This phase ends when the community organizer exits from the community, leaving behind an organization with positive indicators for sustainability.

1. ENTRY STRATEGIES

CO DEPLOYMENT

Objective	:	Indorse the CO worker to the community by provincial and municipal level implementors
Expected Result	:	CO worker is introduced to the barangay officials and the community
Suggested Strategy	:	Community meeting
Facilitator	:	Barangay Chairman
Co-facilitator	:	Municipal Level Implementor

Agenda in the first orientation meeting and courtesy call to barangay council:

- Title of the project
- Objectives
- Stakeholders and their roles, responsibilities and accountabilities
- Funding and counterparting
- Project features or components
- How the project will be executed
- Timetable
- Inputs and outputs (largely trainings)
- Role of the intermediaries (NGOs)
- Solicit/request for CO volunteers to participate in profiling and spot mapping

VALIDATION OF COMMUNITY PROFILE AND SPOT MAPPING

Objective : To establish socio-economic, political and technical information about community directly or indirectly related to water and sanitation.
Expected Results : Validated secondary data from the community
Suggested Strategies :

- Home visits
- Focus group discussion
- Visit to RHUs, MPDO, MHO, local school
- Community meeting

CONTENTS OF THE SPOT MAP

- Natural features (creeks, river, lakes, mountains, water sources)
- Man-made structure (houses, buildings, bridges, roads, schools, cemetery, halls, markets, water system facilities)
- Technical data (distance, north orientation, elevations, scale, date prepared, source of information, persons/agencies involved, names of places, boundaries, legend, index to adjoining sheets, coordinates)

2. PRESENTATION OF VALIDATED PROFILE TO THE COMMUNITY

Objective : To further enrich and refine data in the profile
Expected Results :

- Profile validated by the community
- Surfacing of thoughts on:
  - How project will be implemented on the site
  - How the facility will be designed and constructed
  - How the community perceived their role in the project
- Solicit counterpart
- Determine/recommend long list of potential core group members

Facilitator : CO worker
Audience : Key informants (farmers, church leaders, teachers, etc.)

3. DEVELOPMENT OF CRITERIA FOR SELECTION OF CORE GROUP

Objectives : To enlist people interested to work actively that will assist in CO activities
Expected Results : Core group members elected

- Role and function of core group drawn
- Adhoc committees formed and functions drawn
- Committee chairman selected
- Plan of action done

IDEAL SELECTION CRITERIA FOR CORE GROUP MEMBERS

- Must have the time and commitment to do community development activities in their locality
- Proven leadership skills
- Direct exposure and experience in community development project/activities
- Have some basic knowledge and/or skills in community organizing
- Good moral standing
- No criminal record
- Should be one of the beneficiaries
- With good interpersonal relationship with the community
- Should be literate

ROLES AND FUNCTIONS OF THE WATER CORE GROUP

- Initiates the planning and implementation of action on water related activities
- Preparation of water project feasibility study/design community survey and spot map to further validate the importance of the project to the community at large
- Mobilize community resources specifically: the time, skills and efforts of the people
- Resources of the local agency, i.e., money, technical know-how, equipment, machines
- Disseminate information, keeps the community informed about the status of the water project
- Hears and considers suggestions of people with regards to the appropriate activities of the project
- Facilitates the expansion of water core group into Barangay/Rural Waterworks Association.

COMPOSITION OF THE CORE GROUP

- Technical persons who can be trained on the technical aspects of the project
- Individual who are trusted and respected by community
- Those who have a strong liking to work for people
- Those who have a spirit of volunteerism
- Those who are resourceful
- Individuals who are understanding and patient enough to go with the pace of the community
- Together with the community, they should be able to identify the:
    - Objectives of the group
    - Define roles and responsibilities
    - Clear expectations to members and group as a whole

ADHOC COMMITTEES CO-TERMINUS WITH THE CORE GROUP

- Education and recruitment
- Monitoring, evaluation and control
- Coordination and manpower
- Documentation (to include preparation of legal documents)

FUNCTIONS OF THE COMMITTEES

a. Education and recruitment
    - Project information drive
    - Advocacy on water supply, sanitation, health care and hygiene

b. Monitoring, evaluation and control
   - Inspects and accepts hardware, tools and equipment
   - Acts as property custodian
   - Monitor the evaluation
   - Initiate action planning relative to construction activities

c. Coordination and manpower
   - Coordinate resources from stakeholders
   - Do follow-ups and issue reminders
   - planning and manpower scheduling in terms of number and distribution
   - Coordinate technical activities in project site

d. Documentation
   - Facilitate the issuance of legal documents such as right of way permit, deed of donation, certification water source site, etc.

4. ASSIST IN SITE SELECTION AND FEASIBILITY STUDY

Objectives	:	To identify potential water source sites
Expected Results	:	Water source site for development identified (or prospecting for wells)
Suggested Strategy	:	Technical data gathered

5. PRESENTATION OF TECHNICAL FINDINGS

Objectives	:	To come up with recommendations on the technical study
Expected Results	:	Decision by the community on the technical findings
	:	Water samples collected from agreed upon water source site (for spring only)
Suggested Strategy	:	Meeting of the core group
Facilitator	:	LGU Technical Team
CO-facilitator	:	CO worker

By the end of Phase I of Community organizing work, the following milestones must have been achieved:

- Water Core Group formed
- Adhoc Committees formed and chairman named
- Water source site identified and initial studies done
- Community profile and spot map completed and validated

While at this stage, there is no way yet of gauging the certainty of making the project succeed in terms of a community-managed facility, a thorough understanding by the beneficiaries of the project features, stockholders, tasks, inputs, outputs and other important information about the project which is done formally as the opening salvo of the CO to the community and, later, on a more informal manner , as the CO integrates to the community is one of the most critical part of this phase.

As community organizing progresses, the deepening sessions of the CO worker in reinforcing project concepts such as strategies for community initiatives towards addressing key issues affecting their community that are directly or indirectly related to water are reinforcing mechanisms in providing impetus to the development of an informal water users' organization, as infant as a water core group.

6. HUMAN RESOURCE DEVELOPMENT TRAINING

Objective	:	To build a strong and cohesive team from among the core group members and barangay officials (if appropriate)
Expected Results	:	Trained core group members on Human Resource Development
Facilitator	:	CO worker
Co-facilitator	:	Core group members

7. PRESENTATION OF TECHNICAL DESIGN

Objective	:	Generate community decision on appropriate technology to be used
Expected Results	:	Generate community decision on appropriate technology to be used
Suggested Strategy	:	Community meeting to discuss - Initial findings on technical feasibility study - Presentation of technology options
Facilitator	:	Technical Team

8. FACILITATION ON LEGAL WORKS AND DOCUMENTS

Objective	:	Prepare necessary legal documents
Expected Results	:	Legal documents required in WATSAN projects prepared
Facilitator	:	Committee Chairman
CO-facilitator	:	CO Worker

LIST OF DOCUMENTS REQUIRED IN IMPLEMENTING WATSAN PROJECTS

- Barangay Resolution desiring to avail of a water facility to be submitted to the LGU
- Building permit of WATSAN facility, from LGU
- Waiver form DENR (if water system components such as the source, tank, pipelines are situated in areas other that private lands) to use the site(s) for community development
- Right of way permit from private land owners, specifically for spring sites and pipeline routes
- Deeds of donation from private landowners for water tank and tapstand sites
- Certificate of water quality source to be developed and tapped, from DOH
- Certificate of water quality produced through the water system facility, from DOH
- Letter of acknowledgment from the municipal mayor endorsing the water system management to the water users' association formed
- Accreditation pertinent papers (needed for the accreditation of RWSAs/BWSAs at the LGU level)
- Water rights
- Water permit
- Drilling permit

9. PRESENTATION OF DRAFT TECHNICAL DESIGN
(Skip This Activity If Level I)

Objective : To inform the community of the results of the feasibility study conducted

Expected Results:

- Location of major components such as well drilling site, transmission and distribution pipelines
- Tanks and tapstands are identified
- Community acceptance of design
- Local counterpart generated

Suggested Strategies:

- Community meeting
- Site visit to proposed structures/facilities' location

INFORMATION TO BE PRESENTED TO THE COMMUNITY

- Role of technical people
- Contents of typical water system technical plan
- Presentation of design specifications and explanation of plan contents /drawings in layman's terms
- Presentation of program of work (POW) , bill of materials and cost estimates
- Validation of data gathered and used in the designing
- Solicit ideas, opinions, comments and preferences
- Come-up with compromises, and if appropriate determine local counterpart

10. MOBILIZATION OF COMMITTEE ON DOCUMENTATION

(skip this activity if Level I)

Objective	:	To facilitate additional legal work requirement for tapstand, pipeline and other major system components
	:	To ensure a formal listing of tapstand membership
Expected Results	:	Completed legal documentation requirement membership per tapstand known
Facilitator	:	Committee Chairman, Committee on Documentation and Education and Membership
CO-facilitator	:	CO worker

11. CONFIRMATION OF MEMBERSHIP BY TAPSTAND

Objective	:	To confirm final membership by tapstand To undertake information campaign on the importance of grouping and houserules formulation
	:	To select tapstand leader
Expected Results	:	Final listing of membership per tapstand
	:	Formulated tapstand houserules
	:	Tapstand leader selected
Suggested Strategy	:	Undertake meeting per tapstand
Facilitator	:	CO worker
CO-facilitator	:	Chairman, Committee on Education and Recruitment

DISCUSSION POINTS IN FORMULATING TAPSTAND HOUSERULES

a. Getting water:
   - How will water be fetched?
   - When will water be fetched?
   - Who can fetch water?

b. Monitoring
   - List down who fetches and how much volume of water was taken

c. Water tariff due the specific tapstand

d. Sanitation around the tapstand and around the cluster

e. Beautification and physical development in the tapstand site

f. Financial management regarding water tariffs

12. PRESENTATION OF FINAL TECHNICAL DESIGN

Objective	:	To present and approve the final technical design
Expected Results	:	Finalized counterpart agreement
	:	Construction scheduling developed
Suggested Strategy	:	Meeting among tapstand leaders, core group and barangay council

13. TRAINING ON HYGIENE, SANITATION AND HEALTH CARE

Objective	:	Conduct of training on health and hygiene
Expected Results	:	Awareness on community health aspects
Suggested Strategy	:	Community meeting, or
	:	Meeting by tapstand grouping
Organizer	:	CO Worker, community and rural sanitary inspector
Training Management	:	LGU
Audience	:	Core Group, Barangay Officials, Barangay Health Workers, Rural Sanitary Inspectors, and Barangay Nutrition Scholars

14. SOURCE FOR EXCRETA DISPOSAL MATERIALS AND/OR FACILITIES

Objective	:	To make available to the community facilities for excreta disposal (if conditions and culture warrant)
Expected Results	:	Materials/facilities for excreta disposal constructed individually by members of the community in their households
Suggested Strategy	:	Core group members together with CO worker make representations with LGUs to source materials or facilities
Facilitator	:	Core group members
CO-facilitator	:	CO worker

15. ORGANIZATIONAL MANAGEMENT TRAINING

Organizer	:	CO and the community
Training Management	:	LGU
Audience	:	tapstand leaders, core group and barangay officials

16. PRE-CONSTRUCTION CONFERENCE

Objective	:	To generate work plan and tasking for the construction activities
Expected Results	:	Activities and roles identified
	:	Commitment to participate generated
Suggested Strategy	:	Hold a community meeting
Facilitator	:	Technical team
Co-facilitator	:	CO worker

AGENDA IN THE PRE-CONSTRUCTION CONFERENCE

- Presentation of schedule of work and tasking
- Determine quantities of resources needed
- Labor arrangements
- Salaries/wages, if any that will be incurred
- Mobilization of committees
- Arrangement on materials storage

17. MOBILIZATION FOR DELIVERY OF MATERIALS

Objective	:	To ensure that materials delivered at the community are all accounted for
Expected Results	:	Materials delivered all accounted for and in accordance to the agreed upon specifications in the technical design
Suggested Strategy	:	Specific committee to handle delivery, and storage of materials , and, if need be, disposition of materials
Facilitator	:	Committee to be agreed upon by the core group
Co-facilitator	:	CO worker

18. ACTION PLANNING FOR CONSTRUCTION

Objective	:	To spell out what to expect during the construction processes
Expected Results	:	Smooth implementation of construction activities
Facilitator	:	CO worker
Co-facilitator	:	Technical Team
Suggested Strategy	:	Core group meeting

STEPS TO BE UNDERTAKEN:

- Identify activities related to construction
- Define activity schedule and resources required
- Identify the type of manpower skills required per activity
- Monitoring and documentation of major water system components
- Progress reporting, evaluation and action planning
- Monitoring and documentation on construction of major water system components
- Repeat cycle until completion

19. DEVELOPMENT OF EXIT PLAN

Objective	:	To plan for the transfer of responsibility from CO worker to core group members
Expected Results	:	Core group informed of activities ahead and the expected time of withdrawal of the CO worker
	:	An exit plan containing task list and specific person responsible
	:	Organizational development program developed
Suggested Strategy	:	Core group meeting
Facilitator	:	CO worker
Co-facilitator	:	Technical Team
Audience	:	Community members

At the end of the Development of Organization Phase, the following milestone must have been achieved:

- Basic organizational development training such as value formation, leadership and team building and sanitation, health care and hygiene education must be done
- CO exit plan jointly developed by the CO together with the community
- All legal documents completed
- Pre-construction conference done
- Materials for construction delivered and accepted by the community
- Organizational strengthening such as involvement of a greater number of community members participating in mobilization activities and increased awareness on key issues through information exchange

The success of the phase rests on the extent the community had participated in the activities and learned from the processes as inputs to the community's capability for self-management. On the other hand, one of the most crucial factors to participation rests on the depth and broadness of their understanding of the project concept, features, processes, stakeholders, tasks, and responsibilities coupled with the need for water supply facility, a condition validated in the first orientation meeting done by the CO upon entry to the community.

The inputs that will be provided by the CO and the technical team will provide the necessary honing skills for the core group and tapstand leaders to have the confidence to accept more challenges in the next phase. These challenges are contained in the Exit Plan, which was formulated by the local stakeholders. The Plan will be implemented in Phase III stage to signal the weaning process of the community from the CO worker.

20. PRESENTATION, COMPARISON & COLLATION OF TAPSTAND HOUSERULES

(skip this activity if Level I)

Objectives	:	Collate similar houserules formulated in the previous activity
Expected Results	:	Collated houserules
	:	Identified houserules appropriate for by-laws
Suggested Strategy	:	Meeting of tapstand leaders
Facilitator	:	CO worker
Co-facilitator	:	Core Group Member

21. DRAFTING OF CONSTITUTION AND BY-LAWS

Objective	:	To develop a set of policies and by-laws that will govern the operation of the organization

Expected Results : Constitution and by-laws ready for ratification
Suggested Strategy : Meeting of core group and tapstand leaders

22. RATIFICATION OF CONSTITUTION, BY-LAWS AND POLICIES

Facilitator : CO Worker
Co-facilitator : Core Group Member
Expected Results : Constitution ratified
: Officers elected

23. FACILITY/SYSTEM TEST RUN

The community participates in ocular operation and test run of facility installed

Facilitator : Technical Team

24. WATER QUALITY TEST

Objective : To ensure potability of water from facility
Expected Result : Water facility is to provide potable water to community
Suggested Strategy : Collect water sample from tapstand
: Submit sample to DOH for test and certification

25. TURN-OVER OF FACILITY/SYSTEM

Officers elected organize and manage facility turnover ceremony

26. OPERATION, MAINTENANCE AND REPAIR TRAINING

Trainer : Technical team
Trainees : Community-appointed Plumber, Meter Reader (if there is a meter installed), Tapstand leader and RWSA/BWSA officers

27. FINANCIAL MANAGEMENT TRAINING

Trainer : NGO, LGU or Water District
Trainees : Bookkeeper, Tapstand Leader and RWSA/BWSA officer

28. RWSA/BWSA REGISTRATION AND ACCREDITATION

Facilitator : RWSA/BWSA officer
Co-facilitator : CO worker

Registration of BWSA/RWSA to appropriate government agencies is done. Options on where to register shall be presented and decided upon by the organization.

Possible Options:

In the absence of a clear national policy on B/RWSA registration, the following Registering Agencies could be presented as options:

a. Securities and Exchange Commission
b. Bureau of Rural Workers
c. Local Waterworks Utilities Administration

d. Department of Social Welfare and Development
e. Cooperatives Development Authority

Accreditation of BWSA/RWSA is done through the municipal local government unit.

29. FORMAL EXIT OF THE CO WORKER

Facilitator	:	RWSA Officer
Co-facilitator	:	CO worker
Suggested Strategy	:	Hold a community meeting
Agenda	:	Assessment of CO Exit Plan
	:	Planning for the operation and management of water facility
	:	Scheduling of CO visits
	:	Scheduling of RWSA/BWSA and CO formal linking with other organizations and agencies
	:	Formal turn-over of CO responsibility to RWSA/BWSA

At the end of the Consolidation Phase, the following milestones are achieved:

- Facility is turned-over to the RWSA/BWSA and is functioning as intended and has it set of officers, constitution and by-laws and policies
- Plan for operation, maintenance and repair of system is installed

At the end of the community organizing process, the degree of capability of RWSA/BWSA in the operation and maintenance of water supply facility and maintaining their organizational health can be gauged on the extent of participation of the members in resolving problems and making decisions. The extent of focus of team building and leadership inputs is crucial in how the members of the RWSAs/BWSAs are willing to make amend allow some compromises among each other. On the other hand, the technical soundness of the design and execution of the construction ensures the long-term sustainability of the system.

By this time, the CO has exited but maintains monitoring visits until he/she is fully confident that the organization is strong enough to take decisions, plan and implement their WATSAN related activities and knows where to access support (in terms of financial, institutional and technical) when needed.

Source: ***Water Supply and Sanitation Program Management Office***
Department of the Interior and Local Government

10 COST ESTIMATES FOR FUTURE SECTOR DEVELOPMENT

10.2 Assumption for Cost Estimates

(1) Unit Construction Cost

The base information in previous PW4SP, such as bill of quantities and unit cost of respective component facilities was fully utilized, which was referred to the standards of relevant sector agencies. Escalation rates experienced between 1995 and 1998 in terms of major construction materials and equipment rental were studied using NSO statistics (wholesale price index). Market prices of these items were also canvassed to compare with calculated prices in 1998 from those in 1995 in application of the escalation rates.

In general, escalated prices meet canvassed prices in most of the materials. Escalation rates between 1995 and 1998 were employed in round figures. Some of them (pipe materials, etc.) were, however, deferred at previous level due to considerable price stabilization in the last year.

The Table 10.2.1 shows the prices of the major materials by facility.

Table 10.2.1 Price of Major Materials by Facility

Major Materials	Water Supply			Sanitation			Projection by Major Materials					Canvassed & Collected Price		Comparison (1), (2) & (3)
							NSO Wholesale Price Index			Price				
	L-I	L-II	L-III	ST, PT	Flush type	VIP, Dry	1995	1998	Escalation	1995	1998(1)	DPWH(2)	CIA(3)	
1. Aggregate	x	x	x	x	x	x	311.6	367.5	5.7%					Almost the same with (2) & (3).
Sand										304	359	330	350	
Gravel										385	454	418	500	
2. Cement	x	x	x	x	x	x	197.4	214.1	2.7%	117	127	126	105	ditto
3. Fuel	x		x				601.6	742.6	7.3%	1,100	1,358	1306		ditto
4. Metal pipe	x	x	x				208.7	226.3	2.7%					Price of GI casing is almost the same with (2) and screen is 12% lower than (2).
4" x 3m, GI										2,625	2,846	2763		
4" x 3m, Screen										4,313	4,667	5291		
5. PVC pipe	x	x	x	x			199.2	223.4	3.9%					Price of PVC pipe is almost the same with (2) and 7% higher than (3).
2" x 3m										813	912	882	852	
1-1/2" elbow										13	15		40	
6. Reinforcing	x	x	x	x	x	x	201.4	221.9	3.3%					Almost the same with (3).
12mm x 6m										68	75		75	
10mm x 6m										49	54		45	
7. Lumber				x	x	x	268.5	296.8	3.4%					
8. Paint				x			128.0	140.1	3.1%					Almost the same with (3).
Enamel, QDE										266	291		310	
9. Machinery	x		x				254.8	254.8	0.0%					

L-I: Deep well/shallow well, L-II: Major materials are the same as those of L-I spring development,
ST: School toilet, PT: Public toilet, Flush type: Flush water sealed w/ septic tank and Pour flush w/ double latrine,
CIA: Construction Industry Authority of the Philippines, prevailing prices for the month of December 1998
GI: Galvanized iron steel pipe for well casing, Screen: Low carbon steel and wound wire type

Table 10.2.2 (a) Unit Cost of Level I (Gravel Packed Deep Well - 40m Depth)

(Cost: Peso)

Description	Qty.	Unit	Unit Cost	Amount
A. Mobilization/Demobilization/Site Preparation		LS		52,000
B. Drilling of Well & Installation of Steel Casing/Screen				
1. Materials				
(1) 100mm x 3m Steel Casing with coupling	11	pcs.	2,846	31,306
(2) 100mm x 3m Steel Casing with one end closed	1	pc.	2,997	2,997
(3) 100mm x 3m Low Carbon Steel Screen	2	pcs.	4,667	9,334
(4) Casing Centralizer	2	set	1,925	3,850
2. Labor, Fuel, Lubricant and others				
Well Drilling for 40 m depth at 200mm borehole	40	m	2,500	100,000
3. Borehole Logging	1	no	16,000	16,000
4. Freight Cost (10% of Materials)		LS		4,749
Sub-Total of B				168,236
C. Well Development and Pumping Test				
Well Development	24	hr.	5,500	132,000
Pumping Test	6	hr.	5,000	30,000
Sub-Total of C				162,000
D. Gravel Packing, Installation of Handpump and Construction of Platform				
1. Materials				
(1) Improved Deep Well Cylinder Pump (Afridev Type)	1	set	11,815	11,815
(2) 63mm x 6m Riser Pipe and Pump Rod	6	pcs.	1,880	11,280
(3) #10 Sieved Gravel	1	cu.m	1,026	1,026
(4) Coarse Sand	1	cu.m	359	359
(5) Cement for Sanitary Seal	4	bags	127	508
(6) Pump Base and Platform				
1) Cement	4	bags	127	508
2) Gravel	2	cu.m	454	908
3) Sand	1	cu.m	359	359
4) Plywood (1,200mm x 2,400mm x 6mm)	1	pc.	294	294
5) Form Lumber (50mm x 75mm x 1,800mm)	6	pcs.	52	312
6) Nail	1	kg.	40	40
Sub-Total of D-1				27,409
2. Labor (40% of D-1.)				10,964
3. Freight Cost (10% of Materials)		LS		2,741
Sub-Total of D				41,114
E. Indirect Cost				
Profit (10% of A, B, C & D)				42,335
Overhead Expense (13% of A, B, C & D)				55,036
VAT (10% of Labor, Profit & Overhead Expense)				20,834
Sub-Total of E				63,169
Total of Construction Cost (A+B+C+D+E)				354,519
F. Estimated Government Expenses				
1. Preliminary & Detailed Engineering Cost		LS		3,600
2. Construction Supervision		LS		2,400
3. Water Quality Analysis		LS		1,400
Sub-Total of F				7,400
GRAND TOTAL				361,919
SAY				361,900

Note: LS - Lump Sum
Source: DPWH standard price in 1994 & LWUA Water Supply Feasibility Study Methodology Manual 1998
Unit Cost: Adjusted to 1998 Price Level

Table 10.2.2 (b) Unit Cost of Level I (Natural Gravel packed Deep Well - 40m Depth)

(Cost: Peso)

Description	Qty.	Unit	Unit Cost	Amount
A. Mobilization/Demobilization		**LS**		**52,000**
B. Drilling of Well & Installation of Steel Casing/Screen				
1. Materials				
(1) 100mm x 3m Steel Casing with coupling	11	pcs.	2,846	31,306
(2) 100mm x 3m Steel Casing with one end closed	1	pc.	2,997	2,997
(3) 100mm x 3m Low Carbon Steel Screen	2	pcs.	4,667	9,334
(4) Casing Centralizer	0	set	1,925	0
2. Labor, Fuel, Lubricant and others				
Well Drilling for 40 m depth at 150mm borehole	40	m	1,600	64,000
3. Borehole Logging	1	no	16,000	16,000
4. Freight Cost (10% of Materials)		LS		4,364
Sub-Total of B				**128,001**
C. Well Development and Pumping Test				
Well Development	12	hr.	5,500	66,000
Pumping Test	6	hr.	5,000	30,000
Sub-Total of C				**96,000**
D. Gravel Packing, Installation of Handpump and Construction of Platform				
1. Materials				
(1) Improved Deep Well Cylinder Pump (Afridev Type)	1	set	11,815	11,815
(2) 63mm x 6m Riser Pipe and Pump Rod	6	pcs.	1,880	11,280
(3) #10 Sieved Gravel	0	cu.m	1,026	0
(4) Coarse Sand	1	cu.m	359	359
(5) Cement for Sanitary Seal	3	bags	127	381
(6) Pump Base and Platform				
1) Cement	4	bags	127	508
2) Gravel	2	cu.m	454	908
3) Sand	1	cu.m	359	359
4) Plywood (1,200mm x 2,400mm x 6mm)	1	pc.	294	294
5) Form Lumber (50mm x 75mm x 1,800mm)	6	pcs.	52	312
6) Nail	1	kg.	40	40
Sub-Total of D-1				26,250
2. Labor (40% of D-1.)				10,502
3. Freight Cost (10% of Materials)		LS		2,626
Sub-Total of D				**39,384**
E. Indirect Cost				
Profit (10% of A, B, C & D)				31,539
Overhead Expense (13% of A, B, C & D)				41,000
VAT (10% of Labor, Profit & Overhead Expense)				14,704
Sub-Total of E				**46,243**
Total of Construction Cost (A+B+C+D+E)				**295,628**
F. Estimated Government Expenses				
1. Preliminary & Detailed Engineering Cost		LS		3,600
2. Construction Supervision		LS		2,400
3. Water Quality Analysis		LS		1,400
Sub-Total of F				**7,400**
GRAND TOTAL				**303,028**
SAY				**303,000**

Note: LS - Lump Sum
Source: DPWH standard price in 1994 & LWUA Water Supply Feasibility Study Methodology Manual 1998
Unit Cost: Adjusted to 1998 Price Level

Table 10.2.2(c) Unit Cost of Level I (Gravel Packed Deep Well - 40m Depth) for Acid Water

(Cost: Peso)

Description	Qty.	Unit	Unit Cost	Amount
A. Mobilization/Demobilization/Site Preparation		LS		**52,000**
B. Drilling of Well & Installation of Steel Casing/Screen				
1. Materials				
(1) 100mm x 3m PVC Casing with Socket	11	pcs.	2,038	22,418
(2) 100mm x 3m PVC Casing with Plug	1	pc.	980	980
(3) 100mm x 3m Stainless Steel Screen	2	pcs.	12,700	25,400
(4) Casing Centralizer	2	set	1,925	3,850
2. Labor, Fuel, Lubricant and others				
Well Drilling for 40 m depth at 200mm borehole	40	m	2,500	100,000
3. Borehole Logging	1	no	16,000	16,000
4. Freight Cost (10% of Materials)		LS		5,265
Sub-Total of B				**173,913**
C. Well Development and Pumping Test				
Well Development	24	hr.	5,500	132,000
Pumping Test	6	hr.	5,000	30,000
Sub-Total of C				**162,000**
D. Gravel Packing, Installation of Handpump and				
1. Materials				
(1) Improved Deep Well Cylinder Pump (Afridev Type)	1	set	11,815	11,815
(2) 63mm x 3m PVC Riser Pipe and SUS Pump Rod	12	pcs.	2,450	29,400
(3) #10 Sieved Gravel	1	cu.m	1,026	1,026
(4) Coarse Sand	1	cu.m	359	359
(5) Cement for Sanitary Seal	4	bags	127	508
(6) Pump Base and Platform				
1) Cement	4	bags	127	508
2) Gravel	2	cu.m	454	908
3) Sand	1	cu.m	359	359
4) Plywood (1,200mm x 2,400mm x 6mm)	1	pc.	294	294
5) Form Lumber (50mm x 75mm x 1,800mm)	6	pcs.	52	312
6) Nail	1	kg.	40	40
Sub-Total of D-1				45,529
2. Labor (40% of D-1.)				18,212
3. Freight Cost (10% of Materials)		LS		4,553
Sub-Total of D				**68,294**
E. Indirect Cost				
Profit (10% of A, B, C & D)				45,621
Overhead Expense (13% of A, B, C & D)				59,307
VAT (10% of Labor, Profit & Overhead Expense)				22,314
Sub-Total of E				**67,935**
Total of Construction Cost (A+B+C+D+E)				**392,142**
F. Estimated Government Expenses				
1. Preliminary & Detailed Engineering Cost		LS		3,600
2. Construction Supervision		LS		2,400
3. Water Quality Analysis		LS		1,400
Sub-Total of F				**7,400**
GRAND TOTAL				**399,542**
SAY				**399,500**

Note: LS - Lump Sum
Source: DPWH standard price in 1994 & LWUA Water Supply Feasibility Study Methodology Manual 1998
Unit Cost: Adjusted to 1998 Price Level

Table 10.2.3 (a) Unit Cost of Level I (Gravel Packed Deep Well - 80m Depth)

(Cost: Peso)

Description	Qty.	Unit	Unit Cost	Amount
A. Mobilization/Demobilization/Site Preparation		LS		54,000
B. Drilling of Well & Installation of Steel Casing/Screen				
1. Materials				
(1) 100mm x 3m Steel Casing with coupling	24	pcs.	2,846	68,304
(2) 100mm x 3m Steel Casing with one end closed	1	pc.	2,997	2,997
(3) 100mm x 3m Low Carbon Steel Screen	2	pcs.	4,667	9,334
(4) Casing Centralizer	2	set	1,925	3,850
2. Labor, Fuel, Lubricant and others				
Well Drilling for 40 m depth at 200mm borehole	80	m	2,500	200,000
3. Borehole Logging	1	no	18,000	18,000
4. Freight Cost (10% of Materials)		LS		8,449
Sub-Total of B				**310,934**
C. Well Development and Pumping Test				
Well Development	24	hr.	5,500	132,000
Pumping Test	6	hr.	5,000	30,000
Sub-Total of C				**162,000**
D. Gravel Packing, Installation of Handpump and Construction of Platform				
1. Materials				
(1) Improved Deep Well Cylinder Pump (Afridev Type)	1	set	11,815	11,815
(2) 63mm x 6m Riser Pipe and Pump Rod	8	pcs.	1,880	15,040
(3) #10 Sieved Gravel	1	cu.m	1,026	1,026
(4) Coarse Sand	1	cu.m	359	359
(5) Cement for Sanitary Seal	4	bags	127	508
(6) Pump Base and Platform				
1) Cement	4	bags	127	508
2) Gravel	2	cu.m	454	908
3) Sand	1	cu.m	359	359
4) Plywood (1,200mm x 2,400mm x 6mm)	1	pc.	294	294
5) Form Lumber (50mm x 75mm x 1,800mm)	6	pcs.	52	312
6) Nail	1	kg.	40	40
Sub-Total of D-1				31,169
2. Labor (40% of D-1.)				12,468
3. Freight Cost (10% of Materials)		LS		3,117
Sub-Total of D				**46,754**
E. Indirect Cost				
Profit (10% of A, B, C & D)				57,369
Overhead Expense (13% of A, B, C & D)				74,579
VAT (10% of Labor, Profit & Overhead Expense)				34,442
Sub-Total of E				**91,811**
Total of Construction Cost (A+B+C+D+E)				**533,499**
F. Estimated Government Expenses				
1. Preliminary & Detailed Engineering Cost		LS		3,600
2. Construction Supervision		LS		2,400
3. Water Quality Analysis		LS		1,400
Sub-Total of F				**7,400**
GRAND TOTAL				**540,899**
SAY				**540,900**

Note: LS - Lump Sum
Source: DPWH standard price in 1994 & LWUA Water Supply Feasibility Study Methodology Manual 1998
Unit Cost: Adjusted to 1998 Price Level

Table 10.2.3 (b) Unit Cost of Level I (Natural Gravel Packed Deep Well - 80m Depth)

(Cost: Peso)

Description	Qty.	Unit	Unit Cost	Cost
A. Mobilization/Demobilization/Site Preparation		LS		54,000
B. Drilling of Well & Installation of Steel Casing/Screen				
1. Materials				
(1) 100mm x 3m Steel Casing with coupling	24	pcs.	2,846	68,304
(2) 100mm x 3m Steel Casing with one end closed	1	pc.	2,997	2,997
(3) 100mm x 3m Low Carbon Steel Screen	2	pcs.	4,667	9,334
(4) Casing Centralizer	0	set	1,925	0
2. Labor, Fuel, Lubricant and others				
Well Drilling for 80 m depth at 150mm borehole	80	m	1,600	128,000
3. Borehole Logging	1	no	18,000	18,000
4. Freight Cost (10% of Materials)		LS		8,064
Sub-Total of B				**234,699**
C. Well Development and Pumping Test				
Well Development	12	hr.	5,500	66,000
Pumping Test	6	hr.	5,000	30,000
Sub-Total of C				**96,000**
D. Gravel Packing, Installation of Handpump and Construction of Platform				
1. Materials				
(1) Improved Deep Well Cylinder Pump (Afridev Type)	1	set	11,815	11,815
(2) 63mm x 6m Riser Pipe and Pump Rod	8	pcs.	1,880	15,040
(3) #10 Sieved Gravel	0	cu.m	1,026	0
(4) Coarse Sand	1	cu.m	359	359
(5) Cement for Sanitary Seal	3	bags	127	381
(6) Pump Base and Platform				
1) Cement	4	bags	127	508
2) Gravel	2	cu.m	454	908
3) Sand	1	cu.m	359	359
4) Plywood (1,200mm x 2,400mm x 6mm)	1	pc.	294	294
5) Form Lumber (50mm x 75mm x 1,800mm)	6	pcs.	52	312
6) Nail	1	kg.	40	40
Sub-Total of D-1				30,016
2. Labor (40% of D-1.)				12,006
3. Freight Cost (10% of Materials)		LS		3,002
Sub-Total of D				**45,024**
E. Indirect Cost				
Profit (10% of A, B, C & D)				42,972
Overhead Expense (13% of A, B, C & D)				55,864
VAT (10% of Labor, Profit & Overhead Expense)				23,884
Sub-Total of E				**66,856**
Total of Construction Cost (A+B+C+D+E)				**430,579**
F. Estimated Government Expenses				
1. Preliminary & Detailed Engineering Cost		LS		3,600
2. Construction Supervision		LS		2,400
3. Water Quality Analysis		LS		1,400
Sub-Total of F				**7,400**
GRAND TOTAL				**437,979**
SAY				**438,000**

Note: LS - Lump Sum
Source: DPWH standard price in 1994 & LWUA Water Supply Feasibility Study Methodology Manual 1998
Unit Cost: Adjusted to 1998 Price Level

Table 10.2.3 (c) Unit Cost of Level I (Gravel Packed Deep Well - 80m Depth) for Acid Water

(Cost: Peso)

Description	Qty.	Unit	Unit Cost	Cost
A. Mobilization/Demobilization/Site Preparation		LS		54,000
B. Drilling of Well & Installation of Steel Casing/Screen				
1. Materials				
(1) 100mm x 3m PVC Casing with Socket	24	pcs.	2,038	48,912
(2) 100mm x 3m PVC Casing with Plug	1	pc.	980	980
(3) 100mm x 3m Stainless Steel Screen	2	pcs.	12,700	25,400
(4) Casing Centralizer	2	set	1,925	3,850
2. Labor, Fuel, Lubricant and others				
Well Drilling for 40 m depth at 200mm borehole	80	m	2,500	200,000
3. Borehole Logging	1	no	18,000	18,000
4. Freight Cost (10% of Materials)		LS		7,914
Sub-Total of B				**305,056**
C. Well Development and Pumping Test				
Well Development	24	hr.	5,500	132,000
Pumping Test	6	hr.	5,000	30,000
Sub-Total of C				**162,000**
D. Gravel Packing, Installation of Handpump and Construction of Platform				
1. Materials				
(1) Improved Deep Well Cylinder Pump (Afridev Type)	1	set	11,815	11,815
(2) 63mm x 3m PVC Riser Pipe and SUS Pump Rod	16	pcs.	2,450	39,200
(3) #10 Sieved Gravel	1	cu.m	1,026	1,026
(4) Coarse Sand	1	cu.m	359	359
(5) Cement for Sanitary Seal	4	bags	127	508
(6) Pump Base and Platform				
1) Cement	4	bags	127	508
2) Gravel	2	cu.m	454	908
3) Sand	1	cu.m	359	359
4) Plywood (1,200mm x 2,400mm x 6mm)	1	pc.	294	294
5) Form Lumber (50mm x 75mm x 1,800mm)	6	pcs.	52	312
6) Nail	1	kg.	40	40
Sub-Total of D-1				55,329
2. Labor (40% of D-1.)				22,132
3. Freight Cost (10% of Materials)		LS		5,533
Sub-Total of D				**82,994**
E. Indirect Cost				
Profit (10% of A, B, C & D)				60,405
Overhead Expense (13% of A, B, C & D)				78,527
VAT (10% of Labor, Profit & Overhead Expense)				36,106
Sub-Total of E				**96,511**
Total of Construction Cost (A+B+C+D+E)				**568,561**
F. Estimated Government Expenses				
1. Preliminary & Detailed Engineering Cost		LS		3,600
2. Construction Supervision		LS		2,400
3. Water Quality Analysis		LS		1,400
Sub-Total of F				**7,400**
GRAND TOTAL				**575,961**
SAY				**576,000**

Note: LS - Lump Sum
Source: DPWH standard price in 1994 & LWUA Water Supply Feasibility Study Methodology Manual 1998
Unit Cost: Adjusted to 1998 Price Level

Table 10.2.4 (a) Unit Cost of Level I (Gravel Packed Deep Well - 120m Depth)

(Cost: Peso)

Description	Qty.	Unit	Unit Cost	Amount
A. Mobilization/Demobilization/Site Preparation		LS		56,000
B. Drilling of Well & Installation of Steel Casing/Screen				
1. Materials				
(1) 100mm x 3m Steel Casing with coupling	37	pcs.	2,846	105,302
(2) 100mm x 3m Steel Casing with one end closed	1	pc.	2,997	2,997
(3) 100mm x 3m Low Carbon Steel Screen	2	pcs.	4,667	9,334
(4) Casing Centralizer	2	set	1,925	3,850
2. Labor, Fuel, Lubricant and others				
Well Drilling for 120 m depth at 200mm borehole	120	m	2,500	300,000
3. Borehole Logging	1	no	20,000	20,000
4. Freight Cost (10% of Materials)		LS		12,148
Sub-Total of B				453,631
C. Well Development and Pumping Test				
Well Development	24	hr.	5,500	132,000
Pumping Test	6	hr.	5,000	30,000
Sub-Total of C				162,000
D. Gravel Packing, Installation of Handpump and Construction of Platform				
1. Materials				
(1) Improved Deep Well Cylinder Pump (Afridev Type)	1	set	11,815	11,815
(2) 63mm x 6m Riser Pipe and Pump Rod	10	pcs.	1,880	18,800
(3) #10 Sieved Gravel	1	cu.m	1,026	1,026
(4) Coarse Sand	1	cu.m	359	359
(5) Cement for Sanitary Seal	4	bags	127	508
(6) Pump Base and Platform				
1) Cement	4	bags	127	508
2) Gravel	2	cu.m	454	908
3) Sand	1	cu.m	359	359
4) Plywood (1,200mm x 2,400mm x 6mm)	1	pc.	294	294
5) Form Lumber (50mm x 75mm x 1,800mm)	6	pcs.	52	312
6) Nail	1	kg.	40	40
Sub-Total of D-1				34,929
2. Labor (40% of D-1.)				13,972
3. Freight Cost (10% of Materials)		LS		3,493
Sub-Total of D				52,394
E. Indirect Cost				
Profit (10% of A, B, C & D)				72,403
Overhead Expense (13% of A, B, C & D)				94,123
VAT (10% of Labor, Profit & Overhead Expense)				48,050
Sub-Total of E				120,453
Total of Construction Cost (A+B+C+D+E)				712,478
F. Estimated Government Expenses				
1. Preliminary & Detailed Engineering Cost		LS		3,600
2. Construction Supervision		LS		2,400
3. Water Quality Analysis		LS		1,400
Sub-Total of F				7,400
GRAND TOTAL				719,878
SAY				719,900

Note: LS - Lump Sum
Source: DPWH standard price in 1994 & LWUA Water Supply Feasibility Study Methodology Manual 1998
Unit Cost: Adjusted to 1998 Price Level

Table 10.2.4 (b) Unit Cost of Level I (Natural Gravel Packed Deep Well - 120m Depth)

(Cost: Peso)

Description	Qty.	Unit	Unit Cost	Cost
A. Mobilization/Demobilization/Site Preparation		LS		56,000
B. Drilling of Well & Installation of Steel Casing/Screen				
1. Materials				
(1) 100mm x 3m Steel Casing with coupling	37	pcs.	2,846	105,302
(2) 100mm x 3m Steel Casing with one end closed	1	pc.	2,997	2,997
(3) 100mm x 3m Low Carbon Steel Screen	2	pcs.	4,667	9,334
(4) Casing Centralizer	0	set	1,925	0
2. Labor, Fuel, Lubricant and others				
Well Drilling for 120 m depth at 150mm borehole	120	m	1,600	192,000
3. Borehole Logging	1	no	20,000	20,000
4. Freight Cost (10% of Materials)		LS		11,763
Sub-Total of B				**341,396**
C. Well Development and Pumping Test				
Well Development	12	hr.	5,500	66,000
Pumping Test	6	hr.	5,000	30,000
Sub-Total of C				**96,000**
D. Gravel Packing, Installation of Handpump and Construction of Platform				
1. Materials				
(1) Improved Deep Well Cylinder Pump (Afridev Type)	1	set	11,815	11,815
(2) 63mm x 6m Riser Pipe and Pump Rod	10	pcs.	1,880	18,800
(3) #10 Sieved Gravel	0	cu.m	1,026	0
(4) Coarse Sand	1	cu.m	359	359
(5) Cement for Sanitary Seal	3	bags	127	381
(6) Pump Base and Platform				
1) Cement	4	bags	127	508
2) Gravel	2	cu.m	454	908
3) Sand	1	cu.m	359	359
4) Plywood (1,200mm x 2,400mm x 6mm)	1	pc.	294	294
5) Form Lumber (50mm x 75mm x 1,800mm)	6	pcs.	52	312
6) Nail	1	kg.	40	40
Sub-Total of D-1				33,776
2. Labor (40% of D-1.)				13,510
3. Freight Cost (10% of Materials)		LS		3,378
Sub-Total of D				**50,664**
E. Indirect Cost				
Profit (10% of A, B, C & D)				54,406
Overhead Expense (13% of A, B, C & D)				70,728
VAT (10% of Labor, Profit & Overhead Expense)				33,064
Sub-Total of E				**87,470**
Total of Construction Cost (A+B+C+D+E)				**565,530**
F. Estimated Government Expenses				
1. Preliminary & Detailed Engineering Cost		LS		3,600
2. Construction Supervision		LS		2,400
3. Water Quality Analysis		LS		1,400
Sub-Total of F				**7,400**
GRAND TOTAL				**572,930**
SAY				**572,900**

Note: LS - Lump Sum
Source: DPWH standard price in 1994 & LWUA Water Supply Feasibility Study Methodology Manual 1998
Unit Cost: Adjusted to 1998 Price Level

Table 10.2.4(c) Unit Cost of Level I (Gravel Packed Deep Well - 120m Depth) for Acid Water

(Cost: Peso)

ription	Quantity	Unit	Unit Cost	Cost
A. Mobilization/Demobilization/Site Preparation		LS		56,000
B. Drilling of Well & Installation of Steel Casing/Screen				
1. Materials				
(1) 100mm x 3m PVC Casing with Socket	37	pcs.	2,038	75,406
(2) 100mm x 3m PVC Casing with Plug	1	pc.	980	980
(3) 100mm x 3m Stainless Steel Screen	2	pcs.	12,700	25,400
(4) Casing Centralizer	2	set	1,925	3,850
2. Labor, Fuel, Lubricant and others				
Well Drilling for 120 m depth at 200mm borehole	120	m	2,500	300,000
3. Borehole Logging	1	no	20,000	20,000
4. Freight Cost (10% of Materials)		LS		10,564
Sub-Total of B				**436,200**
C. Well Development and Pumping Test				
Well Development	24	hr.	5,500	132,000
Pumping Test	6	hr.	5,000	30,000
Sub-Total of C				**162,000**
D. Gravel Packing, Installation of Handpump and Construction of Platform				
1. Materials				
(1) Improved Deep Well Cylinder Pump (Afridev Type)	1	set	11,815	11,815
(2) 63mm x 3m PVC Riser Pipe and SUS Pump Rod	20	pcs.	2,450	49,000
(3) #10 Sieved Gravel	1	cu.m	1,026	1,026
(4) Coarse Sand	1	cu.m	359	359
(5) Cement for Sanitary Seal	4	bags	127	508
(6) Pump Base and Platform				
1) Cement	4	bags	127	508
2) Gravel	2	cu.m	454	908
3) Sand	1	cu.m	359	359
4) Plywood (1,200mm x 2,400mm x 6mm)	1	pc.	294	294
5) Form Lumber (50mm x 75mm x 1,800mm)	6	pcs.	52	312
6) Nail	1	kg.	40	40
Sub-Total of D-1				65,129
2. Labor (40% of D-1.)				26,052
3. Freight Cost (10% of Materials)		LS		6,513
Sub-Total of D				**97,694**
E. Indirect Cost				
Profit (10% of A, B, C & D)				75,189
Overhead Expense (13% of A, B, C & D)				97,746
VAT (10% of Labor, Profit & Overhead Expense)				49,899
Sub-Total of E				**125,088**
Total of Construction Cost (A+B+C+D+E)				**744,982**
F. Estimated Government Expenses				
1. Preliminary & Detailed Engineering Cost		LS		3,600
2. Construction Supervision		LS		2,400
3. Water Quality Analysis		LS		1,400
Sub-Total of F				**7,400**
GRAND TOTAL				**752,382**
SAY				**752,400**

Note: LS - Lump Sum
Source: DPWH standard price in 1994 & LWUA Water Supply Feasibility Study Methodology Manual 1998
Unit Cost: Adjusted to 1998 Price Level

Table 10.2.5 Unit Cost of Level I (Deep Well Rehabilitation)

(Cost: Peso)

Description	Q'ty	Unit	Unit Cost	Amount
A. Mobilization/Demobilization		LS		8,000
B. Well Rehabilitation				
1. Materials				
(1) Cylinder Pump Set	1	set	9,570	9,570
(2) Cement for Surface Sealing	4	bags	127	508
(3) Pump Base and Platform				
1) Cement	4	bags	127	508
2) Gravel	2	cu.m	454	908
3) Sand	1	cu.m	359	359
4) Plywood (4' x 8' x 1/4")	1	pc.	294	294
5) Form Lumber (2" x 3" x 6")	6	pcs.	52	312
6) Nail	1	kg.	40	40
Sub-Total of B-1				12,499
2. Labor (40% of B-1)				5,000
3. Freight Cost (10% of Materials)				1,250
Sub-Total of B				**18,749**
C. Well Development		LS		31,000
D. Indirect Cost				
Profit (10% of A, B & C)				5,775
Overhead Expense (13% of A, B & C)				7,507
VAT (10% of Profit & Labor)				4,178
Sub-Total of D				**17,460**
Total of Construction Cost (A+B+C+D)				**75,209**
E. Estimated Government Expenses				
1. Preliminary & Detailed Engineering Cost		LS		1,300
2. Supervision		LS		800
3. Water Quality Analysis		LS		1,400
Sub-Total of E				**3,500**
GRAND TOTAL				**78,709**
SAY				**78,700**

Note: LS - Lump Sum

Source: DPWH standard price in 1994

Unit Cost: Adjusted to 1998 Price Level

Table 10.2.6 Unit Cost of Level I (Shallow Well - 18m Depth)

(Cost: Peso)

Description	Q'ty	Unit	Unit Cost	Amount
A. Mobilization/Demobilization		LS		20,000
B. Drilling of Well & Installation of Steel Casing/Screen				
1. Materials				
(1) 63mm x 6m PVC Pipe with socket	2	pcs.	912	1,824
(2) 63mm x 3m PVC Pipe with plug	1	pc.	452	452
(3) 63mm PVC Socket	1	pc.	12	12
(4) 63mm x 3m PVC Screen	1	pc.	1,443	1,443
(5) Casing Centralizer	2	set	725	1,450
2. Labor, Fuel, Lubricant and others				
Well Drilling for 18 m depth at 150mm borehole	18	m	1,600	28,800
3. Freight Cost (10% of Materials)		LS		373
Sub-Total of B				**34,354**
C. Well Development	4	hr.	2,000	8,000
D. Gravel Packing, Installation of Handpump and Construction of Platform				
1. Materials				
(1) 50mm Jetmatic Handpump	1	set	2,807	2,807
(2) 50mm Riser Pipe and Foot Valve	1	pc.	118	118
(3) #10 Sieved Gravel	0.1	cu.m	1,026	103
(4) Coarse Sand	0.07	cu.m	359	25
(5) Cement for Sanitary Seal	4	bag	127	508
(6) Pump Base and Platform				
1) Cement	4	bags	127	508
2) Gravel	1	cu.m	454	454
3) Sand	1	cu.m	359	359
4) Plywood (1,200mm x 2,400mm x 6mm)	1	pc.	294	294
5) Form Lumber (50mm x 75mm x 1,800 mm)	1	pc.	52	52
6) Nail	1	kg.	40	40
Sub-Total of D-1				5,268
2. Labor (40% of D-1.)				2,107
3. Freight Cost (10% of Materials)		LS		527
Sub-Total of D				**7,902**
E. Indirect Cost				
Profit (10% of A to D)				7,026
Overhead Expense (13% of A to D)				9,133
VAT (10% of Profit & Overhead Expense)				1,616
Sub-Total of E				**8,642**
Total of Construction Cost (A+B+C+D+E)				**78,898**
F. Estimated Government Expenses				
1. Preliminary & Detailed Engineering Cost		LS		1,300
2. Construction Supervision		LS		800
3. Water Quality Analysis		LS		1,400
Sub-Total of F				**3,500**
GRAND TOTAL				**82,398**
SAY				**82,400**

Note: LS - Lump Sum

Source: DPWH standard price in 1994 & LWUA Water Supply Feasibility Study Methodology Manual 1998

Unit Cost: Adjusted to 1998 Price Level

Table 10.2.7 Unit Cost of Level I (Spring Development)

(Cost: Peso)

Description	Q'ty	Unit	Unit Cost	Amount
A. Mobilization/Demobilization		LS		**24,000**
B. Construction of Spring Box				
1. Materials		LS		42,700
2. Labor (35% of 1.)		LS		14,945
3. Freight Cost (10% of Materials)		LS		4,270
Sub-Total of B				**61,915**
C. Installation of Pipelines & Fittings				
1. Transmission Materials				
63mm dia. PVC Pipe (Class 12.5 with socket)	330	pcs.	959	316,470
63mm dia. Tee	1	no.	172	172
Solvent Cement	26	cans	140	3,640
63mm dia. Elbow (90 deg.)	3	nos.	89	267
63mm dia. Elbow (45 deg.)	1	pc.	99	99
50mm dia. Gate Valve	2	pcs.	900	1,800
50mm dia. x 1m Stand Pipe	1	pc.	177	177
63mm x 50mm GI Nipple	1	pc.	123	123
50mm dia. Union Patent	3	pcs.	192	576
63mm x 50mm dia. Reducing Socket	2	pcs.	113	226
50mm dia. GI Elbow (90 deg.)	2	pcs.	79	158
63mm x 50mm dia. Socket Adapter	2	pcs.	167	334
50mm dia. GI Gate Valve	2	pcs.	791	1,582
13mm dia. Brass Faucet	2	pcs.	59	118
Sub-Total of Materials				325,624
Labor (35% of Material Cost)		LS		113,968
Freight Cost (10% of Materials)		LS		32,562
Sub-Total of C				**472,154**
D. Indirect Cost				
1. Transmission Main				
Profit (10% of C)				47,215
Overhead Expense (13% of C)				61,380
VAT (10% of Profit, Overhead Expense & Labor)				22,256
2. Source Facilities				
Profit (10% of A, B)				25,775
Overhead Expense (13% of A, B)				8,592
VAT (10% of Profit, Overhead Expense & Labor)				4,931
Sub-Total of D				**170,149**
Total Construction Cost (A+B+C+D)				**728,218**
E. Estimated Government Expenses				
1. Preliminary & Detailed Engineering and RWSA Formation		LS		2,400
2. Supervision		LS		15,000
3. Water Quality Analysis		LS		1,400
Sub-Total of E				**18,800**
GRAND TOTAL				**747,018**
SAY				**747,000**

Note: LS - Lump Sum

Source:
DPWH standard price in 1994
LWUA Water Supply Feasibility Study Methodology Manual 1998

Unit Cost: Adjusted to 1998 Price Level

Table 10.2.8 Unit Cost of Level II (600 Service Population)

Sheet 1 of 2 (Cost: Peso)

Description	Q'ty	Unit	Unit Cost	Amount
A. Mobilization/Demobilization		LS		36,000
B. Construction of Spring Box & Ground Reservoir				
1. Materials		LS		128,000
2. Labor (35% of 1.)		LS		44,800
3. Freight Cost (10% of Materials)		LS		12,800
Sub-Total of B				**185,600**
C. Installation of Pipelines & Fittings				
1. Transmission Pipeline Materials				
63mm dia. PVC Pipe (Class 12.5 with socket)	500	pcs.	959	479,500
63mm dia. Tee	1	no.	172	172
Solvent Cement	40	cans	140	5,600
63mm dia. x 50mm Nipple	3	nos.	159	477
63mm dia. Union Patent	1	pc.	203	203
63mm dia. x 50mm dia. Reducing Socket	2	pcs.	123	246
63mm dia. Elbow (90 deg.)	1	pc.	89	89
63mm dia. Elbow (45 deg.)	1	pc.	99	99
63mm dia. Gate Valve	3	pcs.	1,320	3,960
Sub-Total of Materials				490,346
Labor (35% of Material Cost)		LS		171,621
Freight Cost (10% of Materials)		LS		49,035
Sub-Total of Transmission Main				711,002
2. Distribution Pipeline Materials				
50mm dia. PVC Pipe (Class 12.5 with socket)	20	pcs.	531	10,620
38mm dia. PVC Pipe (Class 12.5 with socket)	30	pcs.	353	10,590
20mm dia. PVC Pipe (Class 40 with socket)	10	pcs.	118	1,180
13mm dia. x 1 m Stand Pipe	10	pcs.	110	1,100
Solvent Cement	4	cans	140	560
Fittings				
a. 50mm dia. x 150mm PVC Nipple	3	pcs.	147	441
b. 32mm dia. x 150mm PVC Nipple	3	pcs.	89	267
c. 13mm dia. x 150mm GI Nipple	40	pcs.	29	1,160
d. 50mm dia. Union Patent	1	pcs.	192	192
e. 32mm dia. Union Patent	2	pcs.	83	166
f. 13mm dia. Union Patent	10	pcs.	29	290
g. 50mm dia. x 32mm dia. Reducing Socket	6	pcs.	106	636
h. 32mm dia. x 20mm dia. Reducing Socket	10	pcs.	82	820
i. 20mm dia. x 13mm dia. Reducing Socket	10	pcs.	64	640
j. 50mm dia. PVC Elbow (90 deg.)	2	pcs.	64	128
k. 13mm dia. GI Elbow (90 deg.)	20	pcs.	15	300
l. 20mm dia. x 13mm dia. Socket Adapter	10	pcs.	48	480
m. 50mm dia. GI Gate Valve	2	pcs.	791	1,582
n. 32mm dia. GI Gate Valve	2	pcs.	447	894
o. 13mm dia. GI Gate Valve	24	pcs.	271	6,504
p. 13mm dia. Brass Faucet	24	pcs.	59	1,416
q. 50mm dia. Tee	4	pcs.	153	612
r. 32mm dia. Tee	6	pcs.	129	774
s. Water Meter	24	pcs.	1,004	24,096
t. Water Meter Box	24	pcs.	1,297	31,128
Sub-Total of Materials				96,576

Table 10.2.8 Unit Cost of Level II (600 Service Population)

Sheet 2 of 2 (Cost: Peso)

Description	Q'ty	Unit	Unit Cost	Amount
Labor (35% of Material Cost)		LS		33,802
Freight Cost (10% of Materials)		LS		9,658
Sub-Total of Distribution Pipeline				140,036
Sub-Total of C				**851,038**
D. Indirect Cost				
1. Transmission Main				
Profit (10% of C-1)		LS		71,100
Overhead Expense (13% of C-1)		LS		92,430
VAT (10% of Profit, Overhead Expense and Labor)		LS		33,515
2. Source Facilities and Distribution Pipeline				
Profit (10% of A, B, C-2)		LS		36,164
Overhead Expense (13% of A, B and C-2)		LS		47,013
VAT (10% of Profit, Overhead Expense and Labor)		LS		16,178
Sub-Total of D				**296,400**
Total Construction Cost (A+B+C+D)				**1,369,038**
E. Estimated Government Expenses				
1. Preliminary & Detailed Engineering and RWSA Formation		LS		2,400
2. Supervision		LS		15,000
3. Water Quality Analysis		LS		1,400
Sub-Total of E				**18,800**
Total Estimated Cost				**1,387,838**
Unit Cost per Person Served				**2,313**
SAY				**2,300**

Note: LS - Lump Sum
Source:
DPWH standard price in 1994
LWUA Water Supply Feasibility Study Methodology Manual 1998
Unit Cost: Adjusted to 1998 Price Level

Table 10.2.9 Unit Cost of Level III (5,000 Service Population)

(Cost: Peso)

Description	Q'ty	Unit	Unit Cost	Amount
A. Mobilization/Demobilization		LS		360,000
B. Source Development and Storage				
1. Deep Well	1	No.	2,001,000	2,001,000
2. Deep Well Pump	1	No.	832,000	832,000
3. Chlorinator House & Equipment	1	LS	632,000	632,000
4. Storage Tank (250 cu.m)	1	No.	1,300,000	1,300,000
Sub-Total of B				4,765,000
C. Transmission Main				
1. 160mm dia.	500	LM	1,320	660,000
Sub-Total of C				660,000
D. Distribution Main				
1. 160mm dia.	1,000	LM	1,320	1,320,000
2. 110mm dia.	3,000	LM	1,090	3,270,000
3. 90mm dia.	3,000	LM	684	2,052,000
4. 75mm dia.	6,000	LM	637	3,822,000
Sub-Total of D				10,464,000
E. Service Connections	1,000	Nos.	2,288	2,288,000
F. Miscellaneous				
1. Vehicle	1	No.	649,000	649,000
2. Office & Workshop Bldg.	1	No.	645,000	645,000
3. Office Equipment	1	LS	118,000	118,000
4. Tools and Spare Parts	1	LS	110,000	110,000
Sub-Total of F				1,522,000
Total Direct Cost (A+B+C+D+E+F)				20,059,000
G. Indirect Cost (25% of Direct Cost)				5,014,750
Total Estimated Cost				25,073,750
Unit Cost per Person Served				
For New Construction				5,015
			SAY	5,000
For Expansion of Existing System (Exclude F.)				4,634
			SAY	4,600

Note: LS - Lump Sum
Cost of spring development includes additional transmission main, but it shall be confirmed by survey in the implementation stage.
Source: LWUA standard price in 1994
Unit Cost: Adjusted to 1998 Price Level

Table 10.2.10 Unit Cost of Level III (10,000 Service Population)

(Cost: Peso)

Description	Q'ty	Unit	Unit Cost	Amount
A. Mobilization/Demobilization		LS		360,000
B. Source Development and Storage				
1. Deep Well	1	No.	2,001,000	2,001,000
2. Deep Well Pump	1	No.	832,000	832,000
3. Chlorinator House & Equipment	1	LS	632,000	632,000
4. Storage Tank (250 cu.m)	1	No.	1,300,000	1,300,000
Sub-Total of B				**4,765,000**
C. Transmission Main				
1. 160mm dia.	500	LM	1,320	660,000
Sub-Total of C				**660,000**
D. Distribution Main				
1. 160mm dia.	2,000	LM	1,320	2,640,000
2. 110mm dia.	5,000	LM	1,090	5,450,000
3. 90mm dia.	6,000	LM	684	4,104,000
4. 75mm dia.	9,000	LM	637	5,733,000
Sub-Total of D				**17,927,000**
E. Service Connections	**2,000**	**Nos.**	**2,288**	**4,576,000**
F. Miscellaneous				
1. Vehicle	1	No.	649,000	649,000
2. Office & Workshop Bldg.	1	No.	645,000	645,000
3. Office Equipment	1	LS	118,000	118,000
4. Tools and Spare Parts	1	LS	110,000	110,000
Sub-Total of F				**1,522,000**
Total Direct Cost (A+B+C+D+E+F)				**29,810,000**
G. Indirect Cost (25% of Direct Cost)				**7,452,500**
Total Estimated Cost				**37,262,500**
Unit Cost per Person Served				
For New Construction				3,726 **3,700**
For Expansion of Existing System (Exclude F.)				3,536 **3,500**

Note: LS - Lump Sum
Cost of spring development includes additional transmission main, but it shall be confirmed by survey in the implementation stage.
Source: LWUA standard price in 1994
Unit Cost: Adjusted to 1998 Price Level

Table 10.2.11 Unit Cost of Level III (15,000 Service Population)

(Cost: Peso)

Description	Q'ty	Unit	Unit Cost	Amount
A. Mobilization/Demobilization		LS		**360,000**
B. Source Development and Storage				
1. Deep Well	2	No.	2,001,000	4,002,000
2. Deep Well Pump	2	No.	832,000	1,664,000
3. Chlorinator House & Equipment	2	LS	632,000	1,264,000
4. Storage Tank (250 cu.m)	2	No.	1,300,000	2,600,000
Sub-Total of B				**9,530,000**
C. Transmission Main				
1. 160mm dia.	1,000	LM	1,320	1,320,000
Sub-Total of C				**1,320,000**
D. Distribution Main				
1. 160mm dia.	3,000	LM	1,320	3,960,000
2. 110mm dia.	7,000	LM	1,090	7,630,000
3. 90mm dia.	8,000	LM	684	5,472,000
4. 75mm dia.	10,000	LM	637	6,370,000
Sub-Total of D				**23,432,000**
E. Service Connections	**3,000**	**Nos.**	**2,288**	**6,864,000**
F. Miscellaneous				
1. Vehicle	1	No.	649,000	649,000
2. Office & Workshop Bldg.	1	No.	645,000	645,000
3. Office Equipment	1	LS	118,000	118,000
4. Tools and Spare Parts	1	LS	110,000	110,000
Sub-Total of F				**1,522,000**
Total Direct Cost (A+B+C+D+E+F)				**43,028,000**
G. Indirect Cost (25% of Direct Cost)				**10,757,000**
Total Estimated Cost				**53,785,000**
Unit Cost per Person Served				
For New Construction				3,586
				3,600
For Expansion of Existing System (Exclude F.)				3,459
				3,500

Note: LS - Lump Sum
Cost of spring development includes additional transmission main, but it shall be confirmed by survey in the implementation stage.
Source: LWUA standard price in 1994
Unit Cost: Adjusted to 1998 Price Level