RRP:PHI 27013

# ASIAN DEVELOPMENT BANK

REPORT AND RECOMMENDATION

OF THE

PRESIDENT

TO THE

BOARD OF DIRECTORS

ON

PROPOSED LOANS

TO THE

REPUBLIC OF THE PHILIPPINES

FOR THE

RURAL WATER SUPPLY AND SANITATION SECTOR PROJECT

May 1996

## CURRENCY EQUIVALENTS
(as of 30 April 1996)

| | | |
|---|---|---|
| Currency Unit | - | Peso (₱) |
| ₱1.00 | = | $0.0382 |
| $1.00 | = | ₱26.18 |

The exchange rate of the peso is determined on the basis of a floating rate system related to daily foreign exchange transactions of the banking sector. For the purpose of calculations in this Report, a rate of $1.00 = ₱26.00 has been used.

## ABBREVIATIONS

| | | |
|---|---|---|
| AusAID | - | Australian Agency for International Development |
| BME | - | Benefit Monitoring and Evaluation |
| BWSA | - | Barangay Waterworks and Sanitation Association |
| DEO | - | District Engineer's Office |
| DILG | - | Department of the Interior and Local Government |
| DOH | - | Department of Health |
| DPWH | - | Department of Public Works and Highways |
| EIA | - | Environmental Impact Assessment |
| EIRR | - | Economic Internal Rate of Return |
| GTZ | - | German Agency for Technical Cooperation |
| IEE | - | Initial Environmental Examination |
| LGU | - | Local Government Unit |
| LWUA | - | Local Water Utilities Administration |
| MWSS | - | Metropolitan Waterworks and Sewerage System |
| NEDA | - | National Economic and Development Authority |
| NGO | - | Nongovernment Organization |
| OECF | - | Overseas Economic Cooperation Fund |
| O&M | - | Operation and Maintenance |
| PMO-RWS | - | Project Management Office for Rural Water Supply |
| SRA | - | Social Reform Agenda |
| TA | - | Technical Assistance |
| UNDP | - | United Nations Development Programme |
| UNICEF | - | United Nations Children's Fund |
| USAID | - | United States Agency for International Development |
| WD | - | Water District |
| WSS | - | Water Supply and Sanitation |

## WEIGHTS AND MEASURES

| | | |
|---|---|---|
| m | - | meter |
| lpcd | - | liters per capita per day |
| km | - | kilometer |

## NOTES

(i) The fiscal year of the Government ends on 31 December.
(ii) In this Report, "$" refers to US dollars.

# CONTENTS

## LOANS AND PROJECT SUMMARY

| | | |
|---|---|---|
| **Borrower** | : | Republic of the Philippines |
| **Project Description** | : | The Project is based on a sector lending approach and supports the Government's Social Reform Agenda (SRA) for the 20 poorest provinces of the country. The Project areas cover about 3,000 rural communities with populations ranging from 200 to 5,000 persons in provinces located in Luzon, the Visayas, and Mindanao. The Project will (i) provide capacity-building for local government units (LGUs) to enhance the delivery of social services, (ii) improve social infrastructure for basic needs such as water supply and sanitation (WSS), and (iii) reduce poverty. The Project includes (i) comprehensive institutional capacity-building, (ii) community development program, (iii) point source water supply systems, and (iv) public and household latrine facilities. At present, only 40 percent of the rural population in the target provinces have access to adequate, safe, and reliable WSS facilities compared with the national average of 70 percent. The Project will serve an additional population of about 2.0 million, approximately 80 percent of whom are below the poverty line. By the year 2000, the Project will enhance WSS coverage to 90 percent in the Project areas in line with the national target. |
| **Classification** | : | Human development |
| **Environmental Assessment** | : | Category B<br>An initial environmental examination (IEE) was undertaken for sample subprojects, and the summary IEE is a core appendix. |
| **Rationale** | : | To increase WSS coverage for the rural population in the 20 target provinces and meet the Government's target of 90 percent coverage for all rural populations by the year 2000, there is need for (i) institutional development to enhance local implementation capabilities for the provision of WSS facilities, (ii) strengthening community participation to ensure the sustainability of constructed systems, and (iii) increasing the number of rural people with access to potable water and acceptable sanitation facilities. The Project supports the Government's development objectives to raise living standards in rural areas, enhance rural institutions' capacity, and improve health conditions. |
| **Objectives and Scope** | : | The objectives of the Project are to (i) improve the capacity of Government agencies responsible for the WSS sector; (ii) provide, through community-based arrangements, safe, adequate, and reliable WSS services to selected low-income rural communities in the Project areas; and (iii) support health and hygiene education, |

water quality surveillance, and community management activities. The Project consists of two parts. Part A: Institutional Development includes (i) a capacity-building and training program for LGUs; (ii) a community participation program to help the communities design and set up WSS management organizations for cost recovery, operation and maintenance; (iii) a health and hygiene education program; and (iv) a water quality control and surveillance program. Part B: Water Supply and Sanitation Facilities covers the construction and/or rehabilitation of water supply subprojects comprising simple, low-cost, point source water supply systems, provision of sanitation facilities in selected subprojects including public toilets, household sanitary latrines, and provision of consulting services to support Project implementation.

**Cost Estimates** : The total Project cost is estimated at $57.4 million equivalent, including a foreign exchange component of $20.0 million and a local cost component of $37.4 million equivalent.

**Financing Plan** :

($ million equivalent)

| Source of Financing | Foreign Exchange | Local Currency | Total | Percent |
|---|---|---|---|---|
| The Bank | 20.0 | 17.0 | 37.0 | 64 |
| The National Government | - | 10.8 | 10.8 | 20 |
| Local Government Units | - | 4.8 | 4.8 | 8 |
| Communities | - | 4.8 | 4.8 | 8 |
| **TOTAL** | **20.0** | **37.4** | **57.4** | **100** |

**Loan Amount and Terms** : Two loans, with a combined total amount equivalent to $37.0 million, will be provided as follows: (i) a loan of $18.5 million equivalent from the Bank's ordinary capital resources (OCR), and (ii) a loan equivalent to $18.5 million from the Bank's Special Funds resources (ADF). The OCR loan will have an amortization period of 25 years, including a grace period of 5 years, an interest rate to be determined in accordance with the Bank's pool-based variable lending rate system for US dollar loans, and a commitment charge of 0.75 percent per annum. The ADF loan will have a repayment period of 35 years, including a grace period of 10 years, and a service charge of 1 percent per annum.

**Period of Utilization** : Until 1 February 2002

**Executing Agency** : Department of Public Works and Highways (DPWH)

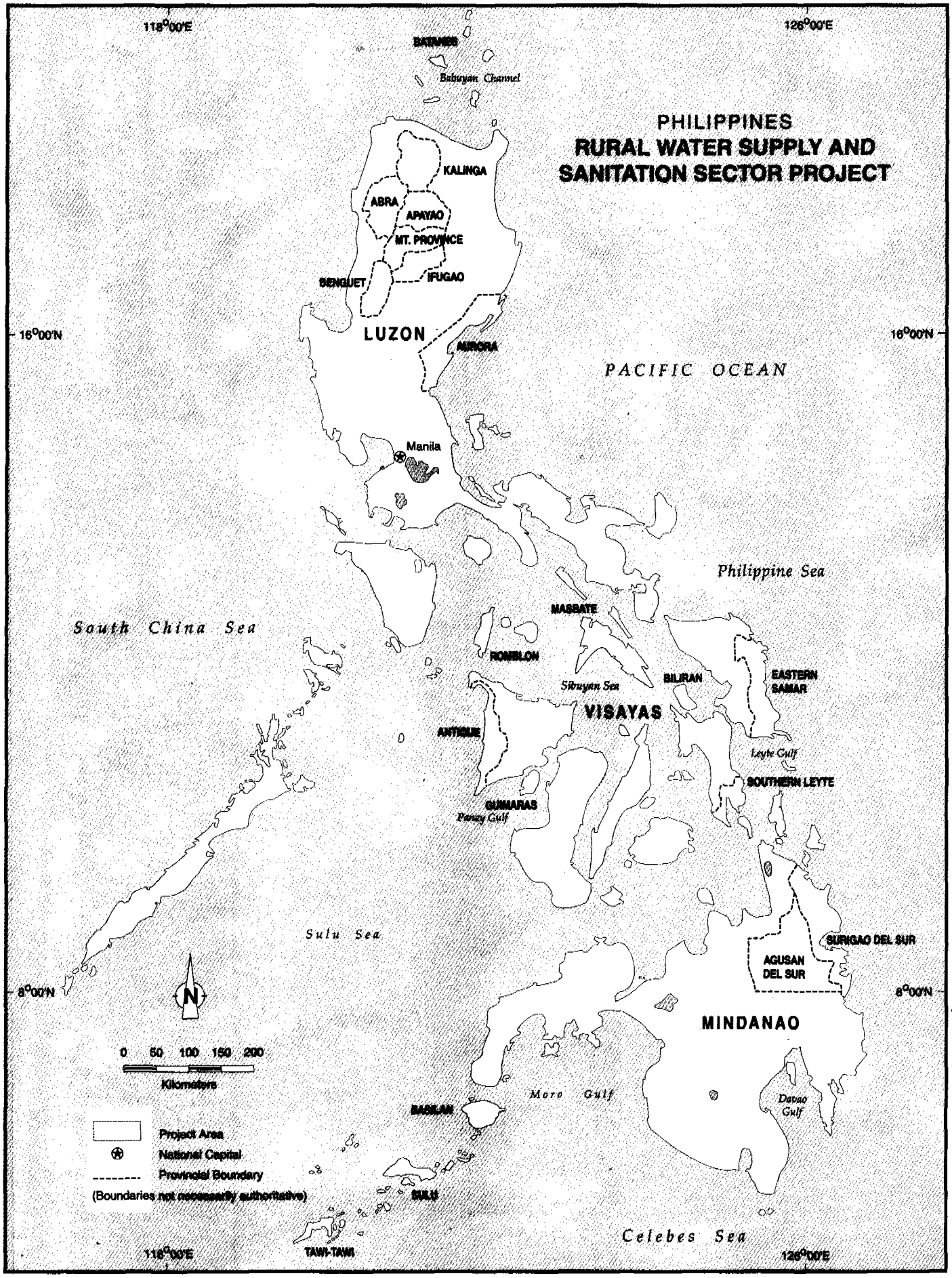
**Implementation Arrangements** : DPWH, as the Executing Agency for the Project, will manage and coordinate Project activities. Through its national network of District Engineers' Offices (DEOs), DPWH will assist LGUs concerned in the design and construction of water supply facilities. A central Project Management Committee established under previous Bank loans will continue to coordinate operations. The Department of the Interior and Local Government (DILG) will be the implementing agency for (i) capacity-building, and (ii) community management training programs. DILG will initiate and coordinate community and LGU participation in rural WSS development and management. The Department of Health (DOH) will provide technical assistance to LGUs and communities to promote health and hygiene education, and water quality control and surveillance programs.

**Procurement** : The procurement of goods and civil works financed under the Bank loans will be in accordance with the Bank's *Guidelines for Procurement.* International competitive bidding (ICB) procedures will be applied for supply contracts estimated to cost the equivalent of $500,000 or more. Supply contracts with a value less than $500,000 equivalent will follow international shopping (IS) procedures, except that supply contracts with a value of less than $50,000 equivalent may be procured by direct purchase. Most civil works contracts are expected to be small and local competitive bidding (LCB) procedures will be applied. Force account may be used for civil works contracts with a value of less than $50,000.

**Consulting Services** : The Project will require a total of 148 person-months of domestic consulting services for assistance with (i) preparation of social and technical surveys, (ii) preparation of feasibility studies, (iii) implementation of community participation and awareness activities, (iv) preparation of detailed engineering designs and contract documents, (v) supervision of construction, and (vi) implementation of training activities. The consultants will be engaged in accordance with arrangements satisfactory to the Bank.

**Estimated Project Completion Date** : 1 August 2001

**Project Benefits and Beneficiaries** : The Project is expected to cover and benefit about 3,000 selected low-income rural communities (populations ranging from 200 to 5,000 persons) located in the country's 20 poorest provinces. The support for capacity-building and community management programs will enhance the efficiency and sustainability of the rural WSS sector in the Philippines. Overall, about 2.0 million people, of whom approximately 80 percent are below the poverty line, will benefit directly from the Project through the provision of safe water supply and sanitation facilities. The Project will improve health conditions by reducing waterborne diseases and poverty.


PHILIPPINES
RURAL WATER SUPPLY AND SANITATION SECTOR PROJECT
118°00'E
126°00'E
16°00'N
8°00'N
BATANES
Babuyan Channel
KALINGA
ABRA
APAYAO
MT. PROVINCE
IFUGAO
BENGUET
LUZON
AURORA
PACIFIC OCEAN
Manila
Philippine Sea
South China Sea
MASBATE
ROMBLON
Sibuyan Sea
BILIRAN
EASTERN SAMAR
VISAYAS
ANTIQUE
Leyte Gulf
SOUTHERN LEYTE
GUIMARAS
Panay Gulf
Sulu Sea
SURIGAO DEL SUR
AGUSAN DEL SUR
MINDANAO
N
0 50 100 150 200
Kilometers
Moro Gulf
Davao Gulf
BASILAN
SULU
TAWI-TAWI
Celebes Sea
Project Area
National Capital
Provincial Boundary
(Boundaries not necessarily authoritative)

95-085 HR

## I. THE PROPOSAL

1. I submit for your approval the following Report and Recommendation on two proposed loans to the Republic of the Philippines for the Rural Water Supply and Sanitation Sector Project.

## II. INTRODUCTION

2. Under its Social Reform Agenda (SRA),[1] the Government of the Philippines has given high priority to enhancing the quality of the country's human resources. SRA, introduced in early 1995, is specifically directed to assist the poor in the less developed provinces of the country. It aims to reduce poverty in the 20 poorest provinces [2] of the country and emphasizes human development, the promotion of economic growth, and the reduction of regional inequalities. This will be achieved through capacity-building for local government units (LGUs), and the provision of basic needs infrastructure facilities such as water supply and sanitation (WSS). Proposals for the Project, which is aimed at providing safe, adequate, and reliable WSS services for rural areas in the 20 target provinces, were prepared by the Government on subprojects in about 200 rural communities (*barangays*)[3] and developed with extensive community participation. The Project proposals are based on socioeconomic and demand surveys among beneficiaries in 12 provinces covering 400 communities and were reviewed by Bank staff assisted by staff consultants. A demand-led approach was evolved to prepare the Project.

3. A Loan Appraisal was carried out from 3 to 25 July 1995. The Mission[4] visited selected Project areas and consulted with LGUs (provincial and municipal) and potential beneficiary communities. The Mission reviewed the Government's policies and plans for the sector and proposals for community-based preparation for the Project. The Mission also reviewed 40 out of the 200 subprojects that had been prepared and carried out a detailed appraisal of eight subprojects, covering the expected range of technical options for WSS facilities covered under the Project. This Report is based on a review of the Government's proposals, socioeconomic surveys, community preparation activities, the Mission's findings, and discussions with the Government, LGUs, representatives of community organizations, and funding agencies active in the WSS sector.

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1 SRA covers basic needs, including water supply and sanitation, health and nutrition, income, shelter, peace and order, education, and participation in governance in the 20 poorest provinces.

2 These are Abra, Agusan del Sur, Antique, Apayao, Aurora, Basilan, Batanes, Benguet, Biliran, Eastern Samar, Guimaras, Ifugao, Kalinga, Masbate, Mountain Province, Romblon, Southern Leyte, Sulu, Surigao del Sur, and Tawi-Tawi.

3 A *barangay* is the smallest administrative unit of the Government, composed of several clusters of households, with at least 200 inhabitants.

4 The Mission comprised P. Wallum (Project Economist/Mission Leader), A.S. Roach (Programs Officer), C. C. Fong (Counsel), F. Padernal (Institutional Development Expert/Staff Consultant), and E. Verzola (Community Participation Specialist/Staff Consultant). T.P. Walsh (Sr. Programs Officer), A. Knudsen (Sr. Project Engineer), K. Higuchi (Sr. Project Engineer), and O. Tiwana (Counsel) also assisted the Mission in Manila.

# III. BACKGROUND

## A. Sector Description

### 1. General

4. In 1991, about 28 million Filipinos or 45 percent of the total population were living below the official poverty line,[1] including about 17 million or 54 percent of the total rural population in less developed areas, where the incidence of poverty in some locations can reach 80 percent. Among the structural causes of rural poverty is the lack of basic needs infrastructure services such as community-based WSS facilities.

5. Improved rural WSS services can have wide-ranging health, social, and economic benefits. Sanitation-related diseases like diarrhea, tuberculosis, intestinal parasitism, schistosomiasis, malaria, infections, hepatitis, and dengue hemorrhagic fever afflict large numbers of people in the rural areas. Diarrhea is the main cause of neonatal morbidity and the leading illness among children. The incidence of these diseases can be significantly reduced when WSS services are improved. The most significant improvements in health are usually achieved through a combination of improved WSS services and the practice of better personal and household hygiene. The benefits from WSS can be maximized in underserved rural areas when combined with support programs such as health and hygiene education. Women and children benefit substantially from improved rural WSS as the physical burden of carrying water can be reduced and the time and energy saved can be put to more productive use.

### 2. Rural Water Supply and Sanitation Services

6. Rural water supply facilities in the Philippines generally consist of simple, point source systems[2] using surface or groundwater, such as protected springs, shallow and deep wells, and rainwater collectors. The rural sanitation services include household pit latrines of various types: communal washing, bathing, and waste disposal facilities; and public latrines at markets and schools. The establishment of a Barangay Waterworks and Sanitation Association (BWSA) is a precondition for the provision of a WSS system financed by a Government grant. The BWSA assumes full responsibility for operation and maintenance (O&M), including O&M and depreciation costs of the constructed systems. In spite of this precondition, BWSAs were not always established in the past, and this situation led to poor O&M of constructed systems.

7. It is estimated that in 1995, about 8 million or 30 percent of all rural residents lacked potable water. The existing water supply services in rural areas consist of (i) wells with hand pumps (serving 42 percent), (ii) wells driven by diesel pumps (serving 9 percent), (iii) gravity-fed systems (serving 7 percent), and (iv) other sources such as rainwater catchments, and unprotected wells and springs (serving 12 percent). Water supply consumption levels vary

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1 Based on the Government's Family Income and Expenditures Survey of 1991, the annual per capita poverty threshold in 1991 was about ₱7,200.

2 These rural systems are technically defined in the Philippines as Level I systems consisting of point source systems with public standpipes and no household connections. In urban areas Level II and III systems are used: Level II systems have a mix of public standpipes and household connections. In Level III systems, all or the majority of the households are connected to piped systems.

from 15 lpcd (liters per capita per day) to 30 lpcd, depending on the distance water has to be carried from the supply source to the house. Households living more than 200 meters (m) away from the source normally consume about 15 lpcd. This range of service levels is considered appropriate for rural areas. Most rural areas lack safe and sanitary excreta disposal facilities, and about 70 percent of the population are served by poorly designed pit latrines. Consequently, the average service coverage for rural WSS remains low. Facilities for solid waste disposal and drainage are generally adequate.

8. Households not covered by WSS services deal with the problem in various ways. About 20 percent of the rural poor population fetch water from rivers, with women and children carrying most of the water, often over long distances. A large percentage of the rural communities rely on unprotected and usually contaminated open wells and streams. Those with cash may buy water from commercial vendors. For excreta disposal, households in underserved communities rely on rudimentary latrines, or use open land or watercourses, thus contributing to the pollution of the drinking water supplies.

## B. Government Policies and Plans

9. A major focus of the Government is the provision of essential infrastructure to support and strengthen the country's economic growth, enhance the well-being of the poor, and meet the basic needs of rural communities. This is to be achieved by providing safe and reliable rural WSS facilities, complemented by health and hygiene education programs.

10. In 1988, the Government launched the country's Water Supply, Sewerage and Sanitation Sector Master Plan, covering the period up to the year 2000. Since then, there has been an increase in the water supply coverage for the urban population from 63 percent to 70 percent in 1995. Progress in the provision of water supply facilities for rural areas has been relatively slower, with the population covered increasing from 65 percent in 1988 to 70 percent in 1995, overall, but in the poorest rural areas the average is only 40 percent. Accordingly, the provision of WSS facilities for the rural areas is now an important priority of the Government's program.

11. In recognition of the emerging crisis in the water supply sector caused by increasing demand and scarcity of reliable water sources, the Government has initiated a number of studies and actions. These include (i) the Philippine Water Supply Sector Reform Study of 1992 with recommendation for policy, implementation, and options for structural reform of the sector; (ii) the Philippine National Urban Sewerage and Sanitation Sector Study of 1993; (iii) the National Economic and Development Authority (NEDA) Board Resolution No. 4 of 1994, which supported the decentralization of sector activities to LGUs, the privatization of water districts, and the provision of sewerage services; and (iv) the Conference on Water Resources Development and Sanitation in 1994. The outcome of these activities culminated in a National Water Summit in December 1994.

12. The Water Summit endorsed an Action Plan aimed at (i) the introduction of appropriate policy reforms and improvements to institutional arrangements; and (ii) ensuring the continued provision of adequate, safe, and affordable water supply. The Water Summit also endorsed the restructuring of the Cabinet's Water Resources Management Unit, to serve as the President's Advisory Committee on all matters relating to water resource management. A Cabinet Committee is coordinating the implementation of the Water Summit Action Plan. The Water Summit Action Plan includes the Government's "Philippines 2000" targets and requires all sector

agencies to increase their respective water supply service coverage to 90 percent of the population by the year 2000. To achieve the national target, a Rural WSS Development Program to construct an additional 61,500 Level I systems was launched nationwide. This is complemented by a Department of Health (DOH) sanitation program to provide water facility disinfection and water quality control and surveillance, and to construct public and household latrines. The program is aimed at the control of communicable diseases, and the reduction of morbidity due to waterborne and sanitation-related illnesses.

13. In June 1995, the President signed into law the National Water Crisis Act, which includes the following measures to address the nationwide water crisis:

(i) the creation of a Joint Executive-Legislative Water Crisis Commission composed of representatives of Congress and sector agencies concerned, to undertake consultations and studies on the water supply situation and recommend appropriate remedial and legislative measures;

(ii) the institutional strengthening of the Metropolitan Waterworks and Sewerage System (MWSS) and the Local Water Utilities Administration (LWUA) to make them more responsive to the water crisis; and

(iii) granting the President emergency powers to enable him to negotiate build-operate-transfer contracts for projects to speed up the construction of infrastructure and the delivery of services.

14. The Department of the Interior and Local Government (DILG) is preparing a capacity-building program to be issued by the end of 1996, which aims to improve the Government's policy of decentralizing responsibility and devolving powers to LGUs for WSS development. The objective is that, LGUs will become fully responsible for WSS development, and BWSAs will be responsible for O&M of all rural WSS services. Private sector participation in WSS development is also being promoted by the Government. The guiding principles for private sector participation are to (i) reduce the burden on the Government's budget, and (ii) improve overall efficiency by using private sector experience in the management of water supply utilities. In the rural WSS sector, among other things, private contractors will be utilized increasingly for the construction of water supply systems, including well drilling activities.

### 1. Government Institutions

15. Three agencies are involved in the rural WSS sector: (i) the Department of Public Works and Highways (DPWH), presently responsible for providing technical assistance (TA) to LGUs in the physical implementation of rural WSS systems; (ii) DILG, responsible for the institutional development of LGUs to enhance their ability to assume full responsibility for all levels of WSS services; and (iii) DOH, responsible for promoting LGUs implementation of health and hygiene, and water quality surveillance and control programs. In accordance with current sector policies and plans, DPWH is the main sector agency responsible for the development of national water supply programs. Through its Project Management Office for Rural Water Supply (PMO-RWS), and its Regional Director's Offices and District Engineer's Offices (DEOs) nationwide, DPWH performs engineering and construction functions, such as well drilling and spring development (Level I systems) using mainly private contractors. DPWH is responsible for financial grants from the Government for the construction of rural water supply systems. At the local level, BWSAs, formed as a precondition to any Government grant-financed water supply

subproject, are responsible for O&M, including depreciation costs, for any constructed sch
But in the absence of proper regulations, in the past BWSAs have either not been formed expeditiously or not functioned well. As a result of a policy dialogue in conjunction with the Project, the Government is now formulating comprehensive regulations with respect to the legal powers of BWSAs, including the registration, suspension, and governance thereof, to enable them to be more effective. A more detailed description of the responsibilities of the sector agencies is part of Appendix 1.

16. DILG is in the process of formulating a LGU capacity-building program, which will facilitate the process of the decentralization of all WSS responsibilities to LGUs. It is recognized that the period of transition needs to be managed carefully to ensure that the implementation responsibilities are transferred to LGUs, taking into account the strengthening of their capabilities and making full use of the existing capacity and resources of the central agencies. It is envisaged that, in view of its institutional strengths and experience in implementing rural WSS projects, DPWH will be the central line agency that will assist and supervise the LGUs in the implementation of the physical elements of the rural WSS sector program under the Project. Concurrently, the role of DILG to undertake LGU capacity-building activities will be strengthened, and a bottom-up process has been initiated for community participation activities. This model will bring together the national and local institutions in a cooperative framework and has been adopted for the Project. Therefore, DPWH will be the Executing Agency for the Project, which will simultaneously strengthen the capacities of LGUs. Thus, LGUs will be responsible in the implementation of WSS subprojects. This will facilitate the devolution of responsibilities and functions of basic services to LGUs and the transition of sector agencies' responsibilities in the rural WSS sector.

### 2. Nongovernment Organizations

17. The important role played by nongovernment organizations (NGOs) in WSS development is well established. Over the years, NGOs have developed expertise, experience, and a good record in the timely delivery of basic services. The Government's policy to increase community participation in the development and management of the rural WSS sector has encouraged the involvement of national and local NGOs in the rural WSS sector. For the Project, the Government has agreed to the involvement of NGOs for (i) community consultation, organization, participation, and development in subproject planning, design, construction, and O&M; (ii) interaction with community leaders to develop and implement community health and hygiene education training activities; and (iii) monitoring and evaluation of subprojects. DILG will use NGOs to assist in the community management program.

### 3. Women in Development

18. In rural areas of the Philippines, women are responsible for collecting drinking water. Frequently, they are excluded from the planning and implementation activities for new rural WSS facilities. As main users of WSS facilities, women have a strong interest in ensuring proper design, implementation, management, and O&M of the rural WSS systems. Therefore, through the Project, women's traditional role in informal management of the WSS systems will be formalized in such activities as (i) planning and implementation of WSS facilities, (ii) health and hygiene education, (iii) O&M, and (iv) gender training and information for community leaders. Women's involvement will ensure their integration into the proposed BWSAs as well as into the informal network at the community level.

19. The specific steps to enhance women's participation in the Project include (i) identifying the women's groups in the community; (ii) training women's community groups to participate in Project-related activities such as health and hygiene education and gender issues; (iii) training women's organizations, including the poorer women, in the decision-making process; (iv) ensuring women's participation in the design, implementation, and O&M of constructed WSS systems; and (v) providing employment opportunities for women in BWSAs' activities, such as the management and benefit monitoring and evaluation (BME) of the WSS facilities. BWSAs have a Board of Directors, which include a president, a vice-president, a secretary, a treasurer, and one member. The goal is that all BWSAs established should have at least two women representing women's interests on the Board of Directors. In addition to the general membership, there is also a bookkeeper and a caretaker per facility under BWSA's supervision. Women will be trained and encouraged to be part of BWSA, including the Board of Directors.

## C. External Assistance to the Sector

20. In addition to the Bank, a number of multilateral and bilateral agencies have provided assistance for rural WSS sector development, including the World Bank, the United Nations Development Programme (UNDP), the United Nations Children's Fund (UNICEF), the Australian Agency for International Development (AusAID), the Overseas Economic Cooperation Fund (OECF) of Japan, the United States Agency for International Development (USAID), the Danish International Development Agency, the Government of France, and the German Agency for Technical Cooperation (GTZ). World Bank assistance has included one loan to the rural WSS sector. UNDP, World Bank, and GTZ are assisting in rural WSS community management programs. AusAID is financing a large ongoing rural water supply program in the Central Visayas. The Government of France has financed a feasibility study for a rural water supply project in Rizal Province. OECF has funded three projects for rural water supply, and USAID has financed a Barangay Water Program for the construction of water systems in small communities.

21. With its focus on the poorest provinces, the Bank has been the major source of funding for the rural WSS sector in the Philippines. Bank assistance has included two sector loan projects for rural water supply totaling $48.0 million.[1] (Appendix 2 lists sector assistance from major funding agencies and the Bank.) The Bank-assisted projects have constructed water supply systems as well as rehabilitated existing water supply systems throughout the country. The Bank has also supported institutional development and improvements in the financial management of the sector institutions.

22. During the formulation of the Project, extensive consultations were held with the donor community, particularly UNDP, World Bank, and GTZ who are financing community- based rural water supply projects in different areas of the country. Consultations were held with UNICEF regarding monitoring systems and cost-recovery training programs. Bank staff have held discussions with the Swedish International Development Cooperation Agency, which is planning to assist the Government with water resources management studies. These studies will provide an important database for future improvements of urban and rural water supply facilities. The Bank has also approved a TA for private sector participation in urban development,[2] with a

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1 The Bank's total assistance to the WSS sector in the Philippines involves 16 loans amounting to $640.8 million and 20 TA projects amounting to $7.50 million.

2 TA No. 2502-PHI: *Private Sector Participation in Urban Development*, for $500,000, approved in December 1995.

particular focus on the provision of water supply, sanitation services and solid waste management.

## D. Lessons Learned

23. The main problems faced during the implementation of the Bank-financed first rural water supply sector project[1] related to (i) insufficient community consultation and participation in the planning, design, and implementation of subprojects; this contributed to non-functioning or nonestablishment of BWSAs, lack of guarantees for O&M financing, poor cost recovery, inadequate O&M, and unsanitary use of constructed facilities; (ii) technical problems, e.g., the selection of sources without sufficient water quality tests, poor quality well construction, badly designed rainwater collector systems that frequently failed and were subsequently abandoned by DPWH; and (iii) DOH's inadequate capacity to carry out regular bacteriological water testing. The need to focus further on sustainability of operations and a greater sense of ownership has been recognized. While remedial actions were undertaken through the second rural water supply sector project,[2] the above issues have been studied in detail during the formulation of the Project and appropriate measures have been comprehensively incorporated in Project design, as outlined below and elaborated in Appendix 3.

24. The Government, the Bank and other aid agencies are now focusing on community participation and a decentralization of the implementation process. Under the Project, community organization and formation of BWSAs will be a prerequisite for inclusion of subprojects for physical implementation. A comprehensive capacity-building program is being undertaken for sector agencies, LGUs, and BWSAs. Detailed arrangements have been outlined for cost recovery, and O&M functions will be strengthened. The capacity-building program will address previous technical problems through training using, among others, the training modules prepared under an advisory TA grant[3] approved in connection with the second rural water supply sector project. The issue of water quality will be specifically addressed under a comprehensive water quality control and surveillance program, including the provision of testing equipment, and the construction and operation of district laboratories.

## E. The Bank's Sectoral Strategy

25. The Bank's operational strategy for the Philippines conforms with the Bank's overall strategic framework and supports the Government's priorities and programs in the Philippine Medium Term Development Plan, 1993-1998. Given the current economic situation in the country, the main emphasis of the Bank's strategy is on generating growth through greater private sector involvement in the economy to create employment and promote a more open economy. Over the longer term, encouraging growth will require a focus on providing funding and technical support for infrastructure development. Both the expansion of capacity and an

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1 Loan No. 812-PHI: *Island Provinces Rural Water Supply Sector Project*, for $24.0 million, approved in December 1986. The Project was completed in September 1992, a PCR was circulated in October 1993, and a PPAR was circulated in May 1995. The Project is classified as partly successful.

2 Loan No. 1052-PHI: *Second Island Provinces Rural Water Supply Sector Project*, for $24.0 million, approved in November 1990. This Project was completed in December 1995.

3 TA No. 1422-PHI: *Training System for Rural Water Supply Personnel*, for $130,000, approved in November 1990.

improvement in the efficiency of existing investments will be emphasized. In addition, the Bank envisions increased support for the management and sustainable development of the country's natural resources to help rehabilitate and protect the environmental resource base. Complementing these activities, the Bank's operational program will be involved in assisting in human development, WSS, urban development, education, and health sectors.

26. The Bank's WSS sector strategy includes support for human development and public investment in infrastructure and sustainability of operations through adequate tariffs for financing of O&M and depreciation, including (i) improving the LGUs' capabilities in administration, community management, and financial management; (ii) integrating water supply development with the improvement of sanitation facilities; (iii) facilitating community participation and adequate tariffs to achieve long-term service sustainability through proper O&M; and (iv) providing the poor with basic needs services, such as WSS facilities to improve living conditions. Within this context, the Bank's strategy for rural WSS in the Philippines is to increase the overall population coverage especially for the rural poor, and to particularly focus on the development of an overall framework for the institutional strengthening of sector agencies, LGUs, and beneficiary communities. All these aspects are being addressed through the Project.

## F. Policy Dialogue

27. The WSS sector is in a state of transition because of sector reforms introduced as a result of the enactment in 1994 of the revised Local Government Code. The sector reforms include implementing a policy of decentralizing authority and devolving responsibility for the WSS sector, thus enabling LGUs to assume the more significant roles in the sector. In the interim period, the bulk of the rural water supply TA functions will continue to be performed by DPWH until adequate capability and capacity have been developed at the local level. This arrangement is expected to continue in the medium term. The implementation and promotion of environmental sanitation programs is the responsibility of DOH although some of these functions have also been devolved to LGUs, including health and hygiene education, and water quality surveillance and control programs.

28. The Bank is supporting the Government's development philosophy, which is based on the concept of "people empowerment", implying reliance on people, entrepreneurship, and markets. This development philosophy is reflected in the Medium Term Development Plan 1993-1998, which is structured along three main strategies: (i) human resources development, (ii) international competitiveness, and (iii) sustainable development. For infrastructure development, the main objective of the Plan involves meeting the primary needs of the population for reliable and adequate WSS, health, and transportation facilities. For the WSS sector, the Plan emphasizes (i) providing access to adequate, safe, and reliable water supply services; (ii) undertaking the gradual construction and installation of sanitation facilities; and (iii) proper O&M.

29. The efficient delivery of water supply services to Metro Manila by MWSS has been hindered in the past by two chronic operational problems: (i) the high level of nonrevenue water, and (ii) accounts receivable. The Bank has prepared a program for MWSS to accelerate organizational reform strategies and support legislation focusing on (i) private sector participation, (ii) enactment of an anti-water pilferage act, (iii) restructuring the MWSS organization based on water distribution areas, and (iv) providing support measures for the reduction of nonrevenue water and accounts receivable.

30. Water supply development in urban areas outside Metro Manila is the responsibility of LWUA and the following sector reforms have been achieved: (i) decentralization of LWUA's operations; (ii) the participation of water districts in the design, planning, and implementation of projects; (iii) annual revision of tariffs; and (iv) improvement in revenue collection efficiency. The Bank has financed an advisory TA for institutional strengthening of LWUA and water districts,[1] which has strengthened LWUA's corporate planning and management system, lending procedures, monitoring activities, cost control and accounting systems. The TA also strengthened the water districts' management, accounting, billing, and collection systems, and introduced financial planning and a program for the reduction of nonrevenue water. The Bank is supporting private sector participation in the operations of the water districts.

31. Through the Bank-financed Regional Municipal Development Project,[2] the Bank has directly influenced regional development policy at the subnational level by persuading DILG and LGUs to change the practice of identifying and selecting components for investments in LGUs on the basis of a "wish list" and to use the concepts of critical evaluation, appraisal, and prioritization for selection. Through the dialogue with the Bank, LGUs have adopted the concepts of community consultation and participation, affordability, cost recovery, and "user pays". The Bank has also encouraged a shift away from the traditional "top-down" centralized planning approach and has emphasized the concept of "bottom-up" planning with extensive local participation, together with training and capacity-building for DILG and LGUs in project management, implementation, and community development.

32. During the preparation of the proposed Project, Bank staff held further policy dialogues on the rural WSS sector with the Government and sector agencies in collaboration with the funding agencies concerned. The key sectoral reform that has partly been achieved and will be fully implemented under the Project is the decentralization of the delivery of basic WSS services, LGU capacity-building and the greater participation of BWSAs in the planning, design, and implementation of subprojects. In accordance with the Local Government Code, the Government now plans to involve LGUs fully in planning and implementing rural WSS facilities while BWSAs will be expected to have the capacity to operate and maintain the constructed systems. Toward this end, a comprehensive LGU capacity-building program will be formulated and implemented by DILG. The Program comprises (i) training of provincial and municipal LGUs in participatory approaches leading to BWSA organization and development, records management, O&M, and BME; and (ii) improvement of guidelines, regulations, and manuals to support LGU implementation of the WSS subprojects. Further reforms involve institutionalizing the community management approach to ensure sustainability and introducing measures to improve sector efficiency. The institutional development program will enhance the capacity of sector agencies to implement rural WSS programs using the community-based approach. During the development of the Project, the major concern of ensuring the delivery of safe water to the beneficiary households was also comprehensively addressed. Under the Project, district laboratories for water quality testing will be constructed and fully equipped, chemicals for well disinfection and improving water quality will be procured, and a water quality control and surveillance program will be administered.

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1 TA No. 1995-PHI: *Institutional Strengthening of LWUA and Water Districts*, for $590,000, approved in December 1993.

2 Loan No. 1367-PHI: *Regional Municipal Development Project,* for $30 million, approved on 29 August 1995.

33. The National Government share of the Project financing is being reduced. In the past, the Government provided 90 percent grant financing for the capital cost of rural WSS projects. Under the Project, grant financing will be 80 percent, with 10 percent contribution each from the LGUs and the communities. The need for greater emphasis on cost recovery has also been agreed upon with the Government. Proper procedures for the establishment and management of BWSAs have been established, including tariff setting, collection of water fees, penalties, O&M, and financing arrangements. BWSAs will achieve full cost recovery for O&M including depreciation. At present, only this level of cost recovery is considered affordable, considering that the Project areas are located in the 20 poorest provinces. A future policy dialogue will focus on greater contributions from both LGUs and the beneficiaries, the aim being a gradually increased capital cost recovery from the target beneficiaries. The dialogue will also cover the gradual phasing out of capital subsidies in the long term.

## IV. THE PROJECT

### A. Rationale

34. The capacity of various institutions involved in the provision of WSS facilities is low, particularly at the local level. There is a need to build the capacity of LGUs in implementing rural WSS subprojects and to improve the communities' ability to undertake O&M of the constructed systems. WSS coverage for the rural population particularly in the 20 poorest provinces is relatively low and the Government is planning to increase the coverage to 90 percent for both rural and urban areas by the year 2000. Accordingly, the priority is to increase access to potable safe water and acceptable sanitation facilities in the rural areas of the 20 selected provinces. The Project will enhance WSS coverage and support the current development objectives of the Government to raise living standards in rural areas, enhance rural development capabilities, and improve health conditions. Finally, in keeping with the current emphasis under the Government's SRA, the Project design is based on a bottom-up planning approach with extensive community involvement.

35. The Government's sector plans and policies have been reviewed and are considered well formulated. The process approach envisaged for Project implementation will allow appropriate adjustments to be made, based upon the implementation experience. Further, the Executing Agency, DPWH, has implemented several Bank and other externally assisted water supply projects in the past and has adequate capacity. Therefore, as in the two earlier Bank-financed rural water supply sector projects carried out by DPWH, a sector lending modality has been adopted in the design of the Project. The justification for the sector lending approach is also based on the large number of replicable subprojects, which are small in size.

36. Based on lessons learned and to ensure Project sustainability, extensive social preparation of the communities is required. To ensure this, specific institutional arrangements are necessary to gradually formalize both the Project community participation and management approach. Accordingly, the Project incorporates comprehensive institutional development and strengthening programs for all involved agencies at the national, provincial, and local levels. The decentralized implementation model, incorporating NGOs and beneficiary communities involvement, is now being standardized on a countrywide basis for all rural WSS projects.

## B. Objectives and Scope

37. The objectives of the Project are to (i) improve the capacity of sector agencies in enhancing the delivery of social services; (ii) provide safe, adequate, and reliable WSS services to selected low-income rural communities through community-based arrangements; and (iii) support health and hygiene education, water quality surveillance, and community management activities. The Project will (i) help develop the technical capacity of LGUs and communities in the planning, implementation, and O&M of basic rural WSS services; (ii) promote a sense of subproject ownership and enhance community management of rural WSS services; and (iii) improve health and hygiene education in the Project areas to ensure the sustainability of Project benefits.

38. The Project will cover about 3,000 rural communities (*barangays*) with populations ranging from 200 to 5,000 persons. This represents about 50 percent of the total number of communities in the 20 poorest provinces, spread throughout Luzon, the Visayas, and Mindanao. They are also the least developed provinces in the country. Presently, only about 40 percent of the rural population in these provinces have adequate access to safe and reliable WSS facilities compared with the nationwide average of 70 percent for the rural areas.

39. Agriculture and fishing are the main economic activities in the Project areas, with forestry and cottage industries as support livelihood activities. Generally, public utilities are limited and infrastructure facilities are inadequate. Although water sources abound in many parts of the Project areas, the limited financial capability of LGUs to construct and maintain water supply facilities has led to the underdevelopment of reliable and safe water supply schemes. Waterborne diseases rank as one of the leading causes of morbidity and mortality in the rural areas, especially among infants. A profile of the Project areas is in Appendix 4.

40. The Project involves institutional development and the improvement of WSS in about 3,000 rural low-income communities[1] through the construction and rehabilitation of WSS facilities serving approximately 2.0 million persons and thereby increase the coverage of the Project areas' rural population from 40 to 90 percent by the year 2000. The Project will cover five years and 50 percent of the rural communities in the 20 poorest provinces under the National Rural WSS Development Program. The Project framework is in Appendix 5. The Project consists of two main parts: Part A: Institutional Development, and Part B: Water Supply and Sanitation Facilities. These are described below.

41. Part A: Institutional Development consists of four components:

(i) capacity-building program for local institutions covering training courses for LGUs: (a) organization and management courses for organization development, participatory approaches, gender issues, BWSA organization, records management, inventory control, and consumer relations; (b) technical courses, including water resources management, environment sanitation, O&M, well drilling and construction; (c) financial management, including budgeting, accounting, and bookkeeping, financial management and control, and water rates. About 4,000 persons will be trained through the above courses;

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[1] Since a subproject is defined as WSS facilities in a community, there will also be about 3,000 subprojects.

(ii) community management program to help the communities design and set up cost recovery, O&M, and a community management organization. The training program will focus on (a) institutional development, including BWSA formation and registration, involvement of women's organizations, records management system, and networking with other BWSAs; (b) technical development, including O&M, spare parts availability, and LGU support; and (c) financial development, including affordability and willingness to pay, water fee collection approaches, cost recovery, bookkeeping, and financial management. The 3,000 communities under the Project will be covered by the program through the input of 1,500 person-months of community development specialists, mainly through NGOs;

(iii) health and hygiene education program focusing on safe drinking water, good habits for personal hygiene, and the control of diarrhea. Various media (print, television, and radio) will be used. Education material (handouts, posters, cassettes and video tapes) will be developed. A total of 750 person-months of sanitary inspectors and 750 person-months of midwives will implement the education program covering the targeted communities; and

(iv) water quality control and surveillance program covering (a) disinfection of water sources; (b) water sample collection and testing; (c) issuance of the certificate of water potability; (d) recommendation to install water treatment facilities if test results are negative; and (e) periodic testing of water in designated sample points. A total of 500 person-months of sanitary inspectors and 500 person-months of water quality technicians will establish this program in the Project provinces. In addition, 50 district laboratories will be constructed and equipped.

42. Part B: WSS Facilities consists of subprojects for the construction and rehabilitation of point source (Level I) water supply systems. It is estimated that over 6,100 new water supply systems will be constructed: (i) 2,500 shallow wells, up to 20 m deep, with hand pumps (41 percent); (ii) 2,000 deep wells, over 20 m deep, with hand pumps (33 percent); (iii) 26 deep wells with submersible pumps and generators (1 percent); and (iv) development of 1,600 protected spring sources with gravity transmission pipelines with a maximum length of 4 kilometers (km) (25 percent).[1] In addition, 2,000 shallow and deep wells, 130 springs, and transmission lines will be rehabilitated. The subprojects will also selectively cover sanitation facilities, such as the construction of sanitary public and household latrines, and district laboratories. The sanitation component will provide (i) public latrines in about 125 markets and 125 schools; (ii) about 40,000 household latrines to cover about 50 percent of all *barangays*/subprojects that presently have the worst environmental condition;[2] (iii) 50 pilot district laboratories including equipment, and chemicals; and (iv) 75 portable water quality analysis kits. Consulting services will support the Project implementation capacity of DPWH, DILG, and DOH in (i) preparation of socioeconomic surveys, (ii) preparation of technical studies, (iii) development of standard WSS designs, (iv) preparation of contract packages and documents,

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1 The costs of various water supply systems options range from $5/capita to $35/capita, with a weighted average of $20/capita.

2 The squatting plate plus two bags of cement will be given to each household without a sanitary latrine in a selected community. The cost will be about $3/capita. Health workers will assist in the construction to ensure that a proper sanitary, standardized, household latrine design will be implemented.

(v) support of the LGU capacity-building and community management programs, (vi) preparation of health and hygiene program, (vii) review of water quality control and surveillance program, (viii) supervision and evaluation of Project activities, (ix) organizational development and gender issues, and (x) support of the activities of the Project Management Office.

## C. Technical Justification

43. An important criterion for the selection of a water supply technology is its adaptability to local conditions and demand by the rural communities. The community-based participatory approach ensures that appropriate technologies will be investigated and discussed prior to implementation. Such a participatory approach will also help to ensure that technically appropriate and acceptable systems are sustainable through community-based O&M. With this concept, the Project proposes to adopt the simple point source water supply systems. The type of technology for the systems will be guided by the design criteria (see Appendix 6). The large majority of the water supply schemes will include wells with hand pumps in several places in a given community.

## D. Cost Estimates

44. Based on cost estimates of the eight representative subprojects appraised and the subprojects proposed for about 200 communities, the total cost of the designated segment of the rural WSS investment program or the Project is estimated at $57.4 million equivalent, including taxes and duties as well as interest during construction. The foreign exchange cost is estimated at $20.0 million equivalent (including $1.4 million for interest and service charge during construction) or about 35 percent of the Project cost, and the local currency cost is $37.4 million equivalent or about 65 percent of the Project cost. A summary of the cost estimates is given in Table 1, and details of costs are presented in Appendix 7.

**Table 1: Summary of Project Cost** [a]
($ million equivalent)

| | Component | Foreign Exchange | Local Currency [b] | Total |
|---|---|---|---|---|
| I. | **Part A. Institutional Development** | | | |
| (i) | Capacity-building Program | - | 0.5 | 0.5 |
| (ii) | Community Management Program | - | 0.6 | 0.6 |
| (iii) | Health and Hygiene Education Program | - | 0.4 | 0.4 |
| (iv) | Water Quality Control/Surveillance Program | - | 0.1 | 0.1 |
| | Subtotal I | - | 1.6 | 1.6 |
| II. | **Part B. Water Supply and Sanitation** | | | |
| (i) | Land | - | 1.5 | 1.5 |
| (ii) | Civil Works | 4.6 | 21.6 | 26.2 |
| (iii) | Equipment and Materials | 14.0 | 6.7 | 20.7 |
| (iv) | Feasibility Studies and Detailed Design | - | 2.4 | 2.4 |
| (v) | Project Management/Consulting Services | - | 0.9 | 0.9 |
| (vi) | Administration Support | - | 2.7 | 2.7 |
| | Subtotal II | 18.6 | 35.8 | 54.4 |
| III. | **Service Charge and Interest During Construction** | 1.4 | - | 1.4 |
| | **Total** | **20.0** | **37.4** | **57.4** |

[a] December 1995 prices.
[b] The local currency cost includes duties and taxes estimated at $4.7.

## E. Financing Plan

45. The Government has requested the Bank to provide two loans totaling the equivalent of $37.0 million. One loan of $18.5 million would be from the Bank's ordinary capital resources (OCR). The other loan, equivalent to $18.5 million, would be from the Bank's Special Funds resources (ADF). The loans will cover 64 percent of the total Project costs, including the entire foreign exchange cost of $20.0 million equivalent and part of the local cost equivalent to $17.0 million. The local cost financing represents 45 percent of the total local costs. The local cost financing envisaged in the Project is justified on country and Project considerations. The Philippines is experiencing a resource gap and is making concerted efforts toward mobilization of domestic savings. The Project, being in the social infrastructure sector, is targeted at human development, poverty reduction, and environmental considerations. The proposed level of local cost financing is therefore considered justified in view of the tight fiscal situation of the Government, the low revenue-generating potential of a social sector project of this nature, and the Project's focus on crosscutting concerns of the Bank. The strong human development orientation of the Project, with its focus on the poorest provinces, also justifies the Bank financing arrangements.

46. The proposed OCR loan will have a repayment period of 25 years including a grace period of 5 years, and interest at a rate determined in accordance with the Bank's pool-based variable lending rate system for US dollar loans. The proposed ADF loan will have a repayment period of 35 years, including a grace period of 10 years, with a service charge of 1 percent per annum. The Borrower will be the Republic of the Philippines.

47. The National Government will provide 80 percent of the cost of each Level I water supply subproject, including the proceeds of the loans, in the form of grant financing through the budget for the development of rural WSS facilities. The LGUs concerned will contribute 10 percent in cash as equity and the beneficiary *barangays* will contribute the remaining 10 percent of each subproject cost in kind through labor for construction works, and donation of land for WSS facilities. With respect to sanitation facilities (except for private latrines) and district laboratories, the Government will provide all required infrastructure and the LGUs and school administrations concerned will provide the required land as their respective equity contributions. The cost-sharing arrangements follow the Government's national standard policy for financing of all rural WSS programs. The proposed financing plan is summarized in Table 2.

**Table 2: Financing Plan**
($ million equivalent)

| Source | Foreign Exchange | Local Currency | Total | Percent |
|---|---|---|---|---|
| The Bank | 20.0 | 17.0 | 37.0 | 64 |
| The National Government | - | 10.8 [a] | 10.8 | 20 |
| Local Government Units | - | 4.8 | 4.8 | 8 |
| Communities | - | 4.8 | 4.8 | 8 |
| **Total** | **20.0** | **37.4** | **57.4** | **100** |

[a] Including the cost of institutional development and administrative support.

## F. Implementation Arrangements

### 1. Execution and Coordination

48. DPWH will be the Executing Agency for the Project. It will manage and coordinate Project activities with other National Government agencies, including DILG and DOH. DILG will be the Implementing Agency for Parts A (i) and (ii); and DOH will be the Implementing Agency for Parts A (iii) and (iv). With appropriate inputs from DILG and the communities, LGUs with TA from DPWH [through its District Engineer's Offices (DEOs)] will design and construct, mainly through private contractors, the water supply facilities. The PMO-RWS, headed by a Project Director, and established for the implementation of foreign-assisted water supply projects including the Bank-financed second rural water supply sector project[1] in the Philippines, will be re-established and suitably strengthened for the Project.

49. DILG will coordinate and implement capacity-building and community management training programs and, through NGOs, initiate community and LGU participation. In addition, DILG, through its own and NGOs resources and assisted by consultants, will carry out socioeconomic surveys and community participation activities for the subprojects. Decisions relating to site selection, subprojects design, and appropriate technology will be made at LGU level with the full participation of the beneficiary communities.

50. DOH will assist LGUs and the communities in the construction of public and household toilet facilities, and implement training for health and hygiene education, and water quality control and surveillance programs.

51. To ensure effective coordination at all levels, synchronized actions and activities by sector agencies, and sustained collaboration for the successful implementation of the Project, the interagency Project Management Committee at the national level, established under Loan No. PHI-1052, will be re-established and continue its operations. Project implementation will involve mainly existing Government staff; only a minimal number of additional staff will be required. An organization chart for Project implementation is shown in Appendix 8.

52. The responsibilities of BWSAs and LGUs will be as follows:

(i) At the community level, BWSAs already established (otherwise the barangay council), assisted by NGOs, will participate in the mobilization of communities and preparation of subproject proposals; and BWSAs, established as a precondition for award of contracts, will assist in construction and be fully in charge of O&M of the facilities.

(ii) The mayor, as chief executive of LGU (municipal level), will be responsible for managing the Project activities at the municipal government level in coordination with DEO and the local DOH office. The Project activities at this level will be the selection and formulation of subproject proposals, implementation of subprojects, and training.

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[1] Loan No. 1052-PHI: *Second Island Provinces Rural Water Supply Sector Project*, for $24.0 million, approved in November 1990. This Project was completed in December 1995.

(iii) At the provincial LGU level, the Governor of the province will have overall responsibility for a provincial board,[1] which will appraise, through the provincial planning and development office, and approve subproject proposals prepared at the municipal government level.

## 2. Subproject Formulation and Approval

### a. Selection and Design

53. The Project will cover communities that lack basic and reliable WSS services. Each subproject under Part B will cover water supply facilities and, on a selected basis, household latrines for one *barangay.* The selection criteria for the subprojects require that the Project community be one that (i) suffers from deficient water supply, (ii) has poor sanitation conditions, (iii) is willing to establish a BWSA, and (iv) demonstrates a willingness to be responsible for O&M costs including depreciation and contribute to the capital cost (in kind through labor for construction) in line with the Government's existing policy. The proposed scheme must use appropriate technology and represent the least-cost solution. The selection criteria, presented in Appendix 9, cover community participation, and technical and financial aspects. These have been developed within the overall strategy to apply appropriate and affordable technology and provide adequate flexibility for the wide variety of geographical and physical conditions that exist in the Project areas. The Government has assured the Bank that, within twelve months of loan effectiveness, comprehensive implementing regulations will be in place providing BWSAs with administrative, operational and collection procedures to perform all of their responsibilities under the Project.

### b. Appraisal and Approval

54. A structured approach will be adopted for the appraisal and approval of subprojects under Part B. It is estimated that there will be about 3,000 eligible subprojects. The economic justification of subprojects will be based on (i) the proven economic viability of the appraised sample subprojects, (ii) the adoption of least-cost design solutions, and (iii) contribution to poverty reduction. DPWH will obtain the Bank's prior approval for the first three subproject proposals—one of each type (shallow and deep wells, and spring development)—from each province concerned. DPWH will furnish the Bank with an application for the approval of each such subproject, containing a description and appraisal of the subproject proposal. All other subprojects will be appraised and approved at the provincial level by the provincial board with documentation being made available to the head office of DPWH to ensure consistency of treatment across provinces. Documentation relating to the subproject proposals will be retained by DPWH and made available to the Bank on request. The Bank will carry out audits on an ex post facto basis on a selected number of these subprojects.

### c. Review and Appraisal of Subprojects

55. About 40 of the 200 subprojects that have been prepared were reviewed by Bank Missions. In addition, a sample of eight subprojects have been fully appraised. The subprojects

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[1] The provincial boards already exist in all the provinces. The offices consist of members from all the line agencies' provincial offices, i.e. DPWH, DILG, and DOH. This office will have an important role in the coordination of activities at the provincial LGU level.

appraised have various technical characteristics: (i) shallow wells with hand pumps, (ii) deep wells with hand pumps, (iii) deep wells with submersible pumps and generators, and (iv) protected spring sources with gravity-fed transmission pipelines. On average, 180 households are expected to be covered by the water supply facilities. The formation and registration of BWSAs, the procurement and construction for the eight subprojects appraised, and their commissioning are scheduled from end 1996 to mid 1997. Summary appraisal reports of the eight subprojects appraised, with the projected cash flow statements, are in Appendix 10.[1]

### 3. Budgetary Support

56. The funds to be provided by the Government to the Executing and Implementing Agencies will be channeled through regular budgetary allocations. The Government has given the assurance that adequate funds for the Project will be allocated and released in line with the implementation schedule of the Project. Furthermore, a Memorandum of Agreement prepared among DPWH, DILG, DOH, and each province participating in the Project will provide for the contribution of 10 percent of the total cost of each subproject in a particular province. In addition, the prospective benefits derived from such undertaking will be indicated.

### 4. Implementation Schedule

57. Commencing in mid 1996, the Project is planned to be implemented over a period of five years, with completion expected by 1 August 2001. The implementation schedule/action plan and a first-year implementation program are outlined in Appendix 11. The advance Project preparation activities that have been carried out in about 200 communities in the Project areas through the community management approach will ensure that the Project gets off to a fast start. With the preparatory work already completed and in progress, the implementation schedule is considered to be realistic.

### 5. Nongovernment Organizations

58. Through DILG, NGOs will assist in community management activities, conduct socioeconomic surveys, and monitor subprojects. Women in the beneficiary *barangays* will assist in motivating families to contribute funds and labor for the construction of WSS facilities and for undertaking O&M. Women will also be closely involved in the implementation of health and hygiene education programs. DILG will directly involve NGOs. In addition, the consultants providing services for implementation will associate with suitable locally based NGOs.

### 6. First Year and Midterm Review

59. The Project features (i) an emphasis on an active learning process and substantive beneficiary participation, and (ii) a focus on institution building. In view of this participatory approach, close monitoring at the National Government and local levels is required to ensure smooth implementation. Accordingly, a comprehensive review of the implementation arrangements, including the role of each sector agency as well as Project start-up experience, will be undertaken by the Government and the Bank, one year after loan effectivity. Further, a

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[1] The format of the summary subproject appraisal report was also used under the Bank-financed Loan No. 1052-PHI: *Second Island Provinces Rural Water Supply Sector Project* and is considered appropriate.

comprehensive midterm review will be undertaken. These reviews will focus on implementation arrangements, community management, and physical implementation, including design and technology, O&M arrangements and institutional aspects including training, the health and hygiene education program, and the role of women. The reviews will also assess the Project's progress and achievements against its objectives as well as identify any problems encountered and recommend remedial measures, if required.

### 7. Procurement

60. The procurement of goods and civil works financed under the Bank loans will be in accordance with the Bank's *Guidelines for Procurement.* The country has considerable experience in the implementation of rural WSS schemes. All civil works contracts under the Project will be small and spread over a large geographical area in the 20 Project provinces and 3,000 communities. Since local contractors have adequate capacity to carry out such works, and the individual contracts are too small to be of interest to international contractors, local competitive bidding (LCB) procedures will be used for most civil works contracts, with LCB bidding conducted by LGUs assisted by DEOs of the provinces concerned. Some of the subproject locations may be isolated and, coupled with the generally small scale of work involved, engagement of qualified contractors at a reasonable cost may be difficult. In such a case, a force account will be used to undertake the work. The use of force account will be limited to work packages estimated at less than $50,000 equivalent each. Under the force account, necessary tools and materials may be purchased through direct purchase, subject to a ceiling amount of $50,000. International competitive bidding (ICB) procedures will be applied for supply contracts estimated at $500,000 equivalent or more, while international shopping (IS) procedures will be used for supply contracts with a value of less than $500,000 equivalent (except that supply contracts with a value of less than $50,000 equivalent may be procured by direct purchase). All procurement for supply contracts will be undertaken by PMO-RWS (for pipes, fittings, and hand pumps) and DOH-Environmental Health Services (for toilet bowls and water testing equipment). For the sanitation component, the construction of public and school toilets and district laboratories shall be undertaken through LCB.

### 8. Consulting Services

61. The Project will require consulting services in the fields of water supply engineering, hydrogeology, sanitary engineering, well drilling, health and hygiene education, and financial, organizational and administrative matters for assistance with (i) preparation of socioeconomic surveys, (ii) development of standard WSS designs, (iii) preparation of contract packages and documents, (iv) support to the LGU capacity-building and community management programs, (v) preparation of the health and hygiene program, (vi) review of the water quality control and surveillance program, (vii) supervision and evaluation of Project activities, (viii) organizational development and gender issues, and (ix) support to the activities of the Project Management Office. A total of 148 person-months of domestic consulting services are required. Consulting services for items (i) and (iv) above will be undertaken in close consultation with DILG, and items (v) and (vi) with DOH. The average implementation period per subproject will be about six months to one year. DPWH and LGUs will contribute an input of about 2.5 person-months each of professional staff per subproject. The consultants will be engaged by DPWH in accordance with arrangements satisfactory to the Bank. The outline terms of reference for consulting services are in Appendix 12.

62. Training activities under the capacity-building development program will focus on (i) training in implementation activities of Project staff at the LGU level, and (ii) improving the process of involving Project communities. About 4,000 persons will be trained under the capacity-building program. The training will be carried out in conjunction with the physical implementation of the subprojects.

63. The community management training program will include training (i) the Project communities in forming and managing BWSAs; and (ii) the water supply system operators in O&M, and management of WSS schemes. Available applicable training modules for community-based O&M will be reviewed in preparation for the training activities. Water supply system operators identified mainly from the Project communities will be trained during subproject implementation and, in the process, will develop a comprehensive understanding of the water supply systems that they will subsequently be operating. About 6,000 water supply operators will be trained in O&M.

64. DILG, together with NGOs, will further develop the training program on capacity-building and community management with the assistance of the Project consultants. DILG will implement the capacity-building and community management programs, respectively, including the training activities provided under these programs.

65. DOH, together with NGOs, will develop health and hygiene education, and water quality control and surveillance programs with the assistance of the Project consultants. The program will include (i) mass communication campaigns to educate the Project communities in the causes, effects, and prevention of waterborne and related diseases; (ii) training of about 2,000 LGU health staff in health education principles and methods; (iii) training of about 8,000 persons in carrying out sanitary inspection of WSS facilities, and the collection and analysis of water samples; and (iv) institutional strengthening of the Project communities in carrying out hygiene and sanitation education and water quality surveillance activities more effectively. The health and hygiene education program will be coordinated with the Bank-financed Integrated Community Health Services Sector Project, which covers three provinces supported under SRA.[1]

### 9. Disbursement Procedures

66. Arrangements for disbursements will include the establishment by the Government of an imprest fund account for both loans in accordance with the Bank's *Guidelines on Imprest Fund and Statement of Expenditures Procedures* to ensure the timely release of loan proceeds for the purpose of making payments in local currency. The imprest fund account will be operated and maintained by the Department of Finance. The imprest fund account will allow financing of Project expenditures for (i) civil works contracts awarded on the basis of LCB, and (ii) locally procured construction materials. Liquidation of eligible Project expenditures below $100,000 will be made under the statement of expenditures procedure. The initial amount of advance to the imprest fund account will be $1.0 million for each loan. The Executing Agency, DPWH, will be the focal point for control and monitoring of imprest fund disbursements and statement of expenditures verification. Similar arrangements have been made under the first two Bank-financed rural water supply sector projects and have proved satisfactory.

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[1] Loan No. 1396-(SF): *PHI: Integrated Community Health Services Project*, for $25.9 million, approved in October 1995.

## 10. Reports, Accounts, and Audit

67. The Government will maintain records and accounts adequate to identify goods and services financed out of the proceeds of the loans and to disclose the use thereof in the Project. DPWH, DILG, DOH, and LGUs concerned will have separate accounts for their respective Project components and such accounts and related financial statements will be audited annually, in accordance with sound auditing principles, by auditors whose qualifications, experience, and terms of reference are acceptable to the Bank. PMO-RWS will collect and furnish copies of such audited accounts to the Bank not later than 12 months after the close of each fiscal year. The audited accounts will include financial statements and the auditors' report containing the auditors' opinion on the use of the proceeds of the loans and compliance with the Bank's loan covenants as well as on the use of the procedures for the imprest fund accounts and the Bank's statement of expenditures issued under the Project. PMO-RWS will also prepare quarterly reports under the Project and a Project completion report three months after the physical completion of the Project.

## 11. Cost Recovery, and Operation and Maintenance

68. In the past, O&M of WSS facilities in a sustainable manner was a major problem. To ensure sustainable O&M, the Project design incorporates appropriate organization at all levels, trained community members, preparation of O&M manuals, spare parts availability, systematic training, and periodic monitoring of BWSAs' operations and consumer satisfaction. LGUs will support BWSAs through the community management program, which will establish proper procedures for (i) the collection of fees, (ii) sanctions for nonpayment, (iii) opening and operating bank accounts, and (iv) budget allocations for O&M costs including depreciation.

69. For the constructed subprojects, the communities will pay the entire O&M costs including depreciation. BWSAs, to be established as a precondition for any community's participation in the Project, will be responsible for O&M of constructed facilities. BWSAs will also be responsible for the collection of consumer fees on a regular monthly basis. The fees should be affordable and lower for the households living further away from the public standpipes. The lowest income groups will mostly live within a longer walking distance from a centrally located point source in the more densely populated area, and may be charged less. Through the community management program, proper procedures will be established to strengthen BWSAs.

70. Through the community management approach of the Project, BWSAs will ensure that the beneficiaries are involved in determining an appropriate and affordable service level, are aware of the cost for O&M and depreciation of the proposed WSS facilities, and are fully involved in the O&M programs. BWSAs will be responsible for part of the capital costs through payments in kind by the provision of labor and for full O&M costs including depreciation of the WSS facilities under the Project. The costs of both routine O&M and replacement of assets will be covered by contributions from the communities, partly through payments in kind by the provision of labor.

## 12. Land Acquisition

71. As this is a sector project, specific land requirements have not been identified. However, based on sample subprojects and advance preparatory work in 200 communities, it is estimated that the Project will not involve any major land acquisition but will require small areas of land for the location of point source facilities and rights of way for pipelines. The small

parcels of land and rights of way will be provided by the beneficiary communities, and the community management approach is designed to ensure early identification and resolution of any land acquisition issues. The Government has also assured that the needed land will be acquired in advance of the construction work.

### 13. Benefit Monitoring and Evaluation

72. A BME system has been developed by DPWH in conjunction with the earlier Bank-assisted projects. In consultation with the Bank, the system will further be refined by DPWH, with inputs by NEDA, including social indicators, within six months of loan effectiveness in accordance with the provisions of the Bank's *Handbook for Benefit Monitoring and Evaluation*. DPWH will be responsible for carrying out BME, including indicators for human development, poverty reduction, and women in development.

## G. Executing and Implementing Agencies

73. DPWH has remained responsible for the development of water supply programs and of Level I rural water supply systems. It undertakes TA for engineering and construction activities, particularly with respect to the drilling of wells, development of springs, and improvement of water supply systems through its PMO-RWS. DPWH has the staff strength and experience to implement the Project, and therefore it will be the Executing Agency of the Project and will provide TA to LGUs in implementing the Project through its existing PMO-RWS and DEOs. PMO-RWS is headed by a Project Director. It has 27 technical staff and 14 support staff. In addition, PMO-RWS harnesses the support of DPWH's 15 Regional Director's Offices and 116 DEOs all over the country.

74. DILG provides general administration and institution building assistance to the LGUs, particularly in the establishment and development of BWSAs. DILG is also expected to provide institutional support in the implementation of WSS subprojects at the LGU level. DILG, through its Project Management Office for WSS development with a staff of 74 experienced institutional development officers, is responsible for formulating provincial WSS development plans in association with LGUs. DILG has the capabilities and experience to carry out these activities and will implement the institutional development programs, Parts A (i) and (ii), of the Project through LGUs. All LGUs will be expected to implement WSS subprojects.

75. DOH, through its Environmental Health Office, is mainly responsible for the promotion of rural sanitation, specifically with respect to the construction of public and private latrines. It is also responsible for promoting safe water supplies and is required to assist LGUs to undertake control and surveillance of water quality. DOH operates a central water quality testing laboratory and a network of regional laboratories, and monitors provincial laboratories that also carry out water quality testing of water sources, among others. DOH has the experience and staff strength to enable it to implement, through its field district health offices, Parts A (iii) and (iv) of the Project.

## H. Environmental and Social Measures

### 1. Environmental

76. Overall, the Project is environmentally beneficial. For each of the eight sample subprojects, an initial environmental examination (IEE) has been carried out in accordance with

the Bank's *Environmental Assessment Requirement and Environmental Review Procedures* and the Department of Environment and Natural Resources' Administration Order No. 21, Series of 1992, amending the Revised Rules and Regulations Implementing Presidential Decree 1586 (Environmental Impact Statement System). A summary of the IEEs is in Appendix 13. The subprojects will include the identification of any special environmental concerns that need to be addressed during the design, appraisal, and implementation of the subprojects as well as the present environmental management measures.

77. The Government's environment sector policies, the capabilities of the Environmental Management Bureau, and existing policies and capabilities of the Government agencies involved are adequate. The Government procedures require the preparation of environmental impact assessments (EIAs) for environmentally sensitive subprojects. Any proposed subproject with potentially adverse environmental impacts will not be included under the Project. DPWH will ensure that the IEE or EIA for any subproject proposal is cleared by the Government's Environmental Management Bureau.

### 2. Social Analysis

78. Socioeconomic surveys have been undertaken for 400 subprojects and will be completed for each subproject prior to its formulation and approval. The social analysis covers the following items: (i) beneficiary groups, (ii) beneficiaries' needs, (iii) beneficiaries' demands, (iv) absorptive capacity, (v) gender issues, (vi) affordability and willingness to pay for services, and (vii) formation of BWSAs. The socioeconomic surveys will determine the prospective beneficiaries' present knowledge of attitude toward, and practice of hygiene and sanitation, and will assess the requirement for hygiene education and estimate its likely impact. The community management approach and the socioeconomic surveys in each of the communities will ensure that the beneficiaries are involved in determining an appropriate and affordable service level and that they are aware of the cost for O&M of the proposed water supply systems. Consultations and group meetings with major stakeholders were also undertaken during appraisal. For details regarding the socioeconomic surveys and community participation, see Appendix 14.

79. Subproject preparation, implementation, and arrangements for O&M will be undertaken through close consultation with and the direct participation of the communities that will be involved in the decisions about service level and other standards of the systems, including the selection of the sites and standpipes. A community development expert will be part of the consultants' team.

## V. PROJECT JUSTIFICATION

## A. Economic Analysis

### 1. General

80. The Project will cover about 3,000 selected rural low-income communities in the 20 poorest provinces of the country. The beneficiaries will receive improved access to reliable and potable water supply and appropriate low-cost sanitation facilities. The population coverage in the Project areas will increase from the present estimate of 40 percent to 90 percent in the year 2000 and benefit 2.0 million persons, 80 percent being below the poverty line. The support for community organizations, training, and capability building of LGUs and beneficiary communities will enhance the efficiency and sustainability of the sector program and subprojects.

81. The provision of Level I (point source) water supply systems under the Project will significantly reduce the time spent in the collection of water from remote sources and will directly benefit women and children who share the primary responsibility for carrying water to the household. A sample survey in the Project areas indicates that the average household currently spends up to three hours per day collecting water. Upon implementation of the Project, the time allocated and the burden of physical labor borne by women and children will be significantly reduced. The time saved will become available to households for other economic and social activities, including greater input of labor in agricultural and cottage industry activities, and for child rearing, education, rest, and leisure activities. The contribution of the Project to poverty reduction through the release of time for productive economic activities and education will be particularly significant since 80 percent of the residents of the Project areas are living below the poverty line.

82. The health benefits generated by the Project will be significant as the incidence of illness associated with poor quality water and unsanitary conditions is presently high. The Project will contribute to reduced morbidity and mortality, particularly the high infant morbidity rate in rural Philippines. To the extent that the reduction in the time spent on collecting water can be devoted to rest and leisure activities, improvements in the health of women and children can be anticipated. The provision of latrines under the Project will further improve health levels and particularly benefit women. The direct health benefits associated with the Project through the reduction of illness will provide the basis for additional economic benefits through an increased capacity for income generation and education. The health and hygiene education program and the community management program provided under the Project will complement and reinforce the economic and health benefits associated with the WSS components and ensure that the initial gains provided can be sustained and enhanced.

83. The economic analysis of selected sample subprojects carried out during Project preparation has established the viability of the Project. Based on a conservative methodology of quantifiable benefits that was not able to incorporate the health benefits, the weighted average economic internal rate of return (EIRR) for the eight sample subprojects was estimated at 27 percent. The EIRRs, which vary from 17 to 37 percent, were subjected to sensitivity analysis. The results showed that the EIRRs remain acceptable under adverse circumstances. While it has not been possible to quantify the health benefits associated with the Project, their qualitative impact is significant and further enhances the economic viability of the Project. Details of the economic analysis are in Appendix 15.

### 2. Willingness to Pay and Affordability Analysis

84. The results of socioeconomic surveys covering 400 communities indicate that the rural communities in the Project area have given high priority to the development of adequate WSS facilities. The residents have indicated their willingness to actively participate in Project design, assume full responsibility for O&M of the schemes constructed for them, and pay user charges to defray O&M costs and future asset replacement costs. The Government will ensure that Project communities will be responsible for O&M costs including depreciation in accordance with the Government's existing policy. This policy reinforces the community participation approach to the Project by creating a direct and transparent link between the collection of consumer fees from the community and the application of such funds toward O&M of the scheme. To assess the impact of this policy on consumer affordability, tariff requirements were estimated for the sample schemes. The average monthly tariff required to cover the full cost of operating and maintaining the water supply system is estimated to be ₱37 per household,

expressed in July 1995 prices. Within this sample group of schemes, the required monthly tariff ranged from a low of ₱30 to a high of ₱40 per household, depending on the technology used. The analysis of the ability to pay indicates that the tariffs required are consistent with generally accepted guidelines, which consider the cost of WSS as affordable if the charge does not exceed 5 percent of the income of low-income groups. The highest proposed tariff in the sample group, ₱40 per month, represents approximately 3 percent of the income of an average household below the poverty line. At present, the cost would be a minimum of ₱50 per month for households getting water from water vendors. For details regarding the ability to pay analysis, see Appendix 16.

### 3. Tariffs and Subsidies

85. A BWSA will be established as a precondition prior to physical implementation of a subproject to ensure proper O&M, and the setting and collection of water tariffs to cover full O&M costs including future asset replacement costs. The monthly tariffs as proposed in the eight sample subprojects are set to cover O&M costs and build up a surplus equal to the initial investment by the end of the planned design period of ten years.

86. BWSAs will be registered at the Municipal Council. The registration will contain full details regarding the level of monthly tariffs, collection procedures, annual tariffs reviews, opening of a separate BWSA's Bank account, and penalties for nonpayment of water fees. The tariffs are to be determined during the preparation of the subprojects by the LGUs assisted by the DEOs and will cover O&M costs including depreciation. The water tariffs, assessed as a fixed monthly rate per household, will be collected monthly by BWSAs. Beneficiaries living close to the public standpipes will be charged the standard rate, whereas households living further away will be charged a lower rate.[1] The water tariffs will be kept in a separate bank account established by each BWSA. For monthly recurrent standard O&M costs, a fixed amount will be calculated and given to the BWSA's WSS operator each month. The treasurer of BWSA will be authorized to release funds for the monthly O&M expenditures. For replacement of fixed assets, i.e., major repairs, and for release of surplus funds after 10 years, the full Board of BWSA has to authorize the expenditure and the withdrawal of funds from the BWSA bank account. The tariffs are to be collected monthly; however, if a household fails to pay for a period of two months, this household will be named at BWSA's meetings and prevented from utilizing water until its accounts have been fully paid. Peer pressure from the fully paying households will be utilized to effectively force nonpaying households from using the public WSS facilities.

87. It is the National Government's present policy to subsidize 80 percent of the initial capital cost, and LGUs and the communities will each contribute 10 percent of the initial capital cost. This level of subsidy is fully justified considering that the facilities are in SRA or targeted poverty regions of the Philippines and play a major role in reducing rural poverty. The general affordability criterion, which limits tariffs to 5 percent of the household income, would not allow significantly higher cost recovery. However, the tariffs will be set in such a way that the water charges will finance not only O&M costs but also replacement of capital investments. Tariffs will

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[1] It is proposed that beneficiaries living within 50 m walking distance should pay the standard rate while beneficiaries living between 50 and 200 m distance would pay 20 percent less. While these differential rates represent a cross-subsidy in meeting the operational costs, there is a difference in place value provided to the households. According to the design criteria, 200 m would be the longest distance for any beneficiary to walk to collect water.

be set to cover O&M cost as well as depreciation, i.e., so as to finance the replacement of fixed assets after ten years of operation. This level of tariffs has been tested during the appraisal of the eight sample subprojects and was found to be within affordable limits.

### 4. Project Risks

88. Three possible Project risks have been identified: (i) delay in Project implementation caused by lack of institutional capability of LGUs and limited institutional capacity of the communities to operate and maintain the water supply systems, (ii) delay in Project implementation caused by lack of local counterpart funds, and (iii) delay in implementation caused by the peace and order situation. The risk of delays in Project implementation has been addressed through a clear delineation of agency responsibilities, and appropriate mechanisms for coordination. Further, considerable social preparation work has already been undertaken in 400 communities and substantial support is being provided for capacity-building of LGUs and community management training programs. In addition, through the hands-on O&M training program, local water supply system operators will be trained to ensure further community involvement in O&M of the water supply systems. A comprehensive first-year review and a midterm review will be carried out. The possibility of delays in implementation caused by lack of local counterpart funds has been addressed. The local counterpart funds requirements are small and will be partly in kind; the agreement to their being made available on a timely basis will be a prerequisite to the approval of the subprojects. The potential beneficiary communities in the 400 *barangays* studied have indicated their willingness to contribute labor, land, and local building materials during the construction period. Regarding the possible problems with the present peace and order situation in some provinces, the subprojects in these areas are planned to be implemented later as the peace and order situation improves. Since the implementation period of the subprojects, varying between six months and one year, is relatively short, the subprojects can be accommodated within the five-year implementation schedule of the Project. The Project is also planned to be intensively monitored, with at least two field reviews every year, throughout its implementation.

## B. Environment

89. Environmental concerns for which appropriate safeguards will be built into the subproject design include (i) protection of environmentally sensitive areas around the water sources, (ii) provision for the proper collection and disposal of wastewater, (iii) controlled extraction from groundwater sources to ensure that neither aquifer depletion nor saline intrusion takes place in the coastal areas, and (iv) safeguarding the interests of downstream users of spring sources. The Project is expected to have a significant positive impact on the improvement of the environment. In addition, the Project's impact on public health, poverty reduction, and women in development will be positive.

## C. Social Dimensions

### 1. Human Development

90. The Project benefits human development. In addition to health-related benefits, the Project will contribute to human development through improved living standards, improved quality of life, and higher productivity. With improved WSS facilities, the incidence of waterborne diseases will decrease over time. Although the Project is focused on WSS facilities, its real impact will depend on proper use and maintenance of the systems. The Project recognizes that

community participation is central to achieving the envisaged human development objective. Accordingly, the Project includes a community management training program, the involvement of community-based organizations, and other institutional support.

### 2. Poverty Reduction

91. About 80 percent of the households in the Project communities are below the poverty line. The improvement in WSS facilities in the Project communities is expected to provide employment opportunities during the construction phase and to enhance economic growth. During the implementation period in each of the communities, there will be a demand for labor to assist in the construction of WSS facilities. The Project also includes a health and hygiene education program stressing the need for adopting proper sanitary practices. This should lead to increased productivity, resulting in direct economic benefits. The provision of standpipes and hand pump tubewells, affordable tariffs, and environmental sanitation programs will ensure that the beneficiary rural poor population will have access to WSS facilities at affordable prices.

### 3. Women in Development

92. The Project will contribute to more equitable distribution of water to the beneficiaries. Women in particular will benefit from the water supply improvements since collection and storage of water is mainly their responsibility. The improved WSS services under the Project will save time and reduce the physical burden on women, enabling them to engage in more fulfilling and productive activities. As women have considerable influence on the behavioral patterns of communities, an important role for women is foreseen as teachers and disseminators of information on better hygiene practices and proper use of WSS facilities. Women's role in child care will be made easier through better health of children expected from better sanitation brought by the Project. Women will have direct membership in BWSAs. Women's organizations will be involved in leadership development and in training women for regular participation in BWSA meetings.

## VI. ASSURANCES

### A. Specific Assurances

93. The Government has given the following assurances, in addition to the standard assurances, which have been incorporated in the legal documents.

### 1. Selection and Implementation of Subprojects

(i) LGUs (municipal level) included in the Project will prepare a consolidated list of subproject proposals in coordination with the local offices of DPWH, DOH, and the other agencies concerned, and thereafter will submit the subproject proposals to the provincial governor concerned. A BWSA will be established before any subproject is approved for participation in the Project. The provincial boards will appraise, through the provincial planning and development offices, and approve the subproject proposals in coordination with the provincial DPWH offices and thereafter will submit the subproject proposals to PMO-RWS at the central DPWH office.

(ii) LGUs (municipal and provincial level), in coordination with DILG and with the assistance of the local offices of DPWH and DOH concerned, and the communities, will implement the majority of subprojects, while, in particular cases, subprojects may also be implemented by DPWH, DOH and, in the case of Level I water supply subprojects, concerned BWSAs.

(iii) The first three subprojects from each province, after prior approval from the relevant provincial board, will be submitted to the Bank for approval.

**2. Cost Recovery**

(i) The Government will ensure that BWSAs will provide for a part of the capital costs and all O&M costs (including depreciation) related to the WSS facilities constructed and/or rehabilitated under the Project as follows:

(a) for capital costs, BWSAs will provide 10 percent of the capital costs of the water supply facilities in kind; and

(b) for O&M costs, BWSAs will provide the full costs of both routine O&M costs and replacement of assets.

(ii) District laboratories and public toilets will be maintained by LGUs concerned. School toilets will be maintained by the respective school administrations.

**3. First-Year and Midterm Review**

(i) An initial review focusing on the implementation arrangements and physical implementation of WSS subprojects will be carried out by the Government and the Bank after the first year of Project implementation.

(ii) A midterm review of Project implementation will be carried out by the Government and the Bank in the third year of Project implementation, or at any other time as may be agreed upon by the parties, to assess the Project's progress and achievements against its objectives, as well as to identify any problems encountered and to recommend remedial measures, if required.

**4. BWSAs Implementing Regulations**

Within twelve months after loan effectiveness, the Government will amplify and strengthen the Republic Act 6716 Implementing Guidelines (dated April 1989) through inclusion of comprehensive administrative, operational and collection procedures satisfactory to the Bank.

## B. Condition of Disbursement

94. A Memorandum of Agreement among DPWH, DILG, DOH, and each Project province concerned will be prepared to provide for the contribution of 10 percent of the total cost of each subproject in such province. Loan proceeds will be disbursed only to those LGUs within provinces that have executed such Memoranda of Agreement.

## VII. RECOMMENDATION

95. I am satisfied that the proposed loans would comply with the Articles of Agreement of the Bank and recommend that the Board approve:

(i) the loan of $18.5 million to the Republic of the Philippines for the Rural Water Supply and Sanitation Sector Project (the Project) from the Bank's ordinary capital resources, with interest to be determined in accordance with the Bank's pool-based variable lending rate system for US dollar loans and with an amortization period of 25 years, including a grace period of 5 years, and such other terms and conditions as are substantially in accordance with those set forth in the draft Loan Agreement (Ordinary Operations) presented to the Board; and

(ii) the loan in various currencies equivalent to Special Drawing Rights $12.758 million to the Republic of the Philippines for the Project, with a service charge at the rate of 1 percent per annum and with an amortization period of 35 years, including a grace period of 10 years, and such other terms and conditions as are substantially in accordance with those set forth in the draft Loan Agreement (Special Operations) presented to the Board.

MITSUO SATO
President

9 May 1996

## APPENDIXES



## SUPPLEMENTARY APPENDIXES
(available on request)

## DESCRIPTION OF THE SECTOR

### A. Sector Institutions

1. The Department of Public Works and Highways (DPWH) and its attached agencies, particularly the Metropolitan Waterworks and Sewerage System (MWSS), and the Local Water Utilities Administration (LWUA) are still performing the bulk of water supply functions. With the implementation of the Local Government Code of 1991 (RA 7160), however, the local government units (LGUs) are expected to take on an increased role in the sector. Implementation of the Government's environmental sanitation program remains chiefly under the Department of Health (DOH). However, certain functions of DOH were devolved to the LGUs, including the conduct of health and hygiene education and the surveillance of water quality.

2. Briefly, the functions and responsibilities of the various agencies concerned are as follows:

(i) DPWH: In consonance with national plans and policies, this government line agency is responsible for the development of integrated water supply plans and programs. It is also directly involved in providing technical assistance in Level I rural water supply development, which includes engineering and construction activities, particularly with respect to the drilling of wells, development of springs, and improvement of water supply systems through its Project Management Office for Rural Water Supply (PMO-RWS), and 14 Regional and District Offices.

(ii) MWSS: The MWSS is a public corporation created in 1971 under Republic Act No. 6234 (as amended by PD Nos. 425, 1269, and 1406), which provides water supply services to the eight cities and nine municipalities comprising Metro Manila and the adjacent urbanized areas in the provinces of Rizal and Cavite. The agency has responsibility for planning, design, construction, operation and maintenance of water supply and sewerage disposal systems within the jurisdiction. MWSS, which has a capitalization of ₱8.0 billion, develops and operates the system out of revenues, loans, and Government capital subscriptions.

(iii) LWUA: The agency is a specialized lending institution for the promotion, development, and financing of local water utilities or water districts in provincial urban centers. LWUA was created in 1973 through PD 198, known as the Provincial Water Utilities Act, as amended by PD Nos. 768 and 1479. With the issuance of Executive Order 124 in 1987, the agency assumed responsibility over all urban areas outside the jurisdiction of MWSS. The agency is also mandated to provide engineering, management, and institutional assistance to duly formed water districts throughout the country.

(iv) The Water Districts (WDs): WDs are nonprofit, quasipublic, independently administered local water utilities created on local option for the purpose of developing and operating water supply systems in provincial urban centers. Also created under PD 198 which created LWUA, WDs, which number about 560 at present, develop and operate their systems out of loans from LWUA and out of their own revenues.

(v) The National Water Resources Board (NWRB): Formerly called the National Water Resources Council, the agency was created in 1974 through PD 424 and reorganized in 1987 through E.O. 124-A. A multiagency regulating body, NWRB is responsible for the overall coordination and integration of water resources development for water supply, hydropower generation, and irrigation, as well as for the formulation of framework plans and policies. Accordingly, it reviews and approves development plans and programs of all agencies related to the development and management of water resources. The agency, which is composed of the heads of the principal water sector department and agencies, is responsible for resolving issues and conflicts related to water resources development and management.

(vi) LGUs: Under the Local Government Code, it is envisaged that LGUs (provincial and municipality) will eventually, together with the beneficiary communities, be able to assume responsibility for construction and financing the operation and maintenance of their respective water supply and sanitation facilities.

(vii) The Department of the Interior and Local Government (DILG): DILG provides general administration and institution building assistance to LGUs, particularly in the establishment and development of *Barangay* Waterworks and Sanitation Associations (BWSAs). DILG is also expected to provide overall direction in the implementation of all water supply and sanitation projects at LGU level. DILG is also tasked to formulate, in association with LGUs, provincial water supply and sanitation development plans.

(viii) DOH: DOH is mainly responsible for the promotion of rural sanitation. It is also responsible for promoting safe water supply and is tasked to assist LGUs to undertake control and surveillance of water quality. With its operational and capital expenditures coming from its share in the annual budget allotted by the National Government and those from external funding sources, DOH operates a network of regional laboratories and a central laboratory that carry out water supply sampling and testing of water sources, among others.

(ix) The National Economic and Development Authority (NEDA): NEDA is the general policy-making body for economic and development planning of the country. NEDA has an Infrastructure Staff, which reviews project proposals and recommends policy directions and guiding principles after consultation with concerned Government agencies and groups. The Infrastructure Staff acts as the secretariat to the Interagency Infrastructure Committee.

## B. Sector Reforms

3. The Government is in the process of instituting several sector reform measures as a result of studies undertaken for the purpose and the enactment of the Local Government Code of 1991 (RA 7160).

4. The Board of NEDA passed in March 1994, NEDA Board Resolution Nos. 4 and 5 (NBR4S94, NBR5S94). The main features of NBR4S94 are the strengthening of the regulatory

role of NWRB, more autonomy for WDs, privatization of existing WDs to be vigorously pursued whenever feasible, and LGUs to play a larger role, as feasible, in the provision of water supply and sanitation services in areas not covered by MWSS and WDs. NBR5S94 basically deals with matters concerning the strategy to be followed for development in the sewerage and sanitation subsector. This includes the provision of services on the basis of communities' ability and willingness to pay and the establishment of a Central Project Support Office to assist LGUs with the preparation and implementation of sewerage and sanitation projects.

5. A Water Summit was convened by the President of the Philippines on 9 December 1994 in Malacañang. It was attended by the relevant Cabinet Secretaries, officials from sector agencies, representatives of the External Support Agencies, and selected private sector representatives. As a result of the Water Summit, the President signed Memorandum Orders (MOs) 243 and 244. MO 243 renamed cabinet Cluster G as Water Resources Management Cluster, to serve as the advisory committee of the President and the Cabinet in all matters relating to water resources management. MO 244 approved the implementation of the Water Summit Action Plan.

6. Upon the initiative of NEDA and DILG, a Concept Paper was formulated as a prelude to the preparation of the "Implementing Rules and Regulations" (IRR) of clause (g) of NBR4S94. The Concept Paper defined the roles of sector agencies and the mechanisms to govern the implementation and management of water supply and sanitation projects by LGUs. A detailed IRR has been circulated to sector agencies for review. A final version of the IRR is expected to be completed shortly.

## C. Water Supply and Sanitation Coverage

7. In 1995, around 45 million or 69 percent of the total Philippine population of about 65 million had access to public potable water supply systems. The service covers

(i) about 6.5 million or 62 percent of the population in Metro Manila and its adjoining areas that are directly served by MWSS, which provide a combined service level of piped individual house connections and communal or public faucets;

(ii) around 18.5 million or 70 percent of the population in other urban areas under the jurisdiction of LWUA and LGUs; and

(iii) approximately 20 million or 70 percent of the population in the rural areas, which fall under the area of responsibility of DPWH and LGUs.

8. The rest of the population or approximately 31 percent of the total still depend largely on water from sources of doubtful quality and quantity such as rivers, ponds, rain collectors and open dug wells.

9. In 1995, around 50 million or 76 percent of the total population had access to sanitary toilet facilities. Service coverage was about 80 percent of households in urban areas and 70 percent of households in rural areas. In cities and other urban areas, the dominant toilet facilities are latrines connected to private septic tanks. Excreta disposal facilities in the rural areas consist primarily of pit privies or on-site toilets usually separate from the dwelling sites.

**MAJOR AID AGENCIES' ASSISTANCE TO THE WATER SUPPLY AND SANITATION SECTOR**

| | Agency | Assistance |
|---|---|---|
| 1. | World Bank | Five loans totaling $267.0 million. The latest loan is the Angat Water Supply Optimization Project (amount $40.0 million) cofinanced with the Bank and OECF. Technical assistance for a Water Supply Sector Reform Study. Technical assistance on private sector participation in the water supply and sanitation (WSS) sector. |
| 2. | United Nations Development Programme/World Bank (UNDP/WB) | A technical assistance program is being extended to the Department of the Interior and Local Government (DILG), local government units (LGUs), and selected Barangay Waterworks and Sanitation Associations (BWSAs) to enhance their capacities to plan, implement, and manage WSS systems. |
| 3. | UNICEF | In Palawan Province, a community-based rural water supply program. |
| 4. | Australian Agency for International Development (AusAID) | A rural water supply program is being undertaken in Central Visayas applying regional and community-based approaches. |
| 5. | Overseas Economic Cooperation Funds (OECF) | Three rural water supply projects, one sewerage project in Baguio and the Angat Water Supply Optimization Project (amount $80.0 million) co-financed with the Bank and the World Bank. |
| 6. | Japan International Cooperation Agency (JICA) of Japan | A groundwater study in Manila and a feasibility study for rehabilitation of the Balara water treatment plant. |
| 7. | United States Agency for International Development (USAID) | A *barangay* water program for construction of small rural water supply schemes in communities with a population less than 10,000. |
| 8. | Danish International Development Agency (DANIDA) | A feasibility study for control of pollution in the Pasig River in Metro Manila. Development of a water supply and sanitation data bank. |
| 9. | Government of France | A feasibility study for a water supply project in Rizal Province. |
| 10. | GTZ | A national rural water supply and sanitation on-going program, and also special technical assistance programs for cost-recovery measures and monitoring and evaluation. |

## BANK'S ASSISTANCE TO THE WATER SUPPLY AND SANITATION SECTOR

| | Number | Title | Type | Approval Date | Amount ($m) |
|---|---|---|---|---|---|
| A. | Loans | | | | |
| 1. | 190-PHI | Manila Water Supply | | 28 Aug 1974 | 51.30 |
| 2. | 251-PHI | Provincial Cities Water Supply | | 16 Dec 1975 | 16.80 |
| 3. | 351-PHI | Second Manila Water Supply | | 07 Sep 1978 | 49.00 |
| 4. | 457-PHI | Manila Sewerage | | 24 Jun 1980 | 42.80 |
| 5. | 545-PHI | Water Supply Sector | | 25 Nov 1981 | 46.00 |
| 6. | 645-PHI | Manila Water Supply Rehabilitation | | 27 Oct 1983 | 39.30 |
| 7. | 812-PHI | Island Provinces Rural Water Supply Sector | | 04 Dec 1986 | 24.00 |
| 8. | 947-PHI | Second Manila Water Supply Rehabilitation | | 24 Jan 1989 | 26.40 |
| 9. | 986-PHI | Angat Water Supply Optimization | | 14 Nov 1989 | 130.00 |
| 10. | 1052-PHI | Second Island Provinces Rural Water Supply | | 20 Nov 1990 | 24.00 |
| 11. | 1056-PHI(SF) | Metropolitan Cebu Water Supply | | 29 Nov 1990 | 16.00 |
| 12. | 1057-PHI | Metropolitan Cebu Water Supply | | 29 Nov 1990 | 6.00 |
| 13. | 1150-PHI | Manila South Water Supply | | 19 Dec 1992 | 31.40 |
| 14. | 1217-PHI | Umiray-Angat Transbasin Technical Assistance | | 22 Dec 1992 | 2.60 |
| 15. | 1269-PHI | Municipal Water Supply | | 25 Nov 1993 | 43.20 |
| 16. | 1379-PHI | Umiray-Angat Transbasin | | 21 Sep 1995 | 92.00 |
| | **Subtotal A** | | | | **640.80** |
| B. | Technical Assistance | | | | |
| 1. | 87-PHI | Manila Water Supply | PP | 05 May 1973 | 0.05 |
| 2. | 433-PHI | Bulacan Bulk Water Supply Scheme | PP | 25 Nov 1981 | 0.15 |
| 3. | 779-PHI | Water Supply and Sanitation Sector Profile | PP | 20 Jun 1986 | 0.05 |
| 4. | 1039-PHI | Angat Water Supply Optimization | PP | 21 Sep 1988 | 0.10 |
| 5. | 1219-PHI | Institutional Strengthening of MWSS | A&O | 10 Nov 1989 | 0.30 |
| 6. | 1268-PHI | Cebu Water Supply Phase II | PP | 29 Jan 1990 | 0.67 |
| 7. | 1270-PHI | Umiray-Angat Transbasin Study | PP | 19 Feb 1990 | 1.27 |
| 8. | 1422-PHI | Training System for Rural Water Supply Personnel | A&O | 20 Nov 1990 | 0.13 |
| 9. | 1423-PHI | Second Manila Sewerage | PP | 23 Nov 1990 | 0.25 |
| 10. | 1513-PHI | Manila North-East Water Supply | PP | 07 May 1991 | 1.28 |
| 11. | 1268-PHI | Cebu Water Supply Phase II (Supplementary) | PP | 24 Jul 1991 | 0.05 |
| 12. | 1845-PHI | Second Provincial Towns Water Supply | PP | 25 Jan 1993 | 0.10 |
| 13. | 1513-PHI | Manila North-East Water Supply (Supplementary) | PP | 23 Jul 1993 | 0.05 |
| 14. | 1995-PHI | Institutional Strengthening of LWUA | A&O | 25 Nov 1993 | 0.59 |
| 15. | 2254-PHI | MWSS Operational Strengthening Study | A&O | 24 Dec 1994 | 0.60 |
| 16. | 2263-PHI | MWSS Water Supply Improvement Study | PP | 27 Dec 1994 | 0.58 |
| 17. | 2272-PHI | Small Towns Water Supply and Sanitation Sector | PP | 27 Dec 1994 | 0.10 |
| 18. | 2401-PHI | MWSS Privatization Support | A&O | 21 Sep 1995 | 0.58 |
| 19. | 2417-PHI | Water Resources Management (Angat Reservoir) | A&O | 06 Oct 1995 | 0.10 |
| 20. | 2502-PHI | Private Sector Participation in Urban Development | A&O | 22 Dec 1995 | 0.50 |
| | **Subtotal B** | | | | **7.50** |
| | **Total, Loans and Technical Assistance (A + B)** | | | | **648.30** |

## LESSONS LEARNED INCORPORATED IN THE PROJECT

| Lessons Learned from Past Bank-Assisted Projects | Proposals in Rural Water Supply and Sanitation Sector Project |
|---|---|
| Greater emphasis should be placed on institutional strengthening measures, particularly at the local level. | A capacity building program for sector agencies, LGUs and BWSAs will be implemented for a period of four years.<br><br>A major focus of the consulting services will be institutional strengthening. |
| A comprehensive approach to water quality investigation, testing, and surveillance is required. | A comprehensive water quality control and surveillance program will be undertaken under the Project including provision of water quality testing equipment, construction and operation of district laboratories, and the formulation and application of a responsive water quality control and surveillance program. |
| Clearer and more responsive delineation of responsibilities and/or roles among concerned national agencies, provincial and municipal local government units (LGUs) and the Barangay Waterworks and Sanitation Associations (BWSAs) is required. | Clear delineation of responsibility of the central and local agencies involved has been outlined, taking account of the decentralization policy and the need for the transition arrangements to consider existing capacities of the agencies. |
| BWSAs or other suitable community-based organization needs to be formed prior to subproject approval. | Formation of community organizations and BWSAs has been made a prerequisite to subproject approval and actual physical implementation. |
| Community organization improvements are essential. | Part of the capacity building program is for the strengthening of the community organization activities. |
| Greater beneficiary and LGU participation is required. | Participatory approaches have been used in the design of the Project, and a process approach will be adopted in its implementation. |
| There is a need for more careful subproject site selection. | Site selection criteria developed for the Project together with greater involvement of the community and the LGU concerned will ensure better selection of sites for subprojects. |
| Cost recovery aspects need to be reviewed to enhance sustainability. | Cost recovery and cost sharing are built in the design of the Project. Contribution of land or in kind is envisaged together with full recovery of O&M costs, including depreciation. |
| Improved local capacity for operation and maintenance (O&M) is required. | The training programs at community/BWSA level as well as the formulation of O&M guidelines will guarantee improved local capacity to deal with O&M. |
| A greater involvement of women in water supply management enhances the sustainability of the water supply system. | Specific measures for greater involvement of women in the decision-making process for WSS facilities have been outlined. |

## PROFILE OF THE PROJECT AREAS

| Province/Region | Estimated 1995 Population | | | No. of Municipalities | No. of Barangays |
|---|---|---|---|---|---|
| | Urban | Rural | Total | | |
| Abra, Cordillera Autonomous Region (CAR) | 44,020 | 140,419 | 184,439 | 27 | 303 |
| Agusan del Sur, Region X | 102,512 | 317,408 | 419,920 | 14 | 312 |
| Antique, Region VI | 117,114 | 288,812 | 405,926 | 18 | 690 |
| Aurora, Region IV | 60,569 | 78,503 | 139,072 | 8 | 153 |
| Basilan, Region IX | 43,156 | 194,850 | 238,006 | 10 | 255 |
| Batanes, Region II | 5,028 | 9,945 | 14,973 | 6 | 29 |
| Benguet, CAR | 256,300 | 225,810 | 482,110 | 13 | 140 |
| Biliran, Region VIII | 30,798 | 87,138 | 117,936 | 8 | 132 |
| Eastern Samar, Region VIII | 128,259 | 200,434 | 328,693 | 2 | 597 |
| Guimaras, Region VI | 13,979 | 103,889 | 117,868 | 3 | 96 |
| Ifugao, CAR | 15,871 | 131,159 | 147,030 | 10 | 175 |
| Kalinga-Apayao, CAR [a] | 30,629 | 180,762 | 211,391 | 15 | 381 |
| Masbate, Region V | 149,790 | 449,023 | 598,813 | 21 | 650 |
| Mt. Province, CAR | 10,506 | 105,665 | 116,171 | 10 | 243 |
| Romblon, Region IV | 227,383 | 50,235 | 277,618 | 8 | 219 |
| Southern Leyte, Region VIII | 65,897 | 255,610 | 321,507 | 19 | 600 |
| Sulu, Autonomous Region of Muslim Mindanao (ARMM) | 80,977 | 387,879 | 468,856 | 18 | 410 |
| Surigao del Sur, Region XIII | 207,756 | 243,531 | 451,287 | 13 | 408 |
| Tawi-Tawi, ARMM | 43,180 | 184,551 | 227,731 | 10 | 203 |
| **TOTAL** | **1,633,724** | **3,635,623** | **5,269,347** | **233** | **5,996** |

[a] Since June 1995, this province has split into two provinces.

## PROJECT FRAMEWORK

| Design Summary | Targets | Project Monitoring Mechanisms | Risks/Assumptions |
|---|---|---|---|
| **1. Goals/Sector/Area Objectives** | | | |
| Improve living condition, public health standards, and access to safe and reliable water supply and sanitation services in the country. | o Increase population coverage with access to safe and adequate rural water supply from present 20 million persons (70%) to 28 million (90%) in 2000. | – Socioeconomic surveys at midterm and Project completion | – *Institutional capabilities*<br>– Local counterpart financing<br>– Law and order situations |
| **2. Purpose (Immediate Objective)** | | | |
| Provide safe, adequate, and reliable water supply and sanitation services to selected rural, low–income communities in the 20 poorest provinces in the country. | o In the selected 20 provinces, increase the rural population coverage served by safe water supply from 1.5 million persons (40%) to 3.5 million persons (90%) by the year 2000. Of the 2.0 million additional persons served, 80 percent are below the poverty line. | – Socioeconomic surveys at midterm and project completion<br>– PCR/Project performance appraisal report (PPAR)<br>– Project Progress Reports | – Infrastructure is not managed and maintained.<br>– Environmental ill effects due to additional wastewater |
| **3. Project Components/Outputs** | | | |
| **3.1 Institutional Development** | o Establish 3,000 fully staffed *Barangay* Water–works and Sanitation Associations (BWSAs) | – Project progress reports and Review Missions | – The communities are not adequately involved in planning, design, and construction. |
| – Capacity Building | | | |
| – Community Management | o Organize communities in 3,000 *barangays*<br>o Prepare 3,000 Community Action Plans, one for each *barangay* | – Project progress reports and Review Missions | – Government agencies and NGOs do not work effectively together.<br>– NGOs are not effective. |
| – Health and Hygiene Education | o Train BWSAs to conduct Health and Hygiene Education Programs | | – Community wishes, priorities and constraints are not adequately taken into account. |
| **3.2 Physical Infrastructure Development and Social Services Enhanced** | | | |
| – Water Supply and Sanitation | o Improve and expand water supply and sanitation in 3,000 *barangays*. | – Project progress reports and Review Missions | – Local government does not adequately staff the new BWSAs and DLs. |
| – Water Quality Control and Surveillance | o Construct 50 new fully staffed and equipped district laboratories (DLs) | | – Local construction contractors are not effective.<br>– Water sources are inadequate. |

## PROJECT FRAMEWORK

| Design Summary | Targets | Project Monitoring Mechanisms | Risks/Assumptions |
|---|---|---|---|
| **3.3 Project Management** | o Establish Project Management Systems | – Project progress reports and Review Missions | – Project office not set up on time.<br>– Project Director is not competent.<br>– Consultants are not competent.<br>– Poor coordination of components.<br>– Counterpart funds are not available on a timely basis. |
| **4. Activities** | **Inputs** | | |
| **4.1 Communities Organized and Strengthened** | 3,000 communities to be served | – Project progress reports and Review Missions | – LGUs cannot deliver counterpart staff. |
| – Appointment of Consultants and NGOs | | | |
| – Fielding of Community Organizer | | | |
| – Preparation of Community Water Supply Report | | | |
| **4.2 Physical Infrastructure and Social Services**<br>**Rural Water Supply and Sanitation** | 1,600 springs to be developed | – Project progress reports and Review Missions | – Right of way acquisition delays schedule. |
| – Surveys and Investigation | 2,500 shallow wells with hand pumps | | |
| – Construction of Rural Water Supply and Sanitation Facilities | 2,000 deep wells with hand pumps | | |
| | 26 deep wells with submersible pumps and generators | | |
| | Rehabilitation of 2,130 Level I systems | | |
| | Construction of 41,380 household and public toilets | | |
| **Primary Health Care and Water Quality Control** | | | |
| – Construction of new DLs | Construction of 50 DLs | | |
| **4.3 Project Management** | | | |
| – Appointment of Implementation Consulting Services | Domestic: 148 person–months | – Project progress reports and Review Missions | – Delays in establishing Provincial Project Implementation Teams |
| | **Total Cost: $57.4 million (including IDC)** | | |

Appendix 6

## SUBPROJECTS DESIGN CRITERIA

| | | |
|---|---|---|
| 1. | Design Period (Years) | |
| | a. Shallow Well | 10 |
| | b. Deep Well | 10 |
| | c. Spring | 10 |
| 2. | Population | |
| | a. Annual Growth Rate (%) | 2.4 |
| | b. Average Household Size (Persons) | 6 |
| | c. Design Population (DP), Years (n) | (Present Population x $1.024)^n$ |
| 3. | Per Capita Water Consumption (liters per capita per day [lpcd]) | 20 to 30 |
| 4. | Average Day Demand | DP x lpcd |
| 5. | No. of Households Served by Each Public Standpipe | 25 to 100 |
| 6. | Maximum Distance of Households from Public Standpipe | |
| | a. Distance (meters) | 200 |
| | b. Hydraulic gradient (%) | 30 |
| | c. Difference in Elevation (meters) | 60 |
| 7. | Water Quality | Compliance with Philippines National Standards for Drinking Water of 1993. |
| 8. | Drainage | Drainage with a minimum length of 10 meters from the well site will be provided. A grey water disposal area will be integrated in the design. |

Appendix 7

## PROJECT COST ESTIMATES [a]

| Category | Physical Targets [b] | Unit Cost ($) | Foreign ($ '000) | Local [c] ($ '000) | Total ($ '000) |
|---|---|---|---|---|---|
| **A. INSTITUTIONAL DEVELOPMENT** | | | | | |
| 1. Capacity-building program [d] | 1 | 481 | - | 481 | 481 |
| 2. Community management program | 1 | 577 | - | 577 | 577 |
| 3. Health and hygiene education program [d] | 1 | 385 | - | 385 | 385 |
| 4. Water quality control and surveillance program [d] | 1 | 135 | - | 135 | 135 |
| **Subtotal** | | | - | **1,578** | **1,578** |
| **B.I. WATER SUPPLY [e]** | | | | | |
| 1. Development of springs | 1,600 | 14,808 | 10,770 | 12,924 | 23,693 |
| 2. Construction of shallow wells with hand pumps | 2,500 | 846 | 577 | 1,538 | 2,115 |
| 3. Construction of deep wells with hand pumps | 2,000 | 6,346 | 3,461 | 9,230 | 12,692 |
| 4. Construction of pilot deep wells with diesel-driven pump | 26 | 10,577 | 75 | 200 | 275 |
| 5. Installation of pilot water treatment facilities | | | | | |
| (a) Iron/manganese removal | 30 | 1,058 | - | 32 | 32 |
| (b) Saline water removal | 5 | 12,741 | 58 | 6 | 64 |
| 6. Rehabilitation of | | | | | |
| (a) Wells | 2,000 | 508 | 277 | 739 | 1,016 |
| (b) Springs and Transmission Lines | 130 | 4,231 | 150 | 400 | 550 |
| 7. Cost of Land/Right of Way | | - | - | 1,185 | 1,185 |
| 8. Operation and Maintenance | | | - | 577 | 577 |
| 9. Hand Tools | 125 | 801 | 91 | 9 | 100 |
| 10. Project Management/Consulting Services | | | - | 900 | 900 |
| 11. Administrative Support | | | - | 2,000 | 2,000 |
| **Subtotal** | | | **15,459** | **29,740** | **45,199** |
| **B.II. SANITATION** | | | | | |
| 1. Provision of household toilet bowls and cement | 41,380 | 15 | 621 | 6 | 627 |
| 2. Construction of school toilets | 125 | 11,538 | - | 1,442 | 1,442 |
| 3. Construction of public toilets in market | 125 | 11,538 | - | 1,442 | 1,442 |
| 4. Construction of pilot district laboratories | 50 | 9,231 | - | 462 | 462 |
| 5. Equipping the district laboratories (per set) | 50 | 33,840 | 1,538 | 154 | 1,692 |
| 6. Procurement of chemicals | 25 | 8,440 | 192 | 19 | 211 |
| 7. Provision of portable water quality analysis kits | 75 | 12,680 | 865 | 86 | 951 |
| 8. Construction of toilet superstructure (per unit) | 41,380 | 33 | - | 1,366 | 1,366 |
| 9. Land | | | - | 315 | 315 |
| 10. Operation and maintenance | | | - | 77 | 77 |
| 11. Administrative support | | | - | 700 | 700 |
| **Subtotal** | | | **3,216** | **6,069** | **9,285** |
| SERVICE CHARGE AND INTEREST DURING CONSTRUCTION | | | 1,338 | - | 1,338 |
| **Grand Total** | | | **20,013** | **37,387** | **57,400** |

[a] In December 1995 prices.

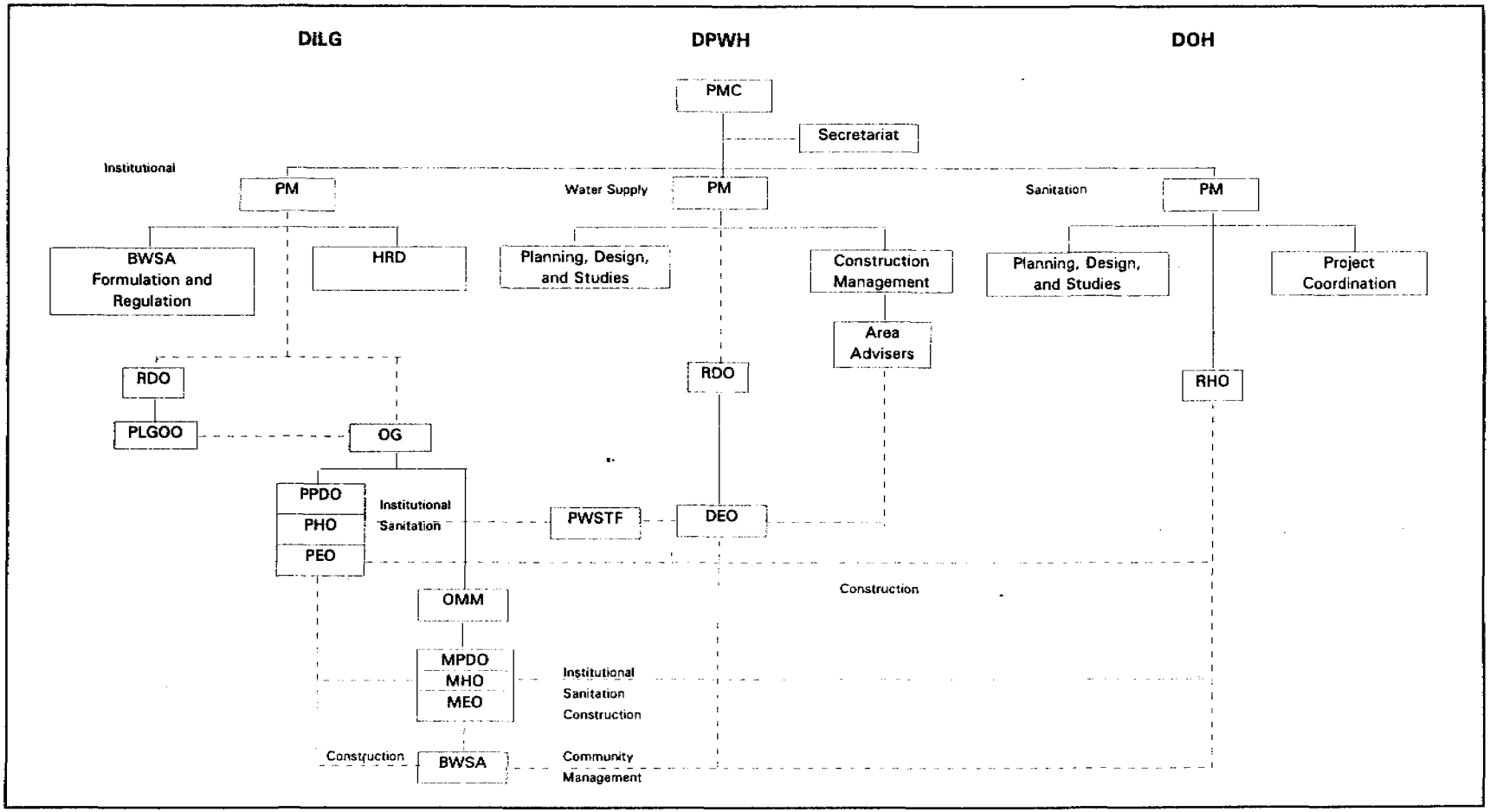
[b] Since this is a Sector Project, these are estimates for cost purposes and the physical targets will be refined during implementation.

[c] The local cost includes duties and taxes estimated at $4.7 million equivalent or 10 percent of total costs of civil works, equipment and materials, and consulting services.

[d] To be financed under the regular budgets of the Departments concerned.

[e] Items B.I.1-B.I.6 include the cost of feasibility studies and detailed design.

## ORGANIZATION CHART FOR PROJECT IMPLEMENTATION




Legend:

| | | | | | |
|---|---|---|---|---|---|
| BWSA | - Barangay Waterworks and Sanitation Association | MEO | - Municipal Engineer's Office | PHO | - Provincial Health Office |
| DEO | - District Engineer's Office | MHO | - Municipal Health Office | PLGOO | - Provincial Local Government Operations Officer |
| DILG | - Department of Interior and Local Government | MPDO | - Municipal Project Development Office | PM | - Project Manager |
| DOH | - Department of Health | OG | - Office of the Governor | PMC | - Project Management Committee |
| DPWH | - Department of Public Works and Highways | OMM | - Office of the Municipal Mayor | PPDO | - Provincial Project Development Office |
| HRD | - Human Resources Department | PEO | - Principal Engineer's Office | RDO | - Regional Director's Office |
| | | | | RHO | - Regional Health Office |

## SELECTION CRITERIA FOR RURAL COMMUNITIES FOR WATER SUPPLY[1]

1. Population from 200 to 5,000 persons. (weight 5%)

2. Felt water needs by the community as demonstrated by (a) present poor water supply (WS) quality, (b) insufficient WS quantity (less than 20 lpcd), (c) distance from households (more than 200 meters), and (d) unreliability of source during dry season. (25%)

3. Community commitment as demonstrated by the establishment of a Barangay Waterworks and Sanitation Association (BWSA) that (a) provides the required land where the water and sanitation facilities will be installed, (b) contributes to the capital cost in kind (labor) or cash, (c) is responsible for and capable of operating and maintaining the system/facility. (20%)

4. Has poor sanitation condition, high incidence of waterborne and water-related diseases and satisfactory initial environmental examination (IEE). (15%)

5. Could afford and willing to pay for the water charges. (15%)

6. Proposed scheme will use appropriate technology and represent least-cost solution. Groundwater from springs and wells that requires minimal or no treatment at all to make it safe is preferable over surface water. Wherever possible, shallow wells will be preferred over deep wells. (10%)

7. Community with low-income level. Priority will be given to communities in poor or depressed areas with an average household income equal to or below P1,000 per month. (10%)

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[1] For a community to be selected under the Project, it should cover all of items 1-7.

| | Particulars | | Score |
|---|---|---|---|
| 1. | Population size | 200 - 300 | 1 |
| | | 300 - 500 | 2 |
| | | 501 - 1000 | 3 |
| | | 1001 - 3000 | 4 |
| | | 3001 - 5000 | 5 |
| 2. | Felt water needs | | |
| | a. poor water quality | | 10 |
| | b. insufficient water quantity | | 5 |
| | c. distance from household | | 5 |
| | d. unreliability of source | | 5 |
| 3. | Community commitment | | |
| | a. provides land | | 4 |
| | b. contributes labor cost in kind | | 8 |
| | c. responsible for and capable of operating and maintaining the facilities | | 8 |
| 4. | Health needs | | |
| | a. poor sanitation condition | | 5 |
| | b. high incidence of waterborne and water-related diseases | | 5 |
| | c. satisfactory IEE | | 5 |
| 5. | Affordability and willingness to pay for water charges | | |
| | a. Affordability | | |
| | (i) | 3-4% | 11-15 |
| | (ii) | 1-2% | 6-10 |
| 6. | Technology | | |
| | a. Use of appropriate technology | | 4 |
| | b. Represent least-cost solution | | 6 |
| 7. | Community household incomes | | |
| | a. Average household income is ₱1001 to ₱3000 per month | | 6-8 |
| | b. Average household income is equal to or below ₱1000 per month | | 10 |

# SUBPROJECT APPRAISAL REPORTS

| | | | | | |
|---|---|---|---|---|---|
| Province: | Benguet | Date: | 24 April 1995 | | |
| Municipality: | Tublay | | | | |
| *Barangay:* | Ambassador | Estimated Cost ($): | | | |
| Facility: | Developed Spring, Transmission Lines, Faucets | | | | |
| Average Household Income Level: | P4,000/month | | Foreign | Local | Total |
| Expected Implementation Schedule: | | Materials and | | | |
| a. BWSA Formation/Registration | 2nd Quarter, 1995 | Equipment | 3,500 | 5,600 | 9,100 |
| b. Procurement | 1st Quarter, 1996 | Civil Works | - | 4,900 | 4,900 |
| c. Construction of Water Facility | 2nd Quarter, 1996 | | 3,500 | 10,500 | 14,000 |
| d. Commissioning | 1st Quarter, 1997 | | | | |

**PROJECTED CASH FLOW STATEMENT AT CURRENT PRICES (P)**

| Item | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 |
|---|---|---|---|---|---|---|---|---|---|---|
| Households served [a] | 250 | 256 | 262 | 268 | 275 | 281 | 288 | 295 | 302 | 309 |
| Annual water tariff [b] | 195 | 214 | 236 | 259 | 285 | 314 | 345 | 380 | 418 | 460 |
| Revenues: | | | | | | | | | | |
| Income from water charges | 48,740 | 54,901 | 61,840 | 69,657 | 78,461 | 88,379 | 99,550 | 112,133 | 126,307 | 142,272 |
| Less: bad debts [c] | 4,874 | 5,490 | 6,184 | 6,966 | 7,846 | 8,838 | 9,955 | 11,213 | 12,631 | 14,227 |
| Net revenues | 43,866 | 49,411 | 55,656 | 62,691 | 70,615 | 79,541 | 89,595 | 100,920 | 113,676 | 128,045 |
| Operating expenses: | | | | | | | | | | |
| Operation and maintenance | 37,000 | 40,700 | 44,770 | 49,247 | 54,172 | 59,589 | 65,548 | 72,103 | 79,313 | 87,244 |
| Income before depreciation | 6,866 | 8,711 | 10,886 | 13,444 | 16,444 | 19,952 | 24,047 | 28,817 | 34,363 | 40,801 |
| Less: Depreciation [d] | | 12,740 | 12,740 | 12,740 | 12,740 | 12,740 | 12,740 | 12,740 | 12,740 | 12,740 |
| Operating Income | 6,866 | (4,029) | (1,854) | 704 | 3,704 | 7,212 | 11,307 | 16,077 | 21,623 | 28,061 |
| Add back: Depreciation | 6,866 | 8,711 | 10,886 | 13,444 | 16,444 | 19,952 | 24,047 | 28,817 | 34,363 | 40,801 |
| Net cash flow | 6,866 | 15,577 | 26,463 | 39,907 | 56,351 | 76,303 | 100,350 | 129,167 | 163,531 | 204,331 |

| | | | | | |
|---|---|---|---|---|---|
| Province: | Abra | Date: | 1 May 1995 | | |
| Municipality: | La Paz | | | | |
| *Barangay:* | Poblacion | Estimated Cost ($): | | | |
| Facility: | Pilot Deep Well with Submersible Pump | | | | |
| Average Household Income Level: | P3,000/month | | Foreign | Local | Total |
| Expected Implementation Schedule: | | Materials and | | | |
| a. BWSA Formation/Registration | 4th Quarter 1995 | Equipment | 2,400 | 3,840 | 6,240 |
| b. Procurement | 1st Quarter, 1996 | Civil Works | - | 3,360 | 3,360 |
| c. Construction of Water Facility | 2nd Quarter, 1996 | | 2,400 | 7,200 | 9,600 |
| d. Commissioning | 4th Quarter, 1996 | | | | |

**PROJECTED CASH FLOW STATEMENT AT CURRENT PRICES (P)**

| Item | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 |
|---|---|---|---|---|---|---|---|---|---|---|
| Households served [a] | 150 | 154 | 157 | 161 | 165 | 169 | 173 | 177 | 181 | 186 |
| Annual water tariff [b] | 406 | 447 | 492 | 541 | 595 | 655 | 720 | 792 | 871 | 958 |
| Revenues: | | | | | | | | | | |
| Income from water charges | 60,960 | 68,865 | 77,345 | 87,121 | 98,133 | 110,537 | 124,509 | 140,247 | 157,974 | 177,942 |
| Less: bad debts [c] | 6,096 | 6,867 | 7,734 | 8,712 | 9,813 | 11,054 | 12,451 | 14,025 | 15,797 | 17,794 |
| Net revenues | 54,864 | 61,799 | 69,610 | 78,409 | 88,320 | 99,483 | 112,058 | 126,222 | 142,177 | 160,148 |
| Operating expenses: | | | | | | | | | | |
| Operation and maintenance | 37,000 | 40,700 | 44,770 | 49,247 | 54,172 | 59,589 | 65,548 | 72,103 | 79,313 | 87,244 |
| Income before depreciation | 17,864 | 21,099 | 24,840 | 29,162 | 34,148 | 39,895 | 46,510 | 54,120 | 62,864 | 72,904 |
| Less: Depreciation [d] | | 24,960 | 24,960 | 24,960 | 24,960 | 24,960 | 24,960 | 24,960 | 24,960 | 24,960 |
| Operating Income | 17,864 | (3,862) | (120) | 4,202 | 9,188 | 14,935 | 21,550 | 29,160 | 37,904 | 47,944 |
| Add back: Depreciation | 17,864 | 21,099 | 24,840 | 29,162 | 34,148 | 39,895 | 46,510 | 54,120 | 62,864 | 72,904 |
| Net cash flow | 17,864 | 38,963 | 63,803 | 92,965 | 127,113 | 167,008 | 213,518 | 267,638 | 330,502 | 403,405 |

[a] Determined based on survey conducted. Population growth is assumed to be 2.6 percent annually.

[b] Computed annually by dividing costs (O&M and depreciation) over the number of households to be served by the system. Price escalation factors using the Bank's rates are imputed for estimation of local costs at current prices.

[c] Bad debts are assumed at 10 percent of projected revenues.

[d] Depreciation expenses used the straight-line method over a 10-year economic life period.

# SUBPROJECT APPRAISAL REPORTS

| | | | |
|---|---|---|---|
| Province: | Kalinga | Date: | 29 April 1995 |
| Municipality: | Tabuk | | |
| *Barangay:* | Agbannawag | Estimated Cost (₱): | |
| Facility: | Deep Well with Hand pump | | |
| Average Household Income Level: | ₱3,500/month | | |
| Expected Implementation Schedule: | | | |
| a. BWSA Formation/Registration | 4th Quarter 1995 | | |
| b. Procurement | 1st Quarter, 1996 | | |
| c. Construction of Water Facility | 2nd Quarter, 1996 | | |
| d. Commissioning | 4th Quarter, 1996 | | |

| | Foreign | Local | Total |
|---|---|---|---|
| Materials and Equipment | 1,443 | 2,308 | 3,751 |
| Civil Works | - | 2,020 | 2,020 |
| | 1,443 | 4,328 | 5,770 |

**PROJECTED CASH FLOW STATEMENT AT CURRENT PRICES (₱)**

| Item | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 |
|---|---|---|---|---|---|---|---|---|---|---|
| Households served [a] | 120 | 123 | 126 | 129 | 132 | 135 | 138 | 142 | 145 | 149 |
| Annual water tariff [b] | 420 | 462 | 508 | 559 | 615 | 676 | 744 | 818 | 900 | 990 |
| Revenues: | | | | | | | | | | |
| Income from water charges | 50,400 | 56,771 | 63,946 | 72,029 | 81,134 | 91,389 | 102,941 | 115,952 | 130,609 | 147,117 |
| Less: bad debts [c] | 5,040 | 5,677 | 6,395 | 7,203 | 8,113 | 9,139 | 10,294 | 11,595 | 13,061 | 14,712 |
| Net revenues | 45,360 | 51,094 | 57,552 | 64,826 | 73,020 | 82,250 | 92,646 | 104,357 | 117,548 | 132,406 |
| Operating expenses: | | | | | | | | | | |
| Operation and maintenance | 37,000 | 40,700 | 44,770 | 49,247 | 54,172 | 59,589 | 65,548 | 72,103 | 79,313 | 87,244 |
| Income before depreciation | 8,360 | 10,394 | 12,782 | 15,579 | 18,849 | 22,661 | 27,099 | 32,254 | 38,235 | 45,162 |
| Less: Depreciation [d] | | 15,002 | 15,002 | 15,002 | 15,002 | 15,002 | 15,002 | 15,002 | 15,002 | 15,002 |
| Operating Income | 8,360 | (4,608) | (2,220) | 577 | 3,847 | 7,659 | 12,097 | 17,252 | 23,233 | 30,160 |
| Add back: Depreciation | 8,360 | 10,394 | 12,782 | 15,579 | 18,849 | 22,661 | 27,099 | 32,254 | 38,235 | 45,162 |
| Net cash flow | 8,360 | 18,754 | 31,535 | 47,114 | 65,963 | 88,624 | 115,723 | 147,977 | 186,212 | 231,374 |

| | | | |
|---|---|---|---|
| Province: | Apayao | Date: | 29 April1995 |
| Municipality: | Conner | | |
| *Barangay:* | Malama | Estimated Cost (₱): | |
| Facility: | Developed Spring, Transmission Lines, Faucets | | |
| Average Household Income Level: | ₱3,000/month | | |
| Expected Implementation Schedule: | | | |
| a. BWSA Formation/Registration | 2nd Quarter 1995 | | |
| b. Procurement | 1st Quarter, 1996 | | |
| c. Construction of Water Facility | 2nd Quarter, 1996 | | |
| d. Commissioning: | 1st Quarter, 1997 | | |

| | Foreign | Local | Total |
|---|---|---|---|
| Materials and Equipment | 3,500 | 5,600 | 9,100 |
| Civil Works | - | 4,900 | 4,900 |
| | 3,500 | 10,500 | 14,000 |

**PROJECTED CASH FLOW STATEMENT AT CURRENT PRICES (₱)**

| Item | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 |
|---|---|---|---|---|---|---|---|---|---|---|
| Households served [a] | 200 | 205 | 210 | 215 | 220 | 225 | 231 | 236 | 242 | 248 |
| Annual water tariff [b] | 355 | 391 | 430 | 473 | 520 | 572 | 629 | 692 | 761 | 837 |
| Revenues: | | | | | | | | | | |
| Income from water charges | 71,000 | 79,974 | 90,083 | 101,470 | 114,295 | 128,742 | 145,015 | 163,345 | 183,992 | 207,249 |
| Less: bad debts [c] | 7,100 | 7,997 | 9,008 | 10,147 | 11,430 | 12,874 | 14,502 | 16,335 | 18,399 | 20,725 |
| Net revenues | 63,900 | 71,977 | 81,075 | 91,323 | 102,866 | 115,868 | 130,514 | 147,011 | 165,593 | 186,524 |
| Operating expenses: | | | | | | | | | | |
| Operation and maintenance | 37,000 | 40,700 | 44,770 | 49,247 | 54,172 | 59,589 | 65,548 | 72,103 | 79,313 | 87,244 |
| Income before depreciation | 26,900 | 31,277 | 36,305 | 42,076 | 48,694 | 56,279 | 64,966 | 74,908 | 86,280 | 99,280 |
| Less: Depreciation [d] | | 36,400 | 36,400 | 36,400 | 36,400 | 36,400 | 36,400 | 36,400 | 36,400 | 36,400 |
| Operating Income | 26,900 | (5,123) | (95) | 5,676 | 12,294 | 19,879 | 28,566 | 38,508 | 49,880 | 64,280 |
| Add back: Depreciation | 26,900 | 31,277 | 36,305 | 42,076 | 48,694 | 56,279 | 64,966 | 74,908 | 86,280 | 99,280 |
| Net cash flow | 26,900 | 58,177 | 94,482 | 136,558 | 185,252 | 241,531 | 306,497 | 381,405 | 467,686 | 566,966 |

[a] Determined based on survey conducted. Population growth is assumed to be 2.6 percent annually.

[b] Computed annually by dividing costs (O&M and depreciation) over the number of households to be served by the system.
Price escalation factors using the Bank's rates are imputed for estimation of local costs at current prices.

[c] Bad debts are assumed at 10 percent of projected revenues.

[d] Depreciation expenses used the straight-line method over a 10-year economic life period.

# SUBPROJECT APPRAISAL REPORTS

Province: Antique
Municipality: San Jose de Buenavista
*Barangay:* San Pedro
Facility: Deepwell with Submersible Pump and Water Tank
Average Household Income Level: ₱4,000/month
Expected Implementation Schedule:

a. BWSA Formation/Registration 4th Quarter, 1995
b. Procurement 1st Quarter, 1996
c. Construction of Water Facility 3rd Quarter, 1996
d. Commissioning 1st Quarter, 1997

Date: 4 July 1995
Estimated Cost ($):

| | Foreign | Local | Total |
|---|---|---|---|
| Materials & Equipment | 3,500 | 5,250 | 8,750 |
| Civil Works | - | 4,710 | 4,710 |
| Total | 3,500 | 9,960 | 13,460 |

**PROJECTED CASH FLOW STATEMENT AT CURRENT PRICES (₱)**

| Item | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 |
|---|---|---|---|---|---|---|---|---|---|---|
| Households served [a] | 200 | 205 | 211 | 216 | 222 | 227 | 233 | 239 | 246 | 252 |
| Annual water tariff [b] | 360 | 396 | 436 | 479 | 527 | 580 | 638 | 702 | 772 | 849 |
| Revenues: | | | | | | | | | | |
| Income from water charges | 72,000 | 81,259 | 91,709 | 103,503 | 116,813 | 131,836 | 148,790 | 167,924 | 189,519 | 213,891 |
| Less: bad debts [c] | 7,200 | 8,126 | 9,171 | 10,350 | 11,681 | 13,184 | 14,879 | 16,792 | 18,952 | 21,389 |
| Net revenues | 64,800 | 73,133 | 82,538 | 93,153 | 105,132 | 118,652 | 133,911 | 151,132 | 170,567 | 192,502 |
| Operating expenses: | | | | | | | | | | |
| Operation and maintenance | 37,000 | 40,700 | 44,770 | 49,247 | 54,172 | 59,589 | 65,548 | 72,103 | 79,313 | 87,244 |
| Income before depreciation | 27,800 | 32,433 | 37,768 | 43,906 | 50,960 | 59,063 | 68,363 | 79,029 | 91,254 | 105,258 |
| Less: Depreciation [d] | | 34,996 | 34,996 | 34,996 | 34,996 | 34,996 | 34,996 | 34,996 | 34,996 | 34,996 |
| Operating Income | 27,800 | (2,563) | 2,772 | 8,910 | 15,964 | 24,067 | 33,367 | 44,033 | 56,258 | 70,262 |
| Add back: Depreciation | 27,800 | 32,433 | 37,768 | 43,906 | 50,960 | 59,063 | 68,363 | 79,029 | 91,254 | 105,258 |
| Net cash flow | 27,800 | 60,233 | 98,001 | 141,907 | 192,867 | 251,931 | 320,294 | 399,323 | 490,577 | 595,835 |

Province: Guimaras
Municipality: Jordan
*Barangay:* San Miguel
Facility: Filtration Tank and Elevation Tank
Average Household Income Level: ₱3,500/month
Expected Implementation Schedule:

a. BWSA Formation/Registration 4th Quarter 1995
b. Procurement 1st Quarter, 1996
c. Construction of Water Facility 3rd Quarter, 1996
d. Commissioning 1st Quarter, 1997

Date: 6 July 1995
Estimated Cost ($):

| | Foreign | Local | Total |
|---|---|---|---|
| Materials and Equipment | 3,000 | 4,500 | 7,500 |
| Civil Works | - | 4,040 | 4,040 |
| | 3,000 | 8,540 | 11,540 |

**PROJECTED CASH FLOW STATEMENT AT CURRENT PRICES (₱)**

| Item | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 |
|---|---|---|---|---|---|---|---|---|---|---|
| Households served [a] | 200 | 205 | 211 | 216 | 222 | 227 | 233 | 239 | 246 | 252 |
| Annual water tariff [b] | 480 | 528 | 581 | 639 | 703 | 773 | 850 | 935 | 1,029 | 1,132 |
| Revenues: | | | | | | | | | | |
| Income from water charges | 96,000 | 108,346 | 122,279 | 138,004 | 155,751 | 175,781 | 198,386 | 223,899 | 252,692 | 285,188 |
| Less: bad debts [c] | 9,600 | 10,835 | 12,228 | 13,800 | 15,575 | 17,578 | 19,839 | 22,390 | 25,269 | 28,519 |
| Net revenues | 86,400 | 97,511 | 110,051 | 124,204 | 140,176 | 158,203 | 178,548 | 201,509 | 227,423 | 256,669 |
| Operating expenses: | | | | | | | | | | |
| Operation and maintenance | 37,000 | 40,700 | 44,770 | 49,247 | 54,172 | 59,589 | 65,548 | 72,103 | 79,313 | 87,244 |
| Income before depreciation | 49,400 | 56,811 | 65,281 | 74,957 | 86,004 | 98,614 | 113,000 | 129,406 | 148,110 | 169,425 |
| Less: Depreciation [d] | | 30,004 | 30,004 | 30,004 | 30,004 | 30,004 | 30,004 | 30,004 | 30,004 | 30,004 |
| Operating Income | 49,400 | 26,807 | 35,277 | 44,953 | 56,000 | 68,610 | 82,996 | 99,402 | 118,106 | 139,421 |
| Add back: Depreciation | 49,400 | 56,811 | 65,281 | 74,957 | 86,004 | 98,614 | 113,000 | 129,406 | 148,110 | 169,425 |
| Net cash flow | 49,400 | 106,211 | 171,492 | 246,449 | 332,453 | 431,067 | 544,067 | 673,473 | 821,583 | 991,008 |

[a] Determined based on survey conducted. Population growth is assumed to be 2.6 percent annually.

[b] Computed annually by dividing costs (O&M and depreciation) over the number of households to be served by the system. Price escalation factors using the Bank's rates are imputed for estimation of local costs at current prices.

[c] Bad debts are assumed at 10 percent of projected revenues.

[d] Depreciation expenses used the straight-line method over a 10-year economic life period.

# SUBPROJECT APPRAISAL REPORTS

| | | | |
|---|---|---|---|
| Province: | Agusan del Sur | Date: | 12 July 1995 |
| Municipality: | Prosperidad | | |
| *Barangay:* | Salvacion | Estimated Cost ($): | |
| Facility: | Dev. Spring, Transmission Lines, Faucets | | |
| Average Household Income Level: | P3,000/month | | |
| Expected Implementation Schedule: | | | |
| a. BWSA Formation/Registration | Established | | |
| b. Procurement | 1st Quarter, 1996 | | |
| c. Construction of Water Facility | 3rd Quarter, 1996 | | |
| d. Commissioning | 1st Quarter, 1997 | | |

| | Foreign | Local | Total |
|---|---|---|---|
| Materials and Equipment | 3,500 | 5,600 | 9,100 |
| Civil Works | - | 4,900 | 4,900 |
| | 3,500 | 10,500 | 14,000 |

**PROJECTED CASH FLOW STATEMENT AT CURRENT PRICES (P)**

| Item | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 |
|---|---|---|---|---|---|---|---|---|---|---|
| Households served [a] | 200 | 205 | 211 | 216 | 222 | 227 | 233 | 239 | 246 | 252 |
| Annual water tariff [b] | 362 | 398 | 438 | 482 | 530 | 583 | 641 | 705 | 776 | 854 |
| Revenues: | | | | | | | | | | |
| Income from water charges | 72,400 | 81,711 | 92,219 | 104,078 | 117,462 | 132,568 | 149,616 | 168,857 | 190,572 | 215,079 |
| Less: bad debts [c] | 7,240 | 8,171 | 9,222 | 10,408 | 11,746 | 13,257 | 14,962 | 16,886 | 19,057 | 21,508 |
| Net revenues | 65,160 | 73,540 | 82,997 | 93,670 | 105,716 | 119,311 | 134,655 | 151,971 | 171,515 | 193,572 |
| Operating expenses: | | | | | | | | | | |
| Operation and maintenance | 36,000 | 39,600 | 43,560 | 47,916 | 52,708 | 57,978 | 63,776 | 70,154 | 77,169 | 84,886 |
| Income before depreciation | 29,160 | 33,940 | 39,437 | 45,754 | 53,009 | 61,333 | 70,878 | 81,817 | 94,346 | 108,685 |
| Less: Depreciation [d] | | 35,000 | 35,000 | 35,000 | 35,000 | 35,000 | 35,000 | 35,000 | 35,000 | 35,000 |
| Operating income | 29,160 | (1,060) | 4,437 | 10,754 | 18,009 | 26,333 | 35,878 | 46,817 | 59,346 | 73,685 |
| *Add back: Depreciation* | 29,160 | 33,940 | 39,437 | 45,754 | 53,009 | 61,333 | 70,878 | 81,817 | 94,346 | 108,685 |
| Net cash flow | 29,160 | 63,100 | 102,536 | 148,290 | 201,299 | 262,632 | 333,510 | 415,328 | 509,673 | 618,359 |

| | | | |
|---|---|---|---|
| Province: | Southern Leyte | Date: | 18 July 1995 |
| Municipality: | Maasin | | |
| *Barangay:* | Isagani | Estimated Cost ($): | |
| Facility: | Shallow Well with Hand pump and Water Collection Basin (10 units) | | |
| Average Household Income Level: | P2,000/month | | |
| Expected Implementation Schedule: | | | |
| a. BWSA Formation/Registration | 4th Quarter 1995 | | |
| b. Procurement | 1st Quarter, 1996 | | |
| c. Construction of Water Facility | 2nd Quarter, 1996 | | |
| d. Commissioning | 4th Quarter, 1996 | | |

| | Foreign | Local | Total |
|---|---|---|---|
| Materials and Equipment | 400 | 600 | 1,000 |
| Civil Works | - | 538 | 538 |
| | 400 | 1,138 | 1,538 |

***PROJECTED CASH FLOW STATEMENT AT CURRENT PRICES (P)***

| Item | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 |
|---|---|---|---|---|---|---|---|---|---|---|
| Households served [a] | 100 | 103 | 105 | 108 | 111 | 114 | 117 | 120 | 123 | 126 |
| Annual water tariff [b] | 420 | 462 | 508 | 559 | 615 | 676 | 744 | 818 | 900 | 990 |
| Revenues: | | | | | | | | | | |
| Income from water charges | 42,000 | 47,401 | 53,497 | 60,377 | 68,141 | 76,904 | 86,794 | 97,956 | 110,553 | 124,770 |
| Less: bad debts [c] | 4,200 | 4,740 | 5,350 | 6,038 | 6,814 | 7,690 | 8,679 | 9,796 | 11,055 | 12,477 |
| | 37,800 | 42,661 | 48,147 | 54,339 | 61,327 | 69,214 | 78,115 | 88,160 | 99,497 | 112,293 |
| Net revenues | | | | | | | | | | |
| Operating expenses: | | | | | | | | | | |
| Operation and maintenance | 37,000 | 40,700 | 44,770 | 49,247 | 54,172 | 59,589 | 65,548 | 72,103 | 79,313 | 87,244 |
| Income before depreciation | 800 | 1,961 | 3,377 | 5,092 | 7,155 | 9,625 | 12,567 | 16,058 | 20,185 | 25,049 |
| Less: Depreciation [d] | | 3,845 | 3,845 | 3,845 | 3,845 | 3,845 | 3,845 | 3,845 | 3,845 | 3,845 |
| Operating income | 800 | (1,884) | (468) | 1,247 | 3,310 | 5,780 | 8,722 | 12,213 | 16,340 | 21,204 |
| *Add back: Depreciation* | 800 | 1,961 | 3,377 | 5,092 | 7,155 | 9,625 | 12,567 | 16,058 | 20,185 | 25,049 |
| Net cash flow | 800 | 2,761 | 6,138 | 11,230 | 18,386 | 28,011 | 40,577 | 56,635 | 76,820 | 101,868 |

[a] Determined based on survey conducted. Population growth is assumed to be 2.6 percent annually.

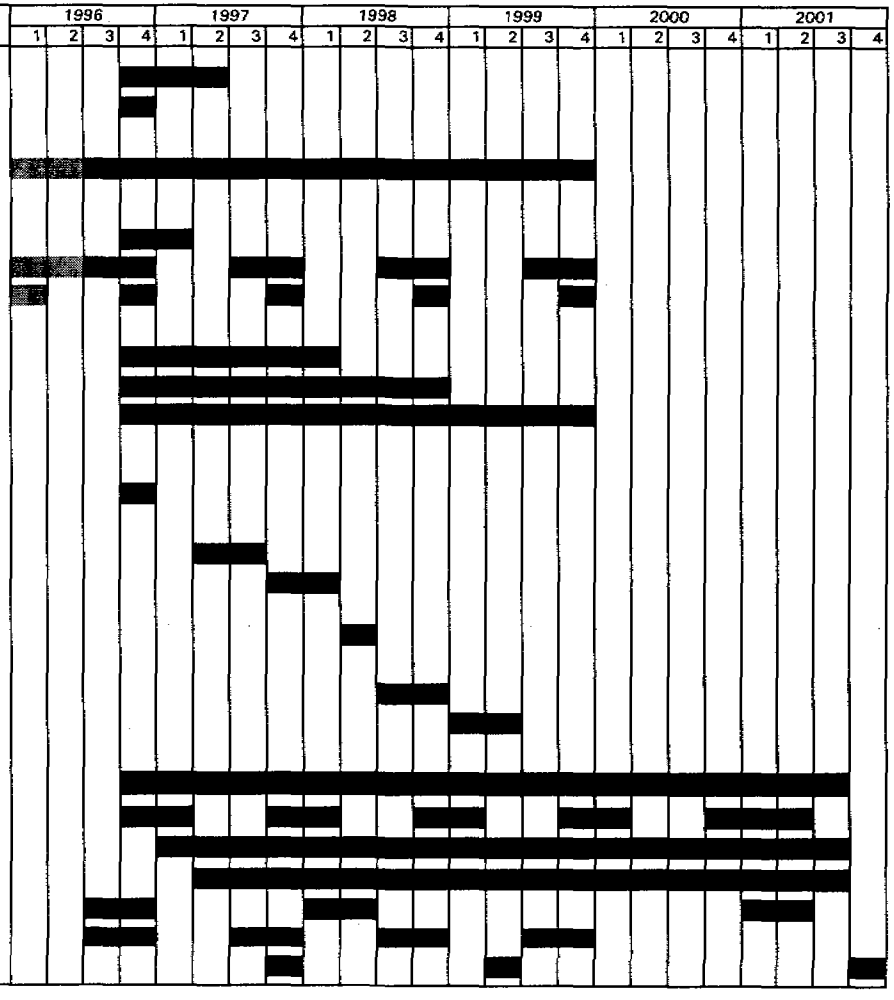
[b] Computed annually by dividing costs (O&M and depreciation) over the number of households to be served by the system. Price escalation factors using the Bank's rates are imputed for estimation of local costs at current prices.

[c] Bad debts are assumed at 10 percent of projected revenues.

[d] Depreciation expenses used the straight-line method over a 10-year economic life period.

## PROJECT IMPLEMENTATION SCHEDULE AND ACTION PLAN

| No. | Activity | Responsible Institution | Duration (Months) |
|---|---|---|---|
| A | Preparatory Activities | | |
| A-1 | Engagement of Institutional Development Consultants | DPWH/DILG | 9 |
| A-2 | Procurement of training equipment | DPWH | 3 |
| B | Preconstruction Activities | | |
| B-1 | Selection of Community and Subprojects<br>(a) WSS<br>(b) District Laboratory | LGU | 48 |
| B-2 | Selection of Implementation Consultants | DPWH | 6 |
| B-3 | BWSA Formation and Registration | DILG/LGU | 30 |
| B-4 | Prequalification of Civil Works Contractors | LGU/DPWH | 15 |
| C | Capacity Building Program | | |
| C-1 | Sector Agencies (Provincial) | DILG | 18 |
| C-2 | LGUs | DILG | 27 |
| C-3 | BWSA | LGUs | 39 |
| D | Procurement | | |
| D-1 | First Procurement | DPWH/DOH | |
| | a. Preparation of Tender Documents | | 3 |
| | b. Approval of Documents | | - |
| | c. Invitation, Evaluation and Award | | 6 |
| | d. Delivery | | 6 |
| D-2 | Second Procurement | DPWH/DOH | |
| | a. Preparation of Tender Documents | | 3 |
| | b. Approval of Documents | | - |
| | c. Invitation, Evaluation and Award | | 6 |
| | d. Delivery | | 6 |
| E | Implementation | | |
| E-1 | Engagement of Consultants | DPWH | 60 |
| E-2 | Bidding for Civil Works Contracts | LGU/DPWH | 33 |
| E-3 | Construction/Rehabilitation of Facilities | LGU/DPWH | 57 |
| E-4 | Completion and Turnover of Facilities to BWSAs | LGU | 54 |
| E-5 | Conduct of BME | DPWH | 18 |
| E-6 | Conduct of Health and Hygiene Education | DOH/LGU | 24 |
| F | First Year/Mid-Term/Final Review | The Bank/DPWH/DILG/DOH/NEDA | 9 |




**Legend:**

BWSA - Barangay Waterworks and Sanitation Association
DILG - Department of Interior and Local Government
DOH - Department of Health
DPWH - Department of Public Works and Highways
LGU - Local Government Unit
NEDA - National Economic and Development Authority

## FIRST-YEAR IMPLEMENTATION PROGRAM

| Category | Physical Targets | Unit Cost ($) | Foreign ($'000) | Local ($'000) | Total ($'000) |
|---|---|---|---|---|---|
| **A. Institutional Development** | | | | | |
| 1. Capacity Building of Local Government Units | | | - | 191 | 191 |
| 2. Community Management Program | | | - | 192 | 192 |
| 3. Health and Hygiene Education Program | | | - | 76 | 76 |
| 4. Water Quality Control and Surveillance Program | | | - | 38 | 38 |
| Subtotal | | | - | 497 | 497 |
| **B.I. Water Supply** | | | | | |
| 1. Springs | 180 | 14,808 | 1,200 | 1,465 | 2,665 |
| 2. Shallow Wells | 250 | 846 | 58 | 154 | 212 |
| 3. Deep Wells | 200 | 6,346 | 346 | 923 | 1,269 |
| 4. Wells (Rehabilitation) | 200 | 508 | 28 | 74 | 102 |
| 5. Springs (Rehabilitation) | 15 | 4,231 | 17 | 46 | 63 |
| 6. Project Management | | | - | 360 | 360 |
| Subtotal | | | 1,649 | 3,022 | 4,671 |
| **B.II Sanitation** | | | | | |
| 1. Household Latrines | 3,000 | 15 | 45 | - | 45 |
| 2. School Latrines | 12 | 11,538 | - | 138 | 138 |
| 3. Public Latrines | 12 | 11,538 | - | 138 | 138 |
| 4. District Laboratories | 5 | 9,231 | - | 46 | 46 |
| 5. Toilet Superstructure | 3,000 | 33 | - | 99 | 99 |
| Subtotal | | | 45 | 421 | 466 |
| **Grand Total** | | | **1,694** | **3,940** | **5,634** |

## CONSULTING SERVICES FOR PROJECT MANAGEMENT
## OUTLINE TERMS OF REFERENCE

### 1. Team Leader/Water Supply Engineer (60 person-months)

(i) Monitor the level of coordination among the Departments of Public Works and Highways (DPWH), Interior and Local Government (DILG), Health (DOH) and local government units (LGUs) on the sector and recommend necessary measures and strategies to strengthen and sustain these vital activities;

(ii) Monitor and conduct a study on the capability of the LGUs to implement rural water supply projects and recommend actions to be undertaken to further enhance their technical and institutional capability;

(iii) Assist in the determination of contract packages and approaches for subproject as well as in the preparation of contract documents for the subprojects to be implemented by LGUs;

(iv) Provide technical support in the activities of the Project management offices;

(v) Design and prepare reports on Benefit Monitoring and Evaluation (BME) to be conducted by LGU/DPWH;

(vi) Prepare technical training programs for LGUs as well as assist LGUs in the administration of the programs;

(vii) Assist DPWH in implementing the computerization program for materials management; and

(viii) Coordinate all other activities being undertaken by other consultants.

### 2. Hydrogeologist (14 person-months)

(i) Assist in the preparation of subproject appraisal report (hydrogeological aspect);

(ii) Assist LGUs in proper well site selection of wells particularly in "difficult areas" like the provinces in the Cordillera Administrative Region (CAR);

(iii) Prepare/update Rapid Assessment of Water Supply Sources Manuals to be distributed to the LGUs concerned;

(iv) Assist LGUs concerned in the evaluation and supervision of sample subprojects and prepare reports and recommendations; and

(v) Assist the Team Leader in the conduct of other project-related activities.

**3. Civil/Sanitary Engineer (26 person-months)**

(i) Review and recommend standard designs, construction drawings, specification and cost estimate particularly on the pilot subprojects included in the Project (i.e. reverse osmosis, iron and manganese removal, and diesel driven mechanic);

(ii) Assist in the supervision during construction evaluation of the pilot subprojects;

(iii) Prepare technical report on the pilot subprojects;

(iv) Review/update existing technical training program and assist LGUs in the conduct of said programs;

(v) Assist in the Project implementation, including preparation of detailed implementation plan, procurement and contracting arrangements, and design of pilot district water laboratories;

(vi) Advise on the selection of suitable areas for pilot district water laboratories;

(vii) Assist in the formulation of monitoring and evaluation scheme for pilot district water laboratories;

(viii) Assist in the monitoring and evaluation of the construction, installation, operation and maintenance, and performance of pilot water district laboratories. Develop recommendations on improvement of design and installation;

(ix) Train staff of the environmental health service/DOH in Project implementation systems and procedures to a level that they will be able to operate without external support; and

(x) Assist the Team Leader in the conduct of other Project-related activities.

**4. Well Drilling Specialist (12 person-months)**

(i) Develop operations and maintenance manuals of the existing drilling rigs being maintained by LGUs;

(ii) Formulate training strategies and workshops for provincial/municipal engineers and backyard well drillers to improve current drilling methods;

(iii) Assess the capacity and well drilling techniques currently employed by the LGUs and backyard well drillers and recommend improvements as required; and

(iv) Assist LGUs in their drilling activities particularly in areas where groundwater replenishment are only through rock fissures, cracks and faults and other geologic discontinuities.

**5. Health and Hygiene Specialist (18 person-months)**

(i) Review training, community development and health education program;

(ii) Review existing health and hygiene education materials and provide assistance in the development of training and new materials;

(iii) Assist in the conduct of training of field implementors;

(iv) Develop recommendations to improve current sanitation practices; and

(v) Prepare operation and maintenance manuals for school and public toilet systems.

**6. Finance and Administration Specialist (12 person-months)**

(i) Assist the LGUs in conducting a financial analysis of LGU capability to provide the necessary logistics in the implementation of rural water supply and sanitation sector subproject;

(ii) Formulate a suitable cost recovery scheme for water supply and sanitation subprojects and identification of potential sources of funds to augment the cash equity; and

(iii) Design overall logistical framework containing the most appropriate sharing of resources and responsibilities among the different levels of LGUs from the provincial to municipal down to barangay level including pilot testing in selected municipalities.

**7. Organization and Administration Expert (6 person-months)**

(i) Assist the Project Management Offices (PMO) in designing a suitable organizational and management model to be adopted by existing and new barangay water supply associations (BWSAs) which will own, operate and maintain the facilities, including pilot-testing in selected barangay; and

(ii) Design a suitable scheme for registration and other related legal systems and procedures for the BWSAs.

## SUMMARY INITIAL ENVIRONMENTAL EXAMINATION (IEE) REPORTS

| | | | | | |
|---|---|---|---|---|---|
| Department | : | Agriculture and Social Sectors Department (East) | | | |
| Division | : | Water Supply, Urban Development and Housing Division | | | |
| Consultant | : | F. Padernal | Date of Review | : | July 1995 |
| Proposed Loans | : | Rural Water Supply and Sanitation Sector Project | Category | : | Appraisal |
| Proposed Loans Amount: | | $18.5 million OCR and $18.5 million ADF | Country | : | Philippines |
| Mission Chief | : | Peter Wallum | | | |
| Executing Agency | : | Department of Public Works and Highways | | | |

### 1. Major Project Components

The Project, based on a sector lending approach, supports the Government's Social Reform Agenda (SRA) for the 20 poorest provinces of the country. The Project emphasizes (i) capacity building of local government units (LGUs); (ii) improved social infrastructure, such as water supply and sanitation (WSS), to meet basic needs; and (iii) poverty reduction. The Project includes comprehensive capacity building and community management programs and the provision of point source water supply systems and public and household latrine facilities. The Project areas cover about 3,000 rural communities with populations ranging from 200 to 5,000 persons in poor provinces located in Luzon, the Visayas, and Mindanao. Presently, only about 40 percent of the rural population in these provinces have adequate access to safe and reliable WSS facilities. In line with the national target, the Project will enhance this coverage to 90 percent in the Project areas by the year 2000 by serving an additional population of about 2.0 million people, of whom about 80 percent are below the poverty line.

### 2. Need for Environmental Impact Assessment

Not needed (see below)

### 3. Comments by Staff Preparing the Initial Environmental Examination (IEE)

The Project is not expected to have any adverse environmental impact. Overall, the Project is environmentally beneficial. The impact of discharging domestic sewage without treatment will not be significant for the following reasons: (i) the water supply systems have been designed based on a conservative per capita supply; (ii) the biological load of the domestic sewage effluent will be minimal because the wastewater will be mostly from kitchens, laundry, and showers (grey water) and will be discharged in existing storm water/drainage canals; and (iii) disposal of human waste will be made by means of septic tanks, pour flush toilets, or pit latrines. Because some of the selected provinces are located in coastal areas, the issue regarding possible salinity intrusion due to overpumping of groundwater has been carefully addressed in the IEE. In the context of the Bank's strategy for the sector, the Project is considered to have a beneficial impact on the environment.

### 4. Review/Comments by the Environmental Specialist

The Bank has reviewed the IEE reports prepared under the Project and has found the environmental impacts acceptable, provided the expected adverse effects are carefully monitored and mitigated during Project implementation.

# INITIAL ENVIRONMENTAL EXAMINATION

Location: Tublay, Ambassador, Benguet — Type of System: Spring

| Actions Affecting Environmental Resources and Values (A) | Damages to Environment (B) | Recommended Protection Measures (C) | IEE (D) No Significant Effect (D1) | Significant Effects Small (D2) | Moderate (D3) | Major (D4) |
|---|---|---|---|---|---|---|
| **A. Natural biological environment** | | | | | | |
| 1. Pollution/contamination of water supply source due to a. liquid waste from toilets, b. washing and bathing around the well/spring, and c. use of insecticides by farmers in ricefields. | - Possible deterioration of water quality. | - Design/construct the system properly. Install water treatment facilities. Consider alternative site. | | X | | |
| 2. Effects on the natural ground features. | - Contour/topography of the project area and its environs may be disfigured. | - Develop only a limited area. Focus development on specific location of spring. | | X | | |
| 3. Effects on natural vegetation | - Root crops and trees may possibly be uprooted or cut. | - Proper Project siting. | X | | | |
| **B. Environmental Hazards Relating to Operations** | | | | | | |
| 1. Disposal of night soil from toilets close to the water source. | - Possible contamination of the water source. Leads to poor health condition of the populace. | - BWSA should be alert. People should report to barangay authorities. | X | | | |
| 2. *Inadequate operation and maintenance* (O&M) of hand pump/electric pump resulting in breakdown. | - *Low pressure or intermittent water* supply. | - *Adequate institutional development.* Conduct of training. | - | | | |
| 3. Water use conflict | - Multiagency conflict | - Fair allotment of water | X | | | |
| **C. Water quality and quantity** | | | | | | |
| 1. Deleterious effect on the quality of water. | - Yield waterborne and related diseases | - Proper O&M. Effective water quality and surveillance. | X | | | |
| 2. Any possible result to diminish the quantity of water. | - Inadequate water supply. Longer queue to collect water from source. | - Proper construction of spring sump and ground reservoir. | X | | | |
| **D. Problems relating to planning and design inadequacies** | | | | | | |
| 1. Inappropriate location of Level I system. | - Poor hydrogeologic approach, which may yield inadequate water supply. | Conduct hydrogeologic investigation before designing a Level I system. | X | | | |
| 2. Failure to incorporate protection to spring/well sources in the design. | - Contamination of raw water will result in higher costs in the form of investments on treatment works. | - Proper design and construction. Alternatively, construct/install simple water treatment facilities. | X | | | |
| 3. Failure to attain desired discharge or yield of well/ spring. | - Lesser quantity of water to be supplied. | - Construct (additional) reservoir. | | X | | |
| 4. Impairment of historical and cultural values. | - Loss or irreparable damage to such values. | - Look for alternative site or route (i.e. transmission lines). | X | | | |
| **E. Problems during construction** | | | | | | |
| 1. *Construction site may cause* grave danger to children. | - *Open excavations like trenches (for* transmission lines) with no adequate protection guards can cause accidents to children. | - *Install safety signs and facilities.* | X | | | |
| 2. Noise generated from well drilling equipment. | | | | | | |

Location: Poblacion, La Paz, Abra — Type of System: Deep Well with Electric Pump

| Actions Affecting Environmental Resources and Values (A) | Damages to Environment (B) | Recommended Protection Measures (C) | IEE (D) No Significant Effect (D1) | Significant Effects Small (D2) | Moderate (D3) | Major (D4) |
|---|---|---|---|---|---|---|
| **A. Natural biological environment** | | | | | | |
| 1. Pollution/contamination of water supply source due to a. liquid waste from toilets, b. washing and bathing around the well/spring, and c. use of insecticides by farmers in ricefields. | - Possible deterioration of water quality | - Design/construct drainage system/ interception canal around the deep well.<br>- Pollutive structures such as septic tanks, cemetary and the like should be at least 25 m away from the deep well.<br>- Raise source structure from floodwater level. | X | | | |
| 2. Effects on the natural ground features. | - Contour/topography of the project area and its environs may be disfigured. Also, surface runoff from well source may affect vegetation. | - Develop only a limited area. Focus development on specific location of well. | X | | | |
| 3. Effects on natural vegetation | - Root crops and trees may possibly be uprooted or cut. | - Proper project siting. | X | | | |
| **B. Environmental hazards relating to operations** | | | | | | |
| 1. Disposal of night soil from *toilets close to the water source.* | - Possible contamination of the water source. *Leads to poor health condition of the populace.* | - BWSA should be alert. People should *report to barangay authorities.* | X | | | |
| 2. Inadequate operation and maintenance (O&M) of electric pump resulting in breakdown. | - Low pressure or intermittent water supply. | - Adequate institutional development. Conduct of training. | X | | | |
| 3. Water use conflict | - Multiagency conflict | - Fair allotment of water | X | | | |
| **C. Water quality and quantity** | | | | | | |
| 1. Deleterious effect on the quality of water. | - Yield waterborne and related diseases. | - Proper O&M. Effective water quality and surveillance. | X | | | |
| 2. Any possible result to diminish the quantity of water. | - Inadequate water supply.<br>- Longer queue to collect water from source. | - Proper construction of well. Drill additional (supplemental) well. | X | | | |
| **D. Problems relating to planning and design inadequacies** | | | | | | |
| 1. Inappropriate location of well | - Poor hydrogeologic approach, which may yield inadequate water supply. | - Conduct hydrogeologic investigation and water resources study before designing a Level I System. | X | | | |
| 2. Failure to incorporate protection to spring/well sources in the design. | - Contamination of raw water will result in higher cost in the form of investments on treatment works. | - Proper design and construction. Alternatively, construct/install simple water treatment facilities. | X | | | |
| 3. Failure to attain desired discharge or yield of well/spring. | - Lesser quantity of water to be supplied. Longer water recovery period. | - Locate better aquifer. Alternatively, drill supplemental well. | X | | | |
| 4. Impairment of historical and cultural values. | - Loss or irreparable damage to such values. | | X | | | |
| **E. Problems during construction** | | | | | | |
| 1. Construction site may cause grave danger to children. | - Open excavations like mud pit and *borehole with no adequate protection* guards can cause accident to children. | - Install safety signs and facilities. | X | | | |
| 2. Noise generated from well drilling equipment. | - Nuisance to people around the drilling area. (Temporary) | - Drill well rapidly to minimize negative effect.<br>- Work only during daytime.<br>- Effective information dissemination. | X | | | |

# INITIAL ENVIRONMENTAL EXAMINATION

Location: Agbannawag, Tabuk, Kalinga

Type of System: Deep Well with Handpump

| Actions Affecting Environmental Resources and Values (A) | Damages to Environment (B) | Recommended Protection Measures (C) | IEE (D) No Significant Effect (D1) | Significant Effects Small (D2) | Moderate (D3) | Major (D4) |
|---|---|---|---|---|---|---|
| **A. Natural biological environment** | | | | | | |
| 1. Pollution/Contamination of Water Supply Source due to: a. liquid waste from toilets, b. washing and bathing around the well/spring, and c. use of insecticides by farmers in ricefields. | - Possible deterioration of water quality. | - Design/construct the system properly. Install water treatment facilities. Consider alternative site. | X | | | |
| 2. Effects on the natural ground features. | - Contour/topography of the project area and its environs may be disfigured. Also, surface runoff from well source may affect vegetations. | - Develop only a limited area. Focus development on specific location of well. | X | | | |
| 3. Effects on natural vegetation | - Root crops and trees may possibly be uprooted or cut. | - Proper project siting. | X | | | |
| **B. Environmental hazards relating to operations** | | | | | | |
| 1. Disposal of night soil from toilets close to the water source. | - Possible contamination of the water source. Leads to poor health condition of the populace. | - BWSA should be alert. People should report to *barangay* authorities. | X | | | |
| 2. Inadequate operation and maintenance (O&M) of electric pump resulting in breakdown. | - Low pressure or intermittent water supply. | - Adequate institutional development. Conduct of training. | X | | | |
| 3. Water use conflict | - Multiagency conflict | - Fair allotment of water | X | | | |
| **C. Water Quality and Quality** | | | | | | |
| 1. Deleterious effect on the quality of water. | - Yield waterborne and related diseases. | - Proper O&M. Effective water quality | | | | |
| | - Inadequate water supply. | and surveillance. | X | | | |
| 2. Any possible result to diminish the quality of water. | - Longer que to collect water from source. | - Proper construction of well. Drill additional (supplemental) well. | X | | | |
| **D. Problems Relating to Planning and Design Inadequacies.** | | | | | | |
| 1. Inappropriate location of Level I system. | - Poor hydrogeologic approach, which may yield inadequate water supply. | - Conduct hydrogeologic investigation and water resources study before designing a Level I System. | X | | | |
| 2. Failure to incorporate protection to spring/well sources in the design. | - Contamination of raw water will result in higher cost in the form of investments on treatment works. | - Proper design and construction. Alternatively, construct/install simple water treatment facilities. | X | | | |
| 3. Failure to attain desired discharge or yield of well/spring. | - Lesser quantity of water to be supplied. Longer water recovery period. | - Locate better aquifer. Alternatively, drill supplemental well. | | | | |
| 4. Impairment of historical and cultural values. | - Loss or irreparable damage to such values. | | X | | | |
| **E. Problems during construction** | | | | | | |
| 1. Construction site may cause grave danger to children. | - Open excavations like mud pit and borehole with no adequate protection guards can cause accident to children. | - Install safety signs and facilities. | X | | | |
| 2. Noise generated from well drilling equipment. | - Nuisance to people around the drilling area. | - Drill well rapidly to minimize negative effect. - Work only during the daytime. - Effective information dissemination | X | | | |

Location: Malama, Conner, Apayao

Type of System: Spring

| Actions Affecting Environmental Resources and Values (A) | Damages to Environment (B) | Recommended Protection Measures (C) | IEE (D) No Significant Effect (D1) | Significant Effects Small (D2) | Moderate (D3) | Major (D4) |
|---|---|---|---|---|---|---|
| **A. Natural biological environment** | | | | | | |
| 1. Pollution/contamination of water supply source due to a. liquid waste from toilets, b. washing and bathing around the well/spring, and c. use of insecticides by farmers in ricefields. | - Possible deterioration of water quality | - Design, construct drainage system/ interception canal around the deep well. - Pollutive structures such as septic tanks, cemetery and the like should be at least 25 m away from the deep well. - Raise source structure from floodwater level. | X | | | |
| 2. Effects on the natural ground features. | - Erosion/siltation/cave-in may occur during spring development. - Contour/topography may be changed due to the construction intake support facilities. | - Diversion canals and silt ponds should be constructed during the construction intake facilities. - Minimal ground works should be planned and uprooting of vegetation especially trees should be prohibited. | | X | | |
| 3. Effects on natural vegetation | - Several trees around the intake structure may be uprooted or cut. (Temporarily) | - Minimize cutting/uprooting of trees. - Replant the watershed area. | X | | | |
| **B. Environmental hazards relating to operations** | | | | X | | |
| 1. Disposal of night soil from toilets close to the water source. | - Possible contamination of the water. | - Disposal site should be at least 25 m away. | | | | |
| 2. Inadequate operation and maintenance (O&M) of electric pump resulting in breakdown. | - Low pressure or intermittent water supply. | - Adequate institutional development. Conduct of training. | X | | | |
| 3. Water use conflict | - Multiagency conflict | - Fair allotment of water | X | | | |
| **C. Water quality and quantity** | | | | | | |
| 1. Deleterious effect on the quality of water. | - Yield waterborne and related diseases. | - Proper O&M. Effective water quality and surveillance. | X | | | |
| 2. Any possible result to diminish the quantity of water. | - Inadequate water supply. - Longer queue to collect water from source. | - Proper construction of spring pump and ground reservoir. | X | | | |
| **D. Problems relating to planning and design inadequacies** | | | | | | |
| 1. Inappropriate location of Level I system. | - Poor hydrogeologic approach, which may yield inadequate water supply. | - Conduct hydrogeologic investigation and water resources study before designing a Level I system. | X | | | |
| 2. Failure to incorporate protection to spring/well sources in the design. | - Contamination of raw water will result in higher costs in the form of investments on treatment works. | - Proper design and construction. Alternatively, construct/install simple water treatment facilities. | X | | | |
| 3. Failure to attain desired discharge or yield of well/spring. | - Lesser quantity of water to be supplied. | - Construct (additional) reservoir. | X | | | |
| 4. Impairment of historical and cultural values. | - Loss or irreparable damage to such values. | - Look for alternative site or route (i.e. transmission lines). | X | | | |
| **E. Problems during construction** | | | | | | |
| 1. Construction site may cause grave danger to children. | - Open excavations like trenches (for transmission lines) with no adequate protection guards can cause accidents to children. | - Install safety signs and facilities | X | | | |
| 2. Noise generated from well drilling equipment. | - | - | X | | | |

# INITIAL ENVIRONMENTAL EXAMINATION

Location: San Pedro, San Jose, Antique

Type of System: Deep well with spring pump and water tank

| Actions Affecting Environmental Resources and Values (A) | Damages to Environment (B) | Recommended Protection Measures (C) | IEE (D) No Significant Effect (D1) | Significant Effects Small (D2) | Moderate (D3) | Major (D4) |
|---|---|---|---|---|---|---|
| **A. Natural biological environment** | | | | | | |
| 1. Pollution/contamination of water supply source due to | - Possible saline water intrusion in the aquifer. | - Do not engage in excess pumping of water.<br>- Determine reasonable pumping hours and discharge rate. | X | | | |
| 2. Effects on the natural ground features. | - | - | X | | | |
| 3. Effects on natural vegetation | - Trees may possibly be uprooted or cut. | - Proper Project siting. | X | | | |
| **B. Environmental hazards relating to operations** | | | | X | | |
| 1. Disposal of night soil from toilets close to the water source. | - Possible contamination of the water source which leads to increase in waterborne and related diseases. | - People should report to *barangay* authorities indiscriminate disposal of night soil. | X | | | |
| 2. Inadequate operation and maintenance (O&M) of electric pump resulting in breakdown. | - Low pressure or intermittent water supply. | - Adequate training and institutional preparation. | | X | | |
| 3. Water use conflict | - | - | - | | | |
| **C. Water quality and quantity** | | | | | | |
| 1. Deleterious effect on the quality of water. | - Increased cases of waterborne and related diseases. | - Proper O&M. Effective water quality and surveillance. | X | | | |
| 2. Any possible result to diminish the quantity of water. | - Inadequate water supply. | - Proper construction of well. | X | | | |
| **D. Problems relating to planning and design inadequacies** | | | | | | |
| 1. Inappropriate location of well. | - Poor hydrogeologic investigation. | - Conduct hydrogeologic investigation | X | | | |
| 2. Failure to incorporate protection to spring/well sources in the design. | - Contamination of raw water will result in higher costs in the form of investments on treatment. | - Proper design and construction. Alternatively, construct/install simple water treatment facilities. | X | | | |
| 3. Failure to attain desired discharge or yield of well/spring. | - Lesser quantity of water works to be supplied. Longer water recovery period. | - Locate better aquifer. Alternatively, drill supplemental well. | | X | | |
| 4. Impairment of historical and cultural values. | - Loss or irreparable damage to such values. | - | X | | | |
| **E. Problems during construction** | | | | | | |
| 1. Construction site may cause grave danger to children. | - Open excavations like mud pit and borehole with no adequate protection guards can cause accidents to children. | - Install safety signs and facilities. | X | | | |
| 2. Noise generated from well drilling equipment. | | - Temporary nuisance to people living around the drilling area.<br>- Effective information dissemination. | X | | | |

Location: San Miguel, Jordan, Guimaras

Type of System: Filtration Tank

| Actions Affecting Environmental Resources and Values (A) | Damages to Environment (B) | Recommended Protection Measures (C) | IEE (D) No Significant Effect (D1) | Significant Effects Small (D2) | Moderate (D3) | Major (D4) |
|---|---|---|---|---|---|---|
| **A. Natural biological environment** | | | | | | |
| 1. Pollution/contamination of water supply source due to<br>a. liquid waste from toilets,<br>b. washing and bathing around the well/spring, and<br>c. use of insecticides by farmers in ricefields. | - Possible deterioration of water quality. | | X | | | |
| 2. Effects on the natural ground features. | - | - | - | | | |
| 3. Effects on natural vegetation | - Several trees around the intake structure may be uprooted or cut. (Temporarily) | - Minimize cutting/uprooting of trees.<br>- Replant the watershed area. | X | | | |
| **B. Environmental hazards relating to operations** | | | | X | | |
| 1. Disposal of night soil from toilets close to the water source. | - | - | X | | | |
| 2. Inadequate operation and maintenance (O&M) of electric pump resulting in breakdown. | - Poor quality of water. | - | X | | | |
| 3. Water use conflict | - | - | - | | | |
| **C. Water quality and quantity** | | | | | | |
| 1. Deleterious effect on the quality of water. | - Water has high iron and manganese content. | - Content of the filtration tank. | | | X | |
| 2. Any possible result to diminish the quantity of water. | - Inadequate water supply.<br>- Longer queue to collect water from source. | - Improve supply. | X | | | |
| **D. Problems relating to planning and design inadequacies** | | | | | | |
| 1. Inappropriate location of Level I system. | - | - | - | | | |
| 2. Failure to incorporate protection to spring/well sources in the design. | - | - | - | | | |
| 3. Failure to attain desired discharge or yield of well/spring. | - Lesser quantity of water to be supplied. | - Increase pumping period. | X | | | |
| 4. Impairment of historical and cultural values. | - | - | - | | | |
| **E. Problems during construction** | | | | | | |
| 1. Construction site may cause grave danger to children. | - Open excavations for footing, which is unprotected, poses a grave danger to children. | - Install safety signs and facilities. | X | | | |
| 2. Noise generated from well drilling equipment. | - | - | - | | | |

# INITIAL ENVIRONMENTAL EXAMINATION

Location: Agusan, Prosperidad, Agusan del Sur — Type of System: Spring

| Actions Affecting Environmental Resources and Values (A) | Damages to Environment (B) | Recommended Protection Measures (C) | IEE (D): No Significant Effect (D1) | Significant Effects: Small (D2) | Moderate (D3) | Major (D4) |
|---|---|---|---|---|---|---|
| **A. Natural biological environment** | | | | | | |
| 1. Pollution/contamination of water supply source due to a. liquid waste from toilets, b. washing and bathing around the well/spring, and c. use of insecticides by farmers in ricefields. | - Possible deterioration of water quality. | - Design/construct the water system properly. | X | | | |
| 2. Effects on the natural ground features. | - Contour/topography of the spring project area may be disfigured. | - Develop only limited area. | X | | | |
| 3. Effects on natural vegetation | - Several trees around the intake/sump may be uprooted or cut. | - Ensure proper spring development. | X | | | |
| **B. Environmental hazards relating to operations** | | | | | | |
| 1. Disposal of night soil from toilets close to the water source. | - Possible contamination of the water source. | - Disposal should be far away from the spring source. | X | | | |
| 2. *Inadequate operation and maintenance* (O&M) of electric pump resulting in breakdown. | - | - | - | | | |
| 3. Water use conflict | - Multiagency use | - Fair allotment of water. | - | | | |
| **C. Water quality and quantity** | | | | | | |
| 1. Deleterious effect on the quality of water. | - Yield waterborne and related diseases. | - Proper O&M. Effective water quality and surveillance. | X | | | |
| 2. Any possible result to diminish the quantity of water. | - Inadequate water supply.<br>- Longer queue to collect water from source. | - Proper construction of spring sump and ground reservoir. | X | | | |
| **D. Problems relating to planning and design inadequacies** | | | | | | |
| 1. Inappropriate location of Level I system. | - Poor hydrogeologic approach, which may yield inadequate water supply. | - Conduct hydrogeologic investigation and water resources study before designing a Level I system. | X | | | |
| 2. Failure to incorporate protection to spring/well sources in the design. | - Contamination of raw water will result in higher costs in the form of investments on treatment works. | - Proper design and construction. Alternatively, construct/install simple water treatment facilities. | X | | | |
| 3. Failure to attain desired discharge or yield of well/spring. | - Lesser quantity of water to be supplied. | - Construct (additional) reservoir. | X | | | |
| 4. Impairment of historical and cultural values. | - Loss or irreparable damage to such values. | - Look for alternative site or route (i.e. transmission lines). | X | | | |
| **E. Problems during construction** | | | | | | |
| 1. Construction site may cause grave danger to children. | - Open excavations like trenches (for transmission lines) with no adequate protection guards can cause accidents to children. | - Install safety signs and facilities. | X | | | |
| 2. Noise generated from well drilling equipment. | - | - | X | | | |

Location: Isagani, Maasin, Southern Leyte — Type of System: Shallow Well with Hand pump

| Actions Affecting Environmental Resources and Values (A) | Damages to Environment (B) | Recommended Protection Measures (C) | IEE (D): No Significant Effect (D1) | Significant Effects: Small (D2) | Moderate (D3) | Major (D4) |
|---|---|---|---|---|---|---|
| **A. Natural biological environment** | | | | | | |
| 1. Pollution/contamination of water supply source due to a. liquid waste from toilets, b. washing and bathing around the well/spring, and c. use of insecticides by farmers in ricefields. | - Possible saline water intrusion in the aquifer. | - Proper planning and construction<br>- Drill only at appropriate depth. | | X | | |
| 2. Effects on the natural ground features. | - Surface runoff from well source may affect vegetation. | - Proper drainage should be installed. | | X | | |
| 3. Effects on natural vegetation | - | - | X | | | |
| **B. Environmental hazards relating to operations** | | | | | | |
| 1. Disposal of night soil from toilets close to the water source. | - Possible contamination of the water source, which leads to increase in waterborne and related diseases. | - People should report to *barangay* authorities indiscriminate disposal of night soil. | X | | | |
| 2. Inadequate operation and maintenance (O&M) of electric pump resulting in breakdown. | - No water to drink | - Adequate training and institutional preparation. | X | | | |
| 3. Water use conflict | - | - | - | | | |
| **C. Water quality and quantity** | | | | | | |
| 1. Deleterious effect on the quality of water. | - Increase waterborne and related diseases. | - Proper O&M. Effective water quality and surveillance. | X | | | |
| 2. Any possible result to diminish the quantity of water. | - Inadequate water supply. Longer queue to collect water from source. | - Proper construction of well. Drill additional water. | X | | | |
| **D. Problems relating to planning and design inadequacies** | | | | | | |
| 1. Inappropriate location of Level I system. | - Poor hydrogeologic approach, which may yield inadequate water supply. | - Conduct hydrogeologic investigation before designing a Level I system. | X | | | |
| 2. Failure to incorporate protection to spring/well sources in the design. | - Contamination of raw water will result in higher costs in the form of investments on treatment works. | - Proper design and construction. Alternatively, construct/install simple water treatment facilities. | X | | | |
| 3. Failure to attain desired discharge or yield of well/spring. | - Lesser quantity of water to be supplied. Longer water recovery period. | - Locate better aquifer. Alternatively, drill supplemental well. | X | | | |
| 4. Impairment of historical and cultural values. | - Loss or irreparable damage to such values. | - | X | | | |
| **E. Problems during construction** | | | | | | |
| 1. Construction site may cause grave danger to children. | - Open excavations like mud pit and borehole with adequate protection guards can cause accidents to children. | - Install safety signs and facilities. | X | | | |
| 2. Noise generated from well drilling equipment. | - Nuisance to people around the drilling area. | - Drill well rapidly to minimize negative effect.<br>- Work only during daytime.<br>- Effective information dissemination. | X | | | |

## SOCIOECONOMIC SURVEYS AND COMMUNITY PARTICIPATION GUIDE

### I. Sample Communities

1. The Philippines is a country endowed with water resources of varying abundance across regions. The harnessing of this important resource, however, also varies across regions depending on the cultural heritage, social groups and norms, and technical know-how of the people in the area. Harnessing the water resource, however, is only one aspect. The other equally important aspect is the sustainability of the water supply facility through a well-organized operation and maintenance (O&M) of the system. In view of this, the importance of analyzing the social aspects of the Project needs to be emphasized.

2. The Fact-Finding and Appraisal Missions were able to visit and interact with representative sample communities in 12 provinces in Luzon, Visayas, and Mindanao. The 12 provinces are included in the social reform agenda (SRA) of the Government. The findings of the Missions in 12 provinces can be considered as representative of all the 20 provinces included in SRA in view of the heterogeneity of the culture, social dimension, and heritage of the Filipino people. Socioeconomic surveys were undertaken for 400 subprojects and will be undertaken for each subproject prior to its formulation and approval.

### A. Luzon

3. The six provinces visited in Luzon are located in the Cordillera Mountain Ranges where the world-famous rice terraces were built about 2000 years ago. True to the heritage of their ancestors who built the rice terraces, the people in the Cordillera are hardworking. The lack of peace and order in the area for the past years, however, contributed to the lack of infrastructure support for economic development. As a consequence, the region's economic development, except for Baguio City, stood still. SRA, which covers only the lowest income provinces in the Philippines, included all provinces of the Cordillera Administrative Region (CAR). The other regions had only two or three of their provinces in the SRA list.

4. With the new-found peace and order condition in the region, the Cordillera is bouncing back. It is to be noted that all of the six provinces had already prepared their respective Master Plans for Water Supply and Sanitation. The respective Master Plans already indicate the needs and demand analysis of CAR for water supply and sanitation. Identification of areas in need at the municipal level has already been undertaken by the Master Plan, and the provincial government needs to undertake site identification only at the community level through its municipal government.

5. In all the provinces visited in Luzon, both the local government units (LGUs) and the communities are found to be very cooperative and open to the following propositions: (i) organize the community into a *Barangay* Waterworks and Sanitation Association (BWSA), (ii) take full responsibility for O&M of the facilities after construction, and (iii) contribute 10 percent equity each. LGUs of the municipalities visited are willing to contribute from their Internal Revenue Allotment (IRA) 10 percent of the Project cost. The provincial governments fully support this scheme and are willing to back up their respective municipalities on this. The communities, however, are hesitant to contribute cash. They are willing, however, to contribute labor and help in the construction of the facilities. This would expedite the transfer of technology for O&M of the

facilities since the members of the community would be trained on the job on how the facilities are constructed, and hence, would be able to do repairs easily.

6. In terms of collecting fees for O&M, however, most of the communities visited are hesitant to collect on a regular basis. They would rather collect money on a need basis. The underlying reason for this is to prevent the member who would be assigned to collect fees from being tempted to spend the money or to run away with it in case he suddenly migrates or finds better livelihood opportunities outside the region. With the introduction of proper bookkeeping training, however, the communities are amenable to the idea of collecting fees regularly.

7. One observation of the people in Cordillera is that they believe that nothing comes free, and, if they are to be required to put up equity and take full responsibility for O&M of water supply facilities, then they are willing to do so, provided these are within their means (i.e., affordable) and capability (i.e., they would be properly trained).

8. The Mission was able to observe some insights particular to certain communities, aside from the general observations mentioned above.

### 1. *Barangay* Ambassador, Municipality of Tublay, Benguet Province

9. This community has already formed a BWSA called Ambassador Waterworks Association (AWA). AWA was formed to receive a loan for waterworks from the Philippine Relief and Development Services (PHILRADS), a nongovernment organization based in Baguio City. The water source is the same spring that the community has been using before, except that now, a pump was installed through the loan. Although the pump was able to reduce the distance in fetching water, the community still feels the scarcity of water. Water is rationed to the households once a week, from Monday to Saturday only, because the president of the AWA is a pastor of the Church. The secretary of the association is the President's wife, who keeps all the receipts of payment on the loan and collections from the members. AWA has 26 members. Only 3 members have not paid on time. Amortization of the loan, which is supposed to be amortized over 36 months, is already in its 26th month, although only 36 percent of the principal and interest have been paid. The community actively participated in the discussions with the Mission. The community showed great commitment to the scheme of putting up an equity and to collecting fees to operate and manage any improvement on the system that might be undertaken. Presently, AWA is collecting ₱10 per month per household for the amortization of the loan. The community is willing to increase the amount if necessary, provided that water will be made accessible and potable. Most of the households boil their drinking water.

### 2. *Barangay* Malama, Municipality of Conner, Apayao Province

10. *Barangay* Malama has no water system and no waterworks association. Water comes from some private households wells. The Municipal Health Officer, however, comes from this *barangay* and, together with her husband, is initiating work to improve the waterworks of the *barangay*. The community has a professional lady dentist who also provides some informal leadership to the women of the community. The members of the community are interested to support any scheme that would improve the water and sanitation situation in their area provided that this is within their financial capability and technical know-how.

### 3. *Barangay* Agbannawag, Municipality of Tabuk, Kalinga Province

11. This community has no waterworks and sanitation association. However, it has active organizations seeking the betterment of the standard of living of the members. The Saranay Cooperative, geared toward livelihood creation and improvement, has 100 members. The women also have their Women's Club, which mainly caters to livelihood problems. The community is willing to support the scheme presented in this Project, so long as the Project provides more accessible and potable water to its members.

12. The above insights were gathered by the Mission in the short time that it was able to interact with the various communities in the six provinces included in SRA. The time limitation for the fieldwork also limited the inputs that the Mission could gather from the communities. The Mission provided a set of questionnaires and checklist for the enumerators hired in the field for their respective areas. In the implementation of the Project, this questionnaire and checklist should be modified and improved. Among the concerns that should be addressed in the social analysis of the Project would be the following: profile of the clientele group, needs assessment, demand analysis, absorptive capacity of the potential beneficiaries, and gender issues.

## B. Visayas

### 1. *Barangay* San Pedro, Municipality of San Jose, Antique Province

13. This community has an existing water supply, but the members of the community find it insufficient. The average household income is about ₱4,000 per month, which is relatively higher than the average household income in the other areas visited by the Mission. According to the *barangay* captain, this could be due to the high number of professionals, e.g., doctors, engineers, teachers, in the area. Aside from employment and practice of profession, the main livelihood is still farming and fishing. As to the water system, the community members contribute if the system needs expenses for repair or maintenance. With respect to the proposed scheme of equity sharing from the community, the *barangay* captain informed the Mission that the community is receptive to giving noncash contributions (equity) e.g., labor, as they have done in the past.

### 2. *Barangay* Isagani, Municipality of Maasin, Southern Leyte Province

14. This community has an existing water system, of mostly shallow wells. Water is sufficient but waterborne diseases, particularly amoebiasis, are prevalent. This could be due to the absence of a cemented apron around the shallow well pipe. They have no BWSA, but the community members gathered together by the local government unit to discuss their water supply and sanitation needs with the Mission, gave the assurance that they are very willing to participate in organizing their community into a waterworks and sanitation association, to contribute in kind (particularly, labor) to the construction or improvement of their shallow wells, and to collect monthly fees (up to about ₱50 per household per month) for the operation and maintenance of the facilities, provided that their problem with the potability of water is addressed. The community members are willing to cooperate and participate in the health and hygiene education program of the Project, because they realize that their main problem is sanitation and water quality.

## C. Mindanao

### 1. *Barangay* Salvacion, Municipality of Prosperidad, Agusan del Sur Province

15. *Barangay* Salvacion is composed of four *puroks*, population cluster separated by distance from other population clusters in the same *barangay* or community. Each *purok* has a leader or chairman. Except for *Purok 3*, which is located in the central area of the *barangay*, the other *puroks* do not have sufficient water. They share the water supply of *Purok 3*, about 1 kilometer away, and the members of the community find this inconvenient. *Barangay* Salvacion has an existing BWSA, called the Salvacion Waterworks and Sanitation Association, with a set of officers, namely, president, vice-president, secretary and treasurer, but without a regular collection of the monthly contribution for O&M of the water system. All repair and maintenance works are done on a voluntary basis. The community members, however, indicated that they are willing to collect monthly fees for the O&M of the facilities and to contribute equity or counterpart to the construction of the facilities in the form of labor.

### 2. *Barangay* Dayoan, Municipality of Tago, Surigao del Sur Province

16. This *barangay* has a strong network of People's Organization (PO) for farmers and fishermen. The *barangay* is part of an overall federation for the various POs for farmers and fishermen. The *barangay* council takes the lead in most of the community organizing, with the officials strongly supporting any community organizing that contributes to self-reliance in the community. The local government officials from the provincial to the *barangay* level are unanimous in lauding the Project's vision to make the communities self-reliant and remove the mentality of "dole out from Government" through BWSA.

## II. Concerns of the Social Analysis of the Project

### A. Clientele Group Profiling

(i) Identification of the potential service population and the subgroups within the identified population whose participation will determine the success of the Project (e.g., landholders, landless workers, business owners, etc.)

(ii) Preparation of the socioeconomic profile of the community to be formed into the BWSA. The socioeconomic profile of the potential beneficiary groups should include information on the following: needs and demands of the potential beneficiary groups and their absorptive capacity, demographic profile, access and levels of education, health problems and access to health services, social organizations and group formations, water user groups, and leaders. The profile should take into account as well the sociocultural traditions of the community regarding water, sanitation, and water-related health aspects.

### B. Needs Assessment

(i) Assessment of existing water supply and sanitation facilities, including water supply sources. Assessment of water supply needs should be undertaken in the context of the primary objective of providing water supply, i.e.,water supply

provided should be accessible, adequate, and potable. The sanitation aspects should include public latrines, wastewater drainage, and health education.

(ii) Assessment of the level of service desired by the community beneficiary, i.e., point source, communal faucet, or household connections.

**C. Demand Analysis**

(i) Assessment of the demand for water services by investigating the beneficiaries' actual expenditures and efforts to obtain water vis-a-vis the quantity and quality of water supply they receive.

(ii) Assessment of the initiative and efforts of the private sector in obtaining water and improving the level and quality of service of the water supply and sanitation facilities.

(iii) Assessment of the problems on access, cost, quality, quantity, and reliability of service experienced in obtaining water.

(iv) Comparison of the cost and quality of existing water supply and sanitation services with those proposed in the Project.

(v) Assessment of the capability and willingness of potential beneficiaries to provide equity at the construction stage and to undertake the responsibility for the sustainability and O&M of the facilities.

**D. Absorptive Capacity**

(i) Assessment of the extent of knowledge and influence of social and/or religious-based customs on personal and public hygiene.

(ii) Assessment of the acceptability to beneficiaries of the recommended hygiene practices and identification of need and extent of education for this.

(iii) Assessment of individual or group activities on water supply and sanitation facilities improvement in the community and the capability of these entities in operating and maintaining the facilities.

(iv) Assessment of the extent and context of education that the community beneficiaries would need to maintain and operate the facilities, thereby, ensuring the sustainability of the system.

(v) Assessment of the appropriateness of the technologies being proposed in the Project vis-a-vis the capability and acceptability to the community of the recommendations of the Project.

**E. Gender Issues**

(i) Assessment of the differing roles of the male and female in the utilization, O&M of the water supply and sanitation facilities, and in relation to other related activities, such as environment and health.

(ii) Assessment of women's activities, existing and potential leaders among women of different categories, and women's participation in group activities.

(iii) Assessment of the socioeconomic differentiation among women, group formation, training needs, and institutional arrangements for women's effective participation.

## III. Community Participation Approach

17. Community participation is essential in planning for community water systems and sanitation since these address the most basic of human needs. Planning should take into consideration not only the technical, financial, and economic aspects of the water and sanitation facilities but also the sociocultural factors that influence how the community will participate in the process of planning, designing, and managing the system.

18. Community participation should provide information on the community as well as insights into the values and social relationships, aspirations and experiences that influence collective decision making in the design and management of the water supply and sanitation facilities. Gaining such information and insights makes planners and providers of the facilities more responsive and accountable to the beneficiaries. Hence, technology choices and services correspond with what users want and are willing to pay for, and institutional arrangements and community organizing are molded to local practices.

19. Community participation should be undertaken at two levels: consultations and interactive participation with the community. Consultations with the community should be able to generate community profiles that would be useful for planners and designers of the facilities and the organizations to manage and sustain the systems. Interactive participation with the community should provide insights from the community as well as impress on the community the need for it to be self-sufficient with respect to the O&M of the facilities and its sustainability. Community participation should also be able to provide nonformal training in O&M of the system. Stakeholders meetings have been held during the fact-finding.

## IV. Timing

20. Community participation should be undertaken at all stages of the project, as follows: before the project commences (i.e., conceptualization, planning and design of the project), during project implementation and until the project ends.

## V. Community Participation Guide

21. Planning for community water systems and sanitation takes into consideration not only the technical, financial, and economic aspects in determining the appropriate design for the water facilities to be installed, but most importantly the factors that influence how the community

will participate in the process of planning, designing, and managing the system. This involves an understanding of community dynamics such as values and social relationships, community aspirations and experiences, which influence collective decision making in the choice of the water facility and action taking in putting up the facility and ultimately managing its operation.

## A. Objectives

(i) To gather information on the profile of the community regarding water usage, system of fetching, convenience, accessibility, potability and sufficiency of the water supply, as well as sanitation practices.

(ii) To interact with the community to find out its interest in and reactions to the proposed Bank scheme for the water supply and, if interested, to guide its leadership in setting community goals and formulating plans concerning the provision of water supply and sanitation facilities in their area.

(iii) To extract a firm commitment from the community to form and organize a BWSA, operate and manage the proposed water supply and sanitation facilities for cost recovery and sustainability, and provide 10 percent equity in cash or kind (land, labor, materials, etc.) as counterpart for the project.

## B. Steps and Guide Questions

1. Gather the community together in a caucus.

2. Explain the scheme of the proposed facility as follows:

   a. The community needs to form and organize itself into a BWSA;
   b. The members need to put up equity;
   c. Ownership of the facilities is with the community;
   d. Responsibility for O&M and sustainability of the facilities is with the community; and
   e. Women should participate in BWSA's decisions and regular meetings.

3. Hold meetings with women's organizations, and provide information for their informed participation in BWSA.

4. Interact while observing and noting the community's reaction. See the guide questions in the next section.

5. Extract a commitment from the community on item 2.

6. Prepare a report on each community.

7. Return to the community to finalize the plans and thank the members.

## VI. Community Participation Guide Questions and Topics

1. Cost recovery: Collection of water fees will enable the community to recover O&M cost and to replace the pump (manual or diesel) and other accessories.

2. Ability to pay: How much from their income can the people allocate for water fees? How much is their average income?

3. Willingness to pay: How much are the people willing to pay for their water consumption? What is the proportion of this amount to the average household income in the area (more or less than 3 percent)? What are the alternative water sources in the area and how much are people paying for water they get from these sources (including water vendors)?

4. Organizing into BWSAs: There is a need to have one organization of which all the consumers are members to operate and maintain the facility and handle the breakdown of parts?

5. Women's involvement: Meetings with women's groups should be held to provide information and get firm commitments on women's participation in BWSA's decisions and regular meetings.

6. Ownership status of facilities: The facilities do not belong to the Government but to the community through BWSA when the Government turns over the facilities to the community.

7. Equity counterparting: There is a need to put up 10 percent of the cost of construction in terms of land, labor, materials, or cash.

8. Responsibility for O&M: If ownership of the facilities lies with the community, which sector should operate and maintain them, the Government or the community? What extent of the maintenance (minor vs major) should be the responsibility of each sector?

9. Benefits from project outputs: What are the benefits from the Project as perceived by the beneficiaries?

10. Leadership: Who are the informal and formal leaders in the community? Are they public officials?

Important: Gauge and take note of the reactions of the community participants; are they interested, enthusiastic, indifferent, or against the project? Are they ignorant of the things mentioned and discussed above?

## ECONOMIC ANALYSIS

1. To assess the economic viability of the sample schemes,[1] the economic internal rates of return (EIRR) for each was worked out. The assumptions for this analysis are as follows:

### a. Cost Stream

2. The cost streams include the investment costs and operation and maintenance (O&M) costs to cover the incremental labor, power, chemicals, repairs and maintenance, and administrative costs of the schemes projected over 10 years. For the purpose of economic analysis, the cost excluded price contingencies and taxes. To arrive at the economic cost, a standard conversion factor of 0.90 of the World Bank was applied to nontradeables. The economic costs comprise adjusted financial costs for both water supply and those sanitation works required to offset any possible environmental degradation as a result of water supply intervention. The operating costs cover the period of the economic useful life of the facility estimated at 10 years.

### b. Benefit Streams

3. The benefit streams include both economic cost savings and consumer surplus benefits likely to be generated by the schemes, which are considered at constant prices and projected for the period of 10 years. Revenues have been added to the benefit stream and they are the relatively most important benefits. Further, economic cost savings would cover time savings due to accessibility and convenience of the schemes and savings from improvement in health due to potability of water provided by the schemes.

4. Economic cost savings estimation were based on the quantity of potable water consumed and the difference between the price of water with and without the Project. The price of water without the Project was based on the opportunity cost of resources (in this case, labor) and existing tariff assumed at an average of ₱2.00 per month per household. The price of water with the Project was based on their willingness to pay that the beneficiaries indicated during discussions with them. Consumer surplus was based on the difference of the quantity consumed and the price paid for the with and without Project scenarios. It is assumed that from the year 1996 onward, there will be a gradual increase in the benefits and from the year 2005 these benefits will be enjoyed by the people to the full extent.

5. For all schemes, a basic economic justification will be the selection of a least-cost alternative to the delivery of water supply and sanitation services, which is largely based on technical justification.

6. The water tariffs in the eight subprojects in 1995 were used as the basis for projecting revenues. For EIRR analysis, the incremental revenues are in constant 1995 prices. The *Barangay* Waterworks and Sanitation Association (BWSA) establishes a water tariff structure in

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[1] The sample schemes are from different geographical areas (Luzon, the Visayas, and Mindanao) and cover (i) shallow well with hand pump, (ii) deep well with hand pump, (iii) deep well with submersible pump and generator, and (iv) spring development with gravity transmission pipeline.

which low consumption users pay a low rate and high consumption users pay higher rates. The proposed water rates of the Project subscribes to the standard set by the Department of Public Works and Highways (DPWH).

7. Based on the two streams, EIRRs worked out for the eight schemes are as follows:

| | | | |
|---|---|---|---|
| Ambassador: | 34% | San Pedro: | 37% |
| Poblacion: | 17% | San Miguel: | 30% |
| Agbannawag: | 25% | Salvacion: | 28% |
| Malama: | 22% | Isagani: | 19% |

**c. Sensitivity Analysis of EIRRs**

8. A sensitivity analysis of EIRRs was carried out to test the impact of changes in the investment costs and benefits. The results are presented in the following tables:

**Sensitivity Analysis of EIRRs (in percent)**

| Scheme | Basic Assumptions | Investment cost plus 10% | Benefits minus 10% | Combined |
|---|---|---|---|---|
| Ambassador | 34 | 30 | 27 | 24 |
| Poblacion | 17 | 14 | 11 | 8 |
| Agbannawag | 25 | 22 | 18 | 13 |
| Malama | 22 | 19 | 16 | 13 |
| San Pedro | 37 | 32 | 28 | 25 |
| San Miguel | 30 | 26 | 23 | 20 |
| Salvacion | 28 | 24 | 21 | 18 |
| Isagani | 19 | 18 | 14 | 9 |

BGY.AMBASSADOR, TUBLAY

**Benguet: EIRR and NPV**

| Year | Investment Cost | O&M Cost | Other Cost | Total Cost | Economic Cost Savings | Consumer Surplus | Total Benefits | Net Benefits |
|---|---|---|---|---|---|---|---|---|
| 1 | 289,744 | 36,000 | 1,000 | 326,744 | 58,956 | 29,478 | 88,434 | (238,310) |
| 2 | | 36,000 | 1,000 | 37,000 | 64,851 | 32,426 | 97,277 | 60,277 |
| 3 | | 36,000 | 1,000 | 37,000 | 71,337 | 35,668 | 107,005 | 70,005 |
| 4 | | 36,000 | 1,000 | 37,000 | 78,470 | 39,235 | 117,705 | 80,705 |
| 5 | | 36,000 | 1,000 | 37,000 | 86,317 | 43,159 | 129,476 | 92,476 |
| 6 | | 36,000 | 1,000 | 37,000 | 94,949 | 47,475 | 142,424 | 105,424 |
| 7 | | 36,000 | 1,000 | 37,000 | 104,444 | 52,222 | 156,666 | 119,666 |
| 8 | | 36,000 | 1,000 | 37,000 | 114,888 | 57,444 | 172,333 | 135,333 |
| 9 | | 36,000 | 1,000 | 37,000 | 126,377 | 63,189 | 189,566 | 152,566 |
| 10 | | 36,000 | 1,000 | 37,000 | 139,015 | 69,507 | 208,522 | 171,522 |

EIRR 34%

NPV @12% ₱ 261,309.66

| EIRR | | Increase in Investment Costs | | |
|---|---|---|---|---|
| | 34% | 0% | 5% | 10% |
| Decrease | 0% | 34% | 32% | 30% |
| in | 5% | 31% | 29% | 27% |
| Benefits | 10% | 28% | 26% | 24% |

| NPV @12% | | Increase in Investment Costs | | |
|---|---|---|---|---|
| | ₱ 261,310 | 0% | 5% | 10% |
| Decrease | 0% | 226,634 | 212,147 | 197,660 |
| in | 5% | 190,138 | 175,651 | 161,164 |
| Benefits | 10% | 153,642 | 139,154 | 124,667 |

**Benguet: EIRR and NPV**

| | | FC | LC |
|---|---|---|---|
| Unit cost: | | ₱ 91,000 | ₱ 273,000 |
| Less tax: | 20% | ₱ 72,800 | ₱ 218,400 |
| Per facility-economic cost | | ₱ 72,436 | ₱ 217,308 |

Assume: 10% of investment costs are nontradeables

| With Project | | | | P/lpcd |
|---|---|---|---|---|
| Willingness to pay | | ₱ 40.00 | per month/hh | ₱ 1.33 |
| Cost recovery (O&M and depreciation) | | ₱ 16.25 | per month/hh | ₱ 0.54 |
| O&M cost | P/month | 3,000 | BWSA O&M Expenses | |
| Other cost | P/year | 1,000 | BWSA Monitoring | |
| Consumption (lpcd) | | 30 | | |

| | | | | P/lpcd |
|---|---|---|---|---|
| Exchange rate: | | ₱ 26.00 | :$1.00 | |
| Without Project | | | | |
| Contribution (if any) hh/month | | | ₱ 2.00 | 0.13 |
| Labor (as % of minimum wage) cost/day | | | ₱ 43.20 | 40% 2.88 |
| Consumption (lpcd) | | | 15 | |
| Price difference with-without project (per lpcd) | | | ₱ 1.68 | |
| Consumption difference with-without project (lpcd) | | | 15 | |
| Economic cost savings per hh/month | | | ₱ 25.15 | |
| Consumer Surplus (lpcd) | | | ₱ 12.58 | |

BGY.POBLACION, LA PAZ

**Abra: EIRR and NPV**

| Year | Investment Cost | O&M Cost | Other Cost | Total Cost | Economic Cost Savings | Consumer Surplus | Total Benefits | Net Benefits |
|---|---|---|---|---|---|---|---|---|
| 1 | 198,682 | 36,000 | 1,000 | 235,682 | 45,360 | 22,680 | 68,040 | (167,642) |
| 2 | | 36,000 | 1,000 | 37,000 | 46,449 | 23,224 | 69,673 | 32,673 |
| 3 | | 36,000 | 1,000 | 37,000 | 47,563 | 23,782 | 71,345 | 34,345 |
| 4 | | 36,000 | 1,000 | 37,000 | 48,705 | 24,352 | 73,057 | 36,057 |
| 5 | | 36,000 | 1,000 | 37,000 | 49,874 | 24,937 | 74,811 | 37,811 |
| 6 | | 36,000 | 1,000 | 37,000 | 51,071 | 25,535 | 76,606 | 39,606 |
| 7 | | 36,000 | 1,000 | 37,000 | 52,297 | 26,148 | 78,445 | 41,445 |
| 8 | | 36,000 | 1,000 | 37,000 | 53,552 | 26,776 | 80,327 | 43,327 |
| 9 | | 36,000 | 1,000 | 37,000 | 54,837 | 27,418 | 82,255 | 45,255 |
| 10 | | 36,000 | 1,000 | 37,000 | 56,153 | 28,076 | 84,229 | 47,229 |

EIRR 17%

NPV @12% ₱ 14,183.27

| EIRR | | Increase in Investment Costs | | |
|---|---|---|---|---|
| | 17% | 0% | 5% | 10% |
| Decrease | 0% | 17% | 16% | 14% |
| in | 5% | 14% | 12% | 11% |
| Benefits | 10% | 11% | 9% | 8% |

| NPV @12% | | Increase in Investment Costs | | |
|---|---|---|---|---|
| | ₱ 261,310 | 0% | 5% | 10% |
| Decrease | 0% | 14,183 | 4,249 | (5,685) |
| in | 5% | (7,137) | (17,071) | (27,006) |
| Benefits | 10% | (28,458) | (38,392) | (48,326) |

**Abra: EIRR and NPV**

| | | FC | LC |
|---|---|---|---|
| Unit cost: | | ₱ 62,400 | ₱ 187,200 |
| Less tax: | 20% | ₱ 49,920 | ₱ 149,760 |
| Per facility-economic cost | | ₱ 49,670 | ₱ 149,011 |

Assume: 10% of investment costs are nontradeables

| With Project | | | | P/lpcd |
|---|---|---|---|---|
| Willingness to pay | | ₱ 40.00 | per month/hh | ₱ 1.33 |
| Cost recovery (O&M and depreciation) | | ₱ 33.87 | per month/hh | ₱ 1.13 |
| O&M cost | P/month | 3,000 | BWSA O&M Expenses | |
| Other cost | P/year | 1,000 | BWSA Monitoring | |
| Consumption (lpcd) | | 30 | | |

| | | | | P/lpcd |
|---|---|---|---|---|
| Exchange rate: | | ₱ 26.00 | :$1.00 | |
| Without Project | | | | |
| Contribution (if any) hh/month | | | ₱ 2.00 | 0.13 |
| Labor (as % of minimum wage) cost/day | | | ₱ 43.20 | 40% 2.88 |
| Consumption (lpcd) | | | 15 | |
| Price difference with-without project (per lpcd) | | | ₱ 1.68 | |
| Consumption difference with-without project (lpcd) | | | 15 | |
| Economic cost savings per hh/month | | | ₱ 25.20 | |
| Consumer Surplus (lpcd) | | | ₱ 12.60 | |

hh - Household
lpcd - Liters per capita per day
O&M - Operation and maintenance

BGY.AGBANNAWAG, TABUK

Kalinga: EIRR and NPV

| Year | Investment Cost | O&M Cost | Other Cost | Total Cost | Economic Cost Savings | Consumer Surplus | Total Benefits | Net Benefits |
|---|---|---|---|---|---|---|---|---|
| 1 | 119,416 | 36,000 | 1,000 | 156,416 | 39,888 | 19,944 | 59,832 | (96,584) |
| 2 | | 36,000 | 1,000 | 37,000 | 40,845 | 20,423 | 61,268 | 24,268 |
| 3 | | 36,000 | 1,000 | 37,000 | 41,826 | 20,913 | 62,738 | 25,738 |
| 4 | | 36,000 | 1,000 | 37,000 | 42,829 | 21,415 | 64,244 | 27,244 |
| 5 | | 36,000 | 1,000 | 37,000 | 43,857 | 21,929 | 65,786 | 28,786 |
| 6 | | 36,000 | 1,000 | 37,000 | 44,910 | 22,455 | 67,365 | 30,365 |
| 7 | | 36,000 | 1,000 | 37,000 | 45,988 | 22,994 | 68,982 | 31,982 |
| 8 | | 36,000 | 1,000 | 37,000 | 47,091 | 23,546 | 70,637 | 33,637 |
| 9 | | 36,000 | 1,000 | 37,000 | 48,222 | 24,111 | 72,332 | 35,332 |
| 10 | | 36,000 | 1,000 | 37,000 | 49,379 | 24,689 | 74,068 | 37,068 |

EIRR 25%

NPV @12% 42,008.59

| EIRR | | Increase in Investment Costs | | |
|---|---|---|---|---|
| | 25% | 0% | 5% | 10% |
| Decrease | 0% | 25% | 24% | 22% |
| in | 5% | 21% | 19% | 18% |
| Benefits | 10% | 16% | 15% | 13% |

| NPV @12% | | Increase in Investment Costs | | |
|---|---|---|---|---|
| | ₱ 42,009 | 0% | 5% | 10% |
| Decrease | 0% | 42,009 | 36,038 | 30,067 |
| in | 5% | 23,260 | 17,289 | 11,318 |
| Benefits | 10% | 4,511 | (1,460) | (7,430) |

Kalinga: EIRR and NPV

| | | FC | LC |
|---|---|---|---|
| Unit cost: | | ₱ 37,505 | ₱ 112,515 |
| Less tax: | 20% | ₱ 30,004 | ₱ 90,012 |
| Per facility-economic cost | | ₱ 29,854 | ₱ 89,562 |

Assume: 10% of investment costs are nontradeables

| With Project | | | | P/lpcd |
|---|---|---|---|---|
| Willingness to pay | | ₱ 35.00 | per month/hh | 1.17 |
| Cost recovery (O&M and depreciation) | | ₱ 35.42 | per month/hh | 1.18 |
| O&M cost | P/month 3,000 | BWSA O&M Expenses | | |
| | P/year 1,000 | BWSA monitoring | | |
| Consumption (lpcd) | 30 | | | |

| | | | | |
|---|---|---|---|---|
| Exchange rate: | ₱ 26.00 | :$1.00 | | |
| Without Project | | | | P/lpcd |
| Contribution (if any) hh/month | | ₱ 2.00 | | 0.13 |
| Labor (as % of minimum wage) cost/day | | ₱ 43.20 | 40% | 2.88 |
| Consumption (lpcd) | | 15 | | |
| Price difference with-without project (per lpcd) | | ₱ 1.85 | | |
| Consumption difference with-without project (lpcd) | | 15 | | |
| Economic cost savings per hh/month | | ₱ 27.70 | | |
| Consumer Surplus (lpcd) | | ₱ 13.85 | | |

BGY. MALAMA, CONNER

Apayao: EIRR and NPV

| Year | Investment Cost | O&M Cost | Other Cost | Total Cost | Economic Cost Savings | Consumer Surplus | Total Benefits | Net Benefits |
|---|---|---|---|---|---|---|---|---|
| 1 | 289,744 | 36,000 | 1,000 | 326,744 | 60,480 | 30,240 | 90,720 | (236,024) |
| 2 | | 36,000 | 1,000 | 37,000 | 61,932 | 30,966 | 92,897 | 55,897 |
| 3 | | 36,000 | 1,000 | 37,000 | 63,418 | 31,709 | 95,127 | 58,127 |
| 4 | | 36,000 | 1,000 | 37,000 | 64,940 | 32,470 | 97,410 | 60,410 |
| 5 | | 36,000 | 1,000 | 37,000 | 66,498 | 33,249 | 99,748 | 62,748 |
| 6 | | 36,000 | 1,000 | 37,000 | 68,094 | 34,047 | 102,142 | 65,142 |
| 7 | | 36,000 | 1,000 | 37,000 | 69,729 | 34,864 | 104,593 | 67,593 |
| 8 | | 36,000 | 1,000 | 37,000 | 71,402 | 35,701 | 107,103 | 70,103 |
| 9 | | 36,000 | 1,000 | 37,000 | 73,116 | 36,558 | 109,674 | 72,674 |
| 10 | | 36,000 | 1,000 | 37,000 | 74,871 | 37,435 | 112,306 | 75,306 |

EIRR 22%

NPV @12% 65,258.69

| EIRR | | Increase in Investment Costs | | |
|---|---|---|---|---|
| | 22% | 0% | 5% | 10% |
| Decrease | 0% | 22% | 20% | 19% |
| in | 5% | 19% | 17% | 16% |
| Benefits | 10% | 16% | 14% | 13% |

| NPV @12% | | Increase in Investment Costs | | |
|---|---|---|---|---|
| | ₱ 42,009 | 0% | 5% | 10% |
| Decrease | 0% | 65,259 | 50,771 | 36,284 |
| in | 5% | 36,831 | 22,344 | 7,857 |
| Benefits | 10% | 8,404 | (6,084) | (20,571) |

Apayao: EIRR and NPV

| | | FC | LC |
|---|---|---|---|
| Unit cost: | | ₱ 91,000 | ₱ 273,000 |
| Less tax: | 20% | ₱ 72,800 | ₱ 218,400 |
| Per facility-economic cost | | ₱ 72,436 | ₱ 217,308 |

Assume: 10% of investment costs are nontradeables

| With Project | | | |
|---|---|---|---|
| Willingness to pay | | ₱ 40.00 | per month/hh |
| Cost recovery (O&M and depreciation) | | ₱ 29.58 | per month/hh |
| O&M cost | P/month 3,000 | BWSA O&M Expenses | |
| | P/year 1,000 | BWSA monitoring | |
| Consumption (lpcd) | 30 | | |

| | | | | |
|---|---|---|---|---|
| Exchange rate: | ₱ 26.00 | :$1.00 | | |
| Without Project | | | | P/lpcd |
| Contribution (if any) hh/month | | ₱ 2.00 | | 0.13 |
| Labor (as % of minimum wage) cost/day | | ₱ 43.20 | 40% | 2.88 |
| Consumption (lpcd) | | 15 | | |
| Price difference with-without project (per lpcd) | | ₱ 1.68 | | |
| Consumption difference with-without project (lpcd) | | 15 | | |
| Economic cost savings per hh/month | | ₱ 25.20 | | |
| Consumer Surplus (lpcd) | | ₱ 12.60 | | |

hh - Household
lpcd - Liters per capita per day
O&M - Operation and maintenance

BGY. SAN PEDRO, SAN JOSE DE BUENAVISTA

**Antique: EIRR and NPV**

| Year | Investment Cost | O&M Cost | Other Cost | Total Cost | Economic Cost Savings | Consumer Surplus | Total Benefits | Net Benefits |
|---|---|---|---|---|---|---|---|---|
| 1 | 278,568 | 36,000 | 1,000 | 315,568 | 72,480 | 36,240 | 108,720 | (206,848) |
| 2 | | 36,000 | 1,000 | 37,000 | 74,364 | 37,182 | 111,547 | 74,547 |
| 3 | | 36,000 | 1,000 | 37,000 | 76,298 | 38,149 | 114,447 | 77,447 |
| 4 | | 36,000 | 1,000 | 37,000 | 78,282 | 39,141 | 117,423 | 80,423 |
| 5 | | 36,000 | 1,000 | 37,000 | 80,317 | 40,159 | 120,476 | 83,476 |
| 6 | | 36,000 | 1,000 | 37,000 | 82,405 | 41,203 | 123,608 | 86,608 |
| 7 | | 36,000 | 1,000 | 37,000 | 84,548 | 42,274 | 126,822 | 89,822 |
| 8 | | 36,000 | 1,000 | 37,000 | 86,746 | 43,373 | 130,119 | 93,119 |
| 9 | | 36,000 | 1,000 | 37,000 | 89,001 | 44,501 | 133,502 | 96,502 |
| 10 | | 36,000 | 1,000 | 37,000 | 91,315 | 45,658 | 136,973 | 99,973 |

EIRR 37%

NPV @12% 217,451.24

| EIRR | Increase in Investment Costs | | | |
|---|---|---|---|---|
| | 37% | 0% | 5% | 10% |
| Decrease | 0% | 37% | 34% | 32% |
| in | 5% | 33% | 30% | 28% |
| Benefits | 10% | 29% | 27% | 25% |

| NPV @12% | | Increase in Investment Costs | | | |
|---|---|---|---|---|---|
| Decrease | ₱ 217,451 | 0% | 5% | 10% |
| in | 0% | 217,450 | 205,014 | 192,578 |
| Benefits | 5% | 183,689 | 171,253 | 158,817 |
| | 10% | 148,927 | 137,491 | 125,055 |

Antique: EIRR and NPV

| | | FC | LC |
|---|---|---|---|
| *Unit cost:* | | *₱ 91,000* | *₱ 258,960* |
| Less tax: | 20% | ₱ 72,800 | ₱ 207,168 |
| Per facility-economic cost | | ₱ 72,436 | ₱ 206,132 |

Assume: 10% of investment costs are nontradeables

| With Project | | | | P/lpcd |
|---|---|---|---|---|
| Willingness to pay | | ₱ 30.00 | per month/hh | 1.00 |
| Cost recovery (O&M and depreciation) | | ₱ 29.02 | per month/hh | 0.97 |
| O&M cost | P/month 3,000 | | BWSA O&M Expenses | |
| | P/year 1,000 | | BWSA monitoring | |
| Consumption (lpcd) | 30 | | | |

| | | | | |
|---|---|---|---|---|
| Exchange rate: | ₱ 26.00 | :$1.00 | | |
| Without Project | | | | P/lpcd |
| Contribution (if any) hh/month | | ₱ 2.00 | | 0.13 |
| Labor (as % of minimum wage) cost/day | | ₱ 43.20 | 40% | 2.88 |
| Consumption (lpcd) | | 15 | | |
| Price difference with-without project (per lpcd) | | ₱ 2.01 | | |
| Consumption difference with-without project (lpcd) | | 15 | | |
| Economic cost savings per hh/month | | ₱ 30.20 | | |
| Consumer Surplus (lpcd) | | ₱ 15.10 | | |

BGY. SAN MIGUEL, JORDAN

**Guimaras: EIRR and NPV**

| Year | Investment Cost | O&M Cost | Other Cost | Total Cost | Economic Cost Savings | Consumer Surplus | Total Benefits | Net Benefits |
|---|---|---|---|---|---|---|---|---|
| 1 | 238,832 | 36,000 | 1,000 | 275,832 | 60,480 | 30,240 | 90,720 | (185,112) |
| 2 | | 36,000 | 1,000 | 37,000 | 62,052 | 31,026 | 93,079 | 56,079 |
| 3 | | 36,000 | 1,000 | 37,000 | 63,666 | 31,833 | 95,499 | 58,499 |
| 4 | | 36,000 | 1,000 | 37,000 | 65,321 | 32,661 | 97,982 | 60,982 |
| 5 | | 36,000 | 1,000 | 37,000 | 67,020 | 33,510 | 100,529 | 63,529 |
| 6 | | 36,000 | 1,000 | 37,000 | 68,762 | 34,381 | 103,143 | 66,143 |
| 7 | | 36,000 | 1,000 | 37,000 | 70,550 | 35,275 | 105,825 | 68,825 |
| 8 | | 36,000 | 1,000 | 37,000 | 72,384 | 36,192 | 108,576 | 71,576 |
| 9 | | 36,000 | 1,000 | 37,000 | 74,266 | 37,133 | 111,399 | 74,399 |
| 10 | | 36,000 | 1,000 | 37,000 | 76,197 | 38,099 | 114,296 | 77,296 |

EIRR 30%

NPV @12% 120,148.46

| EIRR | Increase in Investment Costs | | | |
|---|---|---|---|---|
| | 30% | 0% | 5% | 10% |
| *Decrease* | *0%* | *30%* | *28%* | *26%* |
| in | 5% | 27% | 25% | 23% |
| Benefits | 10% | 23% | 21% | 20% |

| NPV @12% | | Increase in Investment Costs | | | |
|---|---|---|---|---|---|
| Decrease | ₱ 217,451 | 0% | 5% | 10% |
| in | 0% | 120,148 | 108,205 | 96,263 |
| Benefits | 5% | 91,520 | 79,579 | 67,637 |
| | 10% | 62,894 | 50,952 | 39,011 |

Guimaras: EIRR and NPV

| | | FC | LC |
|---|---|---|---|
| Unit cost: | | ₱ 78,000 | ₱ 222,040 |
| Less tax: | 20% | ₱ 62,400 | ₱ 177,632 |
| Per facility-economic cost | | ₱ 62,088 | ₱ 176,744 |

Assume: 10% of investment costs are nontradeables

| With Project | | | | P/lpcd |
|---|---|---|---|---|
| Willingness to pay | | ₱ 40.00 | per month/hh | 1.33 |
| Cost recovery (O&M and depreciation) | | ₱ 27.02 | per month/hh | 0.90 |
| *O&M cost* | *P/month* 3,000 | | *BWSA O&M Expenses* | |
| | P/year 1,000 | | BWSA monitoring | |
| Consumption (lpcd) | 30 | | | |

| | | | | |
|---|---|---|---|---|
| Exchange rate: | ₱ 26.00 | :$1.00 | | |
| Without Project | | | | P/lpcd |
| Contribution (if any) hh/month | | ₱ 2.00 | | 0.13 |
| Labor (as % of minimum wage) cost/day | | ₱ 43.20 | 40% | 2.88 |
| Consumption (lpcd) | | 15 | | |
| Price difference with-without project (per lpcd) | | ₱ 1.68 | | |
| Consumption difference with-without project (lpcd) | | 15 | | |
| Economic cost savings per hh/month | | ₱ 25.20 | | |
| Consumer Surplus (lpcd) | | ₱ 12.60 | | |

hh - Household
lpcd - Liters per capita per day
O&M - Operation and maintenance

BGY. SALVACION, PROSPERIDAD
Agusan del Sur: EIRR and NPV

| Year | Investment Cost | O&M Cost | Other Cost | Total Cost | Economic Cost Savings | Consumer Surplus | Total Benefits | Net Benefits |
|---|---|---|---|---|---|---|---|---|
| 1 | 289,744 | 36,000 | 1,000 | 326,744 | 66,480 | 33,240 | 99,720 | (227,024) |
| 2 | | 36,000 | 1,000 | 37,000 | 68,208 | 34,104 | 102,313 | 65,313 |
| 3 | | 36,000 | 1,000 | 37,000 | 69,982 | 34,991 | 104,973 | 67,973 |
| 4 | | 36,000 | 1,000 | 37,000 | 71,801 | 35,901 | 107,702 | 70,702 |
| 5 | | 36,000 | 1,000 | 37,000 | 73,668 | 36,834 | 110,502 | 73,502 |
| 6 | | 36,000 | 1,000 | 37,000 | 75,584 | 37,792 | 113,375 | 76,375 |
| 7 | | 36,000 | 1,000 | 37,000 | 77,549 | 38,774 | 116,323 | 79,323 |
| 8 | | 36,000 | 1,000 | 37,000 | 79,565 | 39,783 | 119,348 | 82,348 |
| 9 | | 36,000 | 1,000 | 37,000 | 81,634 | 40,817 | 122,451 | 85,451 |
| 10 | | 36,000 | 1,000 | 37,000 | 83,756 | 41,878 | 125,634 | 88,634 |

EIRR 28%
NPV @12% 126,032.60

| EIRR | Increase in Investment Costs | | | |
|---|---|---|---|---|
| | 28% | 0% | 5% | 10% |
| *Decrease* | 0% | 28% | 26% | 24% |
| in | 5% | 26% | 23% | 21% |
| Benefits | 10% | 22% | 20% | 18% |

| NPV @12% | | Increase in Investment Costs | | |
|---|---|---|---|---|
| Decrease | ₱ 126,033 | 0% | 5% | 10% |
| in | 0% | 126,033 | 111,545 | 97,058 |
| Benefits | 5% | 94,566 | 80,079 | 65,592 |
| | 10% | 63,100 | 48,613 | 34,126 |

Agusan del Sur: EIRR and NPV

| | | FC | LC |
|---|---|---|---|
| Unit cost: | | ₱ 91,000 | ₱ 273,000 |
| Less tax: | 20% | ₱ 72,800 | ₱ 218,400 |
| Per facility-economic cost | | ₱ 72,436 | ₱ 217,308 |

Assume: 10% of investment costs are nontradeables

With Project

| | | | | P/lpcd |
|---|---|---|---|---|
| Willingness to pay | | ₱ 35.00 | per month/hh | ₱ 1.17 |
| Cost recovery (O&M and depreciation) | | ₱ 30.17 | per month/hh | ₱ 1.01 |
| *O&M cost* | *P/month* 3,000 | *BWSA O&M Expenses* | | |
| | P/year 1,000 | BWSA monitoring | | |
| Consumption (lpcd) | 30 | | | |

| | | | | P/lpcd |
|---|---|---|---|---|
| Exchange rate: | | ₱ 26.00 | :$1.00 | |
| Without Project | | | | |
| Contribution (if any) hh/month | | | ₱ 2.00 | 0.13 |
| Labor (as % of minimum wage) cost/day | | | ₱ 43.20 | 40% 2.88 |
| Consumption (lpcd) | | | 15 | |
| Price difference with-without project (per lpcd) | | | ₱ 1.85 | |
| Consumption difference with-without project (lpcd) | | | 15 | |
| Economic cost savings per hh/month | | | ₱ 27.70 | |
| Consumer Surplus (lpcd) | | | ₱ 13.85 | |

BGY. ISAGANI, MAASIN
Southern Leyte: EIRR and NPV

| Year | Investment Cost | O&M Cost | Other Cost | Total Cost | Economic Cost Savings | Consumer Surplus | Total Benefits | Net Benefits |
|---|---|---|---|---|---|---|---|---|
| 1 | 31,830 | 36,000 | 1,000 | 68,830 | 33,240 | 16,620 | 49,860 | (18,970) |
| 2 | | 36,000 | 1,000 | 37,000 | 34,104 | 17,052 | 51,156 | 14,156 |
| 3 | | 36,000 | 1,000 | 37,000 | 34,991 | 17,495 | 52,486 | 15,486 |
| 4 | | 36,000 | 1,000 | 37,000 | 35,901 | 17,950 | 53,851 | 16,851 |
| 5 | | 36,000 | 1,000 | 37,000 | 36,834 | 18,417 | 55,251 | 18,251 |
| 6 | | 36,000 | 1,000 | 37,000 | 37,792 | 18,896 | 56,688 | 19,688 |
| 7 | | 36,000 | 1,000 | 37,000 | 38,774 | 19,387 | 58,162 | 21,162 |
| 8 | | 36,000 | 1,000 | 37,000 | 39,783 | 19,891 | 59,674 | 22,674 |
| 9 | | 36,000 | 1,000 | 37,000 | 40,817 | 20,408 | 61,225 | 24,225 |
| 10 | | 36,000 | 1,000 | 37,000 | 41,878 | 20,939 | 62,817 | 25,817 |

EIRR 19%
NPV @12% 11,054.91

| EIRR | Increase in Investment Costs | | | |
|---|---|---|---|---|
| | 19% | 0% | 5% | 10% |
| Decrease | 0% | 19% | 19% | 18% |
| in | 5% | 15% | 14% | 14% |
| Benefits | 10% | 10% | 10% | 9% |

| NPV @12% | | Increase in Investment Costs | | |
|---|---|---|---|---|
| Decrease | ₱ 126,033 | 0% | 5% | 10% |
| in | 0% | 11,055 | 9,671 | 8,287 |
| Benefits | 5% | (166) | (1,550) | (2,934) |
| | 10% | (11,388) | (12,772) | (14,156) |

Southern Leyte: EIRR and NPV

| | | FC | LC |
|---|---|---|---|
| Unit cost: | | ₱ 10,400 | ₱ 29,588 |
| Less tax: | 20% | ₱ 8,320 | ₱ 23,670 |
| Per facility-economic cost | | ₱ 8,278 | ₱ 23,552 |

Assume: 10% of investment costs are nontradeables

With Project

| | | | |
|---|---|---|---|
| Willingness to pay | | ₱ 35.00 | per month/hh |
| Cost recovery (O&M and depreciation) | | ₱ 33.33 | per month/hh |
| O&M cost | P/month 3,000 | *BWSA O&M Expenses* | |
| | P/year 1,000 | BWSA monitoring | |
| Consumption (lpcd) | 30 | | |

| | | | | P/lpcd |
|---|---|---|---|---|
| Exchange rate: | | ₱ 26.00 | :$1.00 | |
| Without Project | | | | |
| Contribution (if any) hh/month | | | ₱ 2.00 | 0.13 |
| Labor (as % of minimum wage) cost/day | | | ₱ 43.20 | 40% 2.88 |
| Consumption (lpcd) | | | 15 | |
| Price difference with-without project (per lpcd) | | | ₱ 1.85 | |
| Consumption difference with-without project (lpcd) | | | 15 | |
| Economic cost savings per hh/month | | | ₱ 27.70 | |
| Consumer Surplus (lpcd) | | | ₱ 13.85 | |

*hh* - *Household*
lpcd - Liters per capita per day
O&M - Operation and maintenance

## ABILITY TO PAY ANALYSIS

### 1. Ability to Pay

For arriving at the ability to pay level, the monthly water charges of a low-income group household receiving water were compared with the household monthly income. An average household consists of six persons. The level of income considered for this comparison was based on the results of the actual field surveys and review of secondary data.

The analysis indicates that the proposed tariff levels are affordable for low-income group beneficiaries,i.e. those mainly using water from standpipes. With the proposed tariff levels, the operation and maintenance (O&M) costs can be immediately recovered.

The necessity for recovering total O&M costs and for increasing the tariff levels within ability to pay levels has led to suggested revisions of existing tariffs for the schemes. These revisions are within the ability to pay limits of 3 to 5 percent of the household monthly income to ensure the acceptability of the tariffs to the communities. Table 1 indicates the scenarios with the existing and the proposed tariff levels.

**Table 1: Ability to pay levels of low-income groups**

| Barangay | Existing Monthly Tariff (₱) | Proposed Monthly Tariff (₱) | Ability to pay Relating to Proposed Tariffs (percent) |
|---|---|---|---|
| Ambassador | 2.00 | 40.00 | 2.0 |
| Poblacion | 2.00 | 40.00 | 2.7 |
| Agbannawag | 2.00 | 35.00 | 2.9 |
| Malama | 2.00 | 40.00 | 2.7 |
| San Pedro | 2.00 | 30.00 | 2.0 |
| San Miguel | 2.00 | 40.00 | 2.7 |
| Salvacion | 2.00 | 35.00 | 2.3 |
| Isagani | 2.00 | 35.00 | 2.9 |

### 2. *Sensitivity Analysis of Ability to Pay*

A sensitivity analysis of ability to pay was carried out using such different parameters like 10 percent reduction or increase of the monthly income of the consumers, tariff increased by 10 percent, and a combination of these. The ability to pay levels (in percent of household income) are presented in Table 2.

**Table 2: Sensitivity Analysis of Ability to Pay**

| Barangay | Monthly Household Income of Low-Income Group (₱) | Monthly Income minus 10% (percent) (a) | Tariff Increased by 10% (percent) (b) | (a) and (b) combined (percent) |
|---|---|---|---|---|
| Ambassador | 2,000 | 2.2 | 2.2 | 2.4 |
| Poblacion | 1,500 | 3.0 | 2.9 | 3.3 |
| Agbannawag | 1,200 | 3.2 | 3.2 | 3.6 |
| Malama | 1,500 | 3.0 | 2.9 | 3.3 |
| San Pedro | 1,500 | 2.2 | 2.2 | 2.4 |
| San Miguel | 1,500 | 3.0 | 2.9 | 3.3 |
| Salvacion | 1,500 | 2.6 | 2.6 | 2.9 |
| Isagani | 1,200 | 3.2 | 3.2 | 3.6 |

**BOARD OF DIRECTORS**

ASIAN DEVELOPMENT BANK

**FOR OFFICIAL USE ONLY**
(For consideration by the Board
on or about 30 May 1996)

R95-96
9 May 1996

**PROPOSED LOANS**
**RURAL WATER SUPPLY AND SANITATION SECTOR PROJECT**
**(PHILIPPINES)**

1. The Report and Recommendation of the President (RRP:PHI 27013) on proposed loans to the Philippines for the Rural Water Supply and Sanitation Sector Project is circulated herewith, together with the following attachments:

(a) (Draft) Loan Agreement (Ordinary Operations)

(b) (Draft) Loan Agreement (Special Operations)

2. This Report and Recommendation should be read with the review of economic developments and Bank operations in the Philippines (EBO PHI 95006) which was circulated to the Board on 4 July 1995 (DOC.IN.111-95).

For Enquiries: Mr. P. Wallum, Agriculture and Social Sectors Department (East)
(Ext. 6846)
Mr. T. P. Walsh, Programs Department (East)
(Ext. 6253)
Mr. C. C. Fong, Office of the General Counsel
(Ext. 4902)

LOAN NUMBER _____ PHI

# LOAN AGREEMENT
(Ordinary Operations)

(Rural Water Supply and Sanitation Sector Project)

between

REPUBLIC OF THE PHILIPPINES

and

ASIAN DEVELOPMENT BANK

DATED _____

LOAN AGREEMENT
(Ordinary Operations)

LOAN AGREEMENT dated _____ between REPUBLIC OF THE PHILIPPINES (hereinafter called the Borrower) and ASIAN DEVELOPMENT BANK (hereinafter called the Bank).

WHEREAS

(A) the Borrower has applied to the Bank for a loan from its ordinary capital resources and a loan from its Special Funds resources for the purposes of the project (hereinafter called the Project) described in Schedule 1 to the Special Operations Loan Agreement referred to in Recital (B) below;

(B) by an agreement of even date herewith between the Borrower and the Bank (hereinafter called the Special Operations Loan Agreement), the Bank has agreed to lend to the Borrower from the Bank's Special Funds resources an amount in various currencies equivalent to twelve million seven hundred and fifty-eight thousand Special Drawing Rights (SDR 12,758,000) for the purposes of the Project; and

(C) the Bank has agreed to make a loan to the Borrower from the Bank's ordinary capital resources upon the terms and conditions set forth herein and in the Special Operations Loan Agreement;

NOW, THEREFORE, the parties hereto agree as follows:

## ARTICLE I

## Loan Regulations; Definitions

Section 1.01. All the provisions of the Ordinary Operations Loan Regulations of the Bank, dated 1 July 1986, are hereby made applicable to this Loan Agreement with the same force and effect as if they were fully set forth herein, subject, however, to the following modifications thereof (said Ordinary Operations Loan Regulations as so modified being hereinafter called the Loan Regulations):

(a) Section 2.01(17) is deleted and the following is substituted therefore: "The term 'dollar' or 'dollars' or the sign '$' means dollar or dollars in the currency of the United States of America.

(b) Sections 2.01(26) and (27) are deleted and a new Section 2.01(26) is included as follows: "'Dollar Pool' means the pool of outstanding dollar borrowings undertaken by the Bank for the purpose of financing disbursements of dollar loans made by the Bank from the ordinary capital resources."

(c) The last sentence of the first paragraph of Section 3.02 is deleted.

(d) Section 3.01(b)(ii) is deleted and the following substituted therefor: "(ii) 'Qualified Borrowings' in relation to the Loan means the outstanding borrowings of the Bank in the Dollar Pool drawn down after 30 June 1992."

(e) The last sentence of Section 3.06(a) is deleted and the words ", as of a date acceptable to the Bank," in Section 3.06(b) are deleted.

(f) Section 4.02 is deleted and the following substituted therefor: "Withdrawals from the Loan Account shall be made in dollars."

(g) Section 4.03(a) is deleted and the following substituted therefor: "The principal of the Loan shall be repayable in dollars."

(h) Section 4.04 is deleted and the following substituted therefor: "Interest on any portion of the Loan shall be payable in dollars."

(i) The words "and the fee for any special commitment pursuant to Section 5.02" are deleted from Section 4.05.

(j) Section 4.09 is deleted and a new Section 4.09 is included as follows:

> Notwithstanding any provisions in these Regulations to the contrary, withdrawals from the Loan Account in the case of the Loan shall be made, in the exceptional event the Bank determines that it is unable to disburse dollars for the purpose of such withdrawals, in such currency or currencies as the Bank may deem appropriate. The related principal amounts of the Loan shall be repayable in such currency or currencies. The interest rate to be applied to the principal amounts of the Loan disbursed in such currency or currencies shall be based on the costs to the Bank of such currency or currencies plus a spread, both

as reasonably determined by the Bank from time to time.

Section 1.02. Wherever used in this Loan Agreement, unless the context otherwise requires, the several terms defined in the Loan Regulations and in Section 1.02 of the Special Operations Loan Agreement have the respective meanings therein set forth.

## ARTICLE II

## The Loan

Section 2.01. The Bank agrees to lend to the Borrower from the Bank's ordinary capital resources an amount of eighteen million five hundred thousand dollars ($18,500,000).

Section 2.02. The Borrower shall pay to the Bank interest as determined in accordance with Section 3.02 of the Loan Regulations.

Section 2.03. (a) The Borrower shall pay a commitment charge at the rate of three-fourths of one percent (0.75%) per annum. Such charge shall accrue on amounts of the Loan (less amounts withdrawn from time to time), during successive periods commencing sixty (60) days after the date of this Loan Agreement, as follows:

during the first twelve-month period, on $2,775,000;

during the second twelve-month period, on $8,325,000;

during the third twelve-month period, on $15,725,000; and

thereafter, on the full amount of the Loan.

(b) If any amount of the Loan is cancelled, the amount of each portion of the Loan stated in paragraph (a) of this Section shall be reduced in the same proportion as the cancellation bears to the full amount of the Loan before such cancellation.

Section 2.04. Interest and other charges on the Loan shall be payable semiannually on 15 September and 15 March in each year.

Section 2.05. The Borrower shall repay the principal amount of the Loan withdrawn from the Loan Account in accordance with the amortization schedule set forth in Schedule 1 to this Loan Agreement.

## ARTICLE III

## Use of Proceeds of the Loan

Section 3.01. (a) The Borrower shall apply the proceeds of the Loan to the financing of the following expenditures on the Project in accordance with the provisions of this Loan Agreement:

(i) foreign currency expenditures up to an amount equivalent to $10,000,000; and

(ii) local currency expenditures up to an amount equivalent to $8,500,000.

(b) Except as the Borrower and the Bank may otherwise agree, the amounts allocated for financing foreign and local currency expenditures under paragraph (a) of this Section shall be allocated as follows:

(i) for Part B of the Project, up to amounts equivalent to:

(1) $8,900,000 for foreign currency expenditures; and

(2) $8,500,000 for local currency expenditures; and

(ii) for interest and commitment charge on the Loan during the construction period of the Project, up to an amount equivalent to $1,100,000.

Section 3.02. (a) Amounts of the Loan may be withdrawn from the Loan Account only for the purpose of financing (i) subprojects and related expenditures under Part B of the Project, and (ii) interest and commitment charge on the Loan during the construction period of the Project.

(b) Except as the Borrower and the Bank may otherwise agree, all subprojects to be financed under the Loan shall satisfy the criteria agreed with the Bank and follow the

approval procedure specified in paragraph 4 of Schedule 5 to the Special Operations Loan Agreement.

Section 3.03. (a) Subject to paragraph (b) of this Section, if the amount of the Loan allocated to any Part of the Project or to any subproject at any time appears to be insufficient to finance all agreed expenditures for that Part of the Project or that subproject, the Bank may, in consultation with the Borrower, reallocate to such Part of the Project or such subproject, to the extent required to meet the estimated shortfall, amounts of the Loan which have not been allocated or which have been allocated to another Part of the Project or another subproject but, in the opinion of the Bank, are not needed to meet expenditures for that Part of the Project or that subproject. If the amount of the Loan allocated to any Part of the Project or any subproject appears at any time to exceed all agreed expenditures for that Part of the Project or that subproject, the Bank may, in consultation with the Borrower, reallocate such excess amount to any Part of the Project or subproject, as required.

(b) The maximum amount of the proceeds of the Loan which may be allocated to finance local currency expenditures shall not exceed an amount equivalent to $8,500,000.

Section 3.04. The arrangements for withdrawal of the proceeds of the Loan to finance the goods, services and other items of expenditure for the Project shall be in accordance with the provisions of Schedule 2 to this Loan Agreement, as such Schedule may be amended from time to time by agreement between the Borrower and the Bank.

Section 3.05. Except as the Borrower and the Bank may otherwise agree, all goods and services to be financed out of the proceeds of the Loan shall be procured in accordance with the provisions of Schedule 3 and Schedule 4 to the Special Operations Loan Agreement. The Bank may refuse to finance a contract where goods or services have not been procured under procedures substantially in accordance with those agreed between the Borrower and the Bank or where the terms and conditions of the contract are not satisfactory to the Bank.

Section 3.06. Except as the Borrower and the Bank may otherwise agree, the Borrower shall cause all goods and services financed out of the proceeds of the Loan to be used exclusively in the carrying out of the Project.

Section 3.07. The closing date for withdrawals from the Loan Account for the purposes of Section 8.03 of the Loan Regulations shall be 1 February 2002 or such other date as

may from time to time be agreed between the Borrower and the Bank.

## ARTICLE IV

## Particular Covenants

Section 4.01. (a) The Borrower shall cause the Project to be carried out with due diligence and efficiency and in conformity with sound administrative, financial, engineering, environmental, health and public utility practices.

(b) In the carrying out of the Project and operation of the Project facilities, the Borrower shall perform, or cause to be performed, all obligations set forth in Schedule 5 to the Special Operations Loan Agreement.

Section 4.02. The Borrower shall make available, promptly as needed, the funds, facilities, services, land and other resources which are required, in addition to the proceeds of the Loan, for the carrying out of the Project and for the operation and maintenance of the Project facilities.

Section 4.03. (a) In the carrying out of the Project, the Borrower shall cause competent and qualified consultants and contractors, acceptable to the Borrower and the Bank, to be employed to an extent and upon terms and conditions satisfactory to the Borrower and the Bank.

(b) The Borrower shall cause the Project to be carried out in accordance with plans, design standards, specifications, work schedules and construction methods acceptable to the Borrower and the Bank. The Borrower shall furnish, or cause to be furnished, to the Bank, promptly after their preparation, such plans, design standards, specifications and work schedules, and any material modifications subsequently made therein, in such detail as the Bank shall reasonably request.

Section 4.04. The Borrower shall ensure that the activities of its departments and agencies with respect to the carrying out of the Project and operation of the Project facilities are conducted and coordinated in accordance with sound administrative policies and procedures.

Section 4.05. (a) The Borrower shall make arrangements satisfactory to the Bank for insurance of the

facilities and equipment financed out of the proceeds of the Loan to such extent and against such risks and in such amounts as shall be consistent with sound practice.

(b) Without limiting the generality of the foregoing, the Borrower undertakes to insure, or cause to be insured, the goods to be imported for the Project and to be financed out of the proceeds of the Loan against hazards incident to the acquisition, transportation and delivery thereof to the place of use or installation, and for such insurance any indemnity shall be payable in a currency freely usable to replace or repair such goods.

Section 4.06. (a) The Borrower shall maintain, or cause to be maintained, records and accounts adequate to identify the goods and services and other items of expenditure financed out of the proceeds of the Loan, to disclose the use thereof in the Project, to record the progress of the Project (including the cost thereof) and to reflect, in accordance with consistently maintained sound accounting principles, the operations and financial condition of the agencies of the Borrower responsible for the carrying out of the Project and operation of the Project facilities, or any part thereof.

(b) The Borrower shall (i) cause each of DPWH, DILG, DOH and the LGUs concerned to establish and maintain separate accounts for the Project and to have such accounts and statements audited annually, in accordance with appropriate auditing standards consistently applied, by independent auditors whose qualifications, experience and terms of reference are acceptable to the Bank; (ii) ensure that PMO-RWS collects such accounts and related financial statements of DPWH, DILG, DOH and the LGUs concerned; (iii) furnish to the Bank, as soon as available but in any event not later than twelve (12) months after the end of each related fiscal year, certified copies of such audited accounts and financial statements and the report of the auditors relating thereto (including the auditors' opinion on the use of the Loan proceeds and compliance with the covenants of this Loan Agreement), all in the English language; and (iv) furnish to the Bank such other information concerning such accounts and financial statements and the audit thereof as the Bank shall from time to time reasonably request.

(c) The Borrower shall enable the Bank, upon the Bank's request, to discuss the Borrower's financial statements for the Project and its financial affairs related to the Project from time to time with the Borrower's auditors, and shall ensure that a representative of such auditors shall participate in any such discussions requested by the Bank,

provided that any such discussion shall be conducted only in the presence of an authorized officer of the Borrower unless the Borrower shall otherwise agree.

Section 4.07. (a) The Borrower shall furnish, or cause to be furnished, to the Bank all such reports and information as the Bank shall reasonably request concerning (i) the Loan, and the expenditure of the proceeds and maintenance of the service thereof; (ii) the goods and services and other items of expenditure financed out of the proceeds of the Loan; (iii) the Project and any subproject; (iv) the administration, operations and financial condition of the agencies of the Borrower responsible for the carrying out of the Project and the subprojects, and for operation of the Project facilities, or any part thereof; (v) the financial and economic conditions in the territory of the Borrower and the international balance-of-payments position of the Borrower; and (vi) any other matters relating to the purposes of the Loan.

(b) Without limiting the generality of the foregoing, the Borrower shall ensure that the PMO-RWS furnishes to the Bank quarterly consolidated reports on the carrying out of the Project and on the operation and management of the Project facilities. Such reports shall be submitted in such form and in such detail and within such a period as the Bank shall reasonably request, and shall indicate, among other things, progress made and problems encountered during the quarter under review, steps taken or proposed to be taken to remedy these problems, and the proposed program of activities and expected progress during the following quarter.

(c) Promptly after physical completion of the Project, but in any event not later than three (3) months thereafter or such later date as may be agreed for this purpose between the Borrower and the Bank, the Borrower shall ensure that the PMO-RWS prepares and furnishes to the Bank a report, in such form and in such detail as the Bank shall reasonably request, on the execution and initial operation of the Project, including its cost, the performance by the Borrower of its obligations under this Loan Agreement and the accomplishment of the purposes of the Loan.

Section 4.08. The Borrower shall enable the Bank's representatives to inspect the Project, the subprojects, the goods financed out of the proceeds of the Loan, and any relevant records and documents.

Section 4.09. The Borrower shall ensure that the Project facilities are operated, maintained and repaired in accordance with sound administrative, financial, engineering,

environmental, health, public utility, and maintenance and operational practices.

Section 4.10. (a) It is the mutual intention of the Borrower and the Bank that no other external debt owed a creditor other than the Bank shall have any priority over the Loan by way of a lien on the assets of the Borrower. To that end, the Borrower undertakes (i) that, except as the Bank may otherwise agree, if any lien shall be created on any assets of the Borrower as security for any external debt, such lien will ipso facto equally and ratably secure the payment of the principal of, and service charge and any other charge on, the Loan; and (ii) that the Borrower, in creating or permitting the creation of any such lien, will make express provision to that effect.

(b) The provisions of paragraph (a) of this Section shall not apply to (i) any lien created on property, at the time of purchase thereof, solely as security for payment of the purchase price of such property; or (ii) any lien arising in the ordinary course of banking transactions and securing a debt maturing not more than one year after its date.

(c) The term "assets of the Borrower" as used in paragraph (a) of this Section includes assets of any agency of the Borrower, including Bangko Sentral ng Pilipinas and any other institution performing the functions of a central bank for the Borrower.

(d) The Borrower shall, within the limits of the laws in force in its territories, make the foregoing undertaking effective with respect to liens on the assets of its political subdivisions and their agencies; and to the extent that the Borrower is unable within the limits of the laws in force in its territories to make this undertaking effective, the Borrower shall give to the Bank an equivalent lien satisfactory to the Bank.

## ARTICLE V

## Suspension; Cancellation; Acceleration of Maturity

Section 5.01. The following is specified as an additional event for suspension of the right of the Borrower to make withdrawals from the Loan Account for the purposes of Section 8.02(1) of the Loan Regulations: the Borrower shall

have failed to perform any of its obligations under the Special Operations Loan Agreement.

Section 5.02. The following is specified as an additional event for acceleration of maturity for the purposes of Section 8.07(d) of the Loan Regulations: the event specified in Section 5.01 of this Loan Agreement shall have occurred.

## ARTICLE VI

## Effectiveness

Section 6.01. The following are specified as additional conditions to the effectiveness of this Loan Agreement for the purposes of Section 9.01(f) of the Loan Regulations: the Special Operations Loan Agreement shall have been duly executed and delivered on behalf of the Borrower, and all the conditions precedent to its effectiveness (other than a condition requiring the effectiveness of this Loan Agreement) shall have been fulfilled.

Section 6.02. A date ninety (90) days after the date of this Loan Agreement is specified for the effectiveness of the Loan Agreement for the purposes of Section 9.04 of the Loan Regulations.

## ARTICLE VII

## Miscellaneous

Section 7.01. The Secretary of Finance of the Borrower is designated as representative of the Borrower for the purposes of Section 11.02 of the Loan Regulations.

Section 7.02. The following addresses are specified for the purposes of Section 11.01 of the Loan Regulations:

For the Borrower

Secretary
Department of Finance
Executive Tower
Bangko Sentral ng Pilipinas
Complex
Roxas Boulevard
Manila, Philippines

Facsimile Numbers:

(63-2) 522-0164
(63-2) 521-0106
(63-2) 521-9495

For the Bank

Asian Development Bank
P.O. Box 789
0980 Manila, Philippines

Cable Address:

ASIANBANK
MANILA

Telex Numbers:

29066 ADB PH (RCA)
42205 ADB PM (ITT)
63587 ADB PN (ETPI)

Facsimile Numbers:

(63-2) 741-7961
(63-2) 636-2444
(63-2) 636-2403.

IN WITNESS WHEREOF the parties hereto, acting through their representatives thereunto duly authorized, have caused this Loan Agreement to be signed in their respective names and to be delivered at the principal office of the Bank, as of the day and year first above written.

REPUBLIC OF THE PHILIPPINES

_____

Authorized Representative

ASIAN DEVELOPMENT BANK

_____

SCHEDULE 1

Amortization Schedule

(Rural Water Supply and Sanitation Sector Project)

| Date Payment Due | Payment of Principal (dollars) |
|---|---|
| 15 September 2001 | $ 153,100 |
| 15 March 2002 | 160,800 |
| 15 September 2002 | 168,800 |
| 15 March 2003 | 177,300 |
| 15 September 2003 | 186,100 |
| 15 March 2004 | 195,500 |
| 15 September 2004 | 205,200 |
| 15 March 2005 | 215,500 |
| 15 September 2005 | 226,300 |
| 15 March 2006 | 237,600 |
| 15 September 2006 | 249,500 |
| 15 March 2007 | 261,900 |
| 15 September 2007 | 275,000 |
| 15 March 2008 | 288,800 |
| 15 September 2008 | 303,200 |
| 15 March 2009 | 318,400 |
| 15 September 2009 | 334,300 |
| 15 March 2010 | 351,000 |
| 15 September 2010 | 368,600 |
| 15 March 2011 | 387,000 |
| 15 September 2011 | 406,300 |
| 15 March 2012 | 426,700 |
| 15 September 2012 | 448,000 |
| 15 March 2013 | 470,400 |
| 15 September 2013 | 493,900 |
| 15 March 2014 | 518,600 |
| 15 September 2014 | 544,500 |
| 15 March 2015 | 571,800 |
| 15 September 2015 | 600,400 |
| 15 March 2016 | 630,400 |
| 15 September 2016 | 661,900 |
| 15 March 2017 | 695,000 |
| 15 September 2017 | 729,700 |
| 15 March 2018 | 766,200 |
| 15 September 2018 | 804,500 |
| 15 March 2019 | 844,800 |
| 15 September 2019 | 887,000 |
| 15 March 2020 | 931,300 |
| 15 September 2020 | 997,900 |
| 15 March 2021 | 1,026,800 |
| Total | $ 18,500,000 |

## PREMIUMS ON PREPAYMENT

The following percentages are specified as the premiums payable on repayment in advance of maturity of any portion of the principal amount of the Loan pursuant to Section 3.06(b) of the Loan Regulations.

| Time of Prepayment | Premium<br>The interest rate(expressed as a percentage per annum) applicable to the balance outstanding on the Loan on the day of prepayment multiplied by: |
|---|---|
| Not more than 3 years before maturity | 0.12 |
| More than 3 but not more than 6 years before maturity | 0.24 |
| More than 6 but not more than 11 years before maturity | 0.44 |
| More than 11 but not more than 16 years before maturity | 0.64 |
| More than 16 but not more than 20 years before maturity | 0.80 |
| More than 20 but not more than 23 years before maturity | 0.92 |
| More than 23 years before maturity | 1.00 |

SCHEDULE 2

Procurement and Withdrawals of Loan Proceeds

1. Except as the Bank may otherwise agree, the procedures referred to in the following paragraphs of this Schedule shall apply in the procurement of goods and services to be financed out of the proceeds of the Loan and in respect of the withdrawals of the proceeds of the Loan from the Loan Account. The term "services" in this Schedule does not include consulting services, except as otherwise provided in this Schedule.

Procurement

2. Procurement of goods and services shall be subject to the provisions of the "Guidelines for Procurement under Asian Development Bank Loans", revised January 1994, as amended from time to time, which have been furnished to the Borrower. Except as the Bank may otherwise agree, the procurement for civil works for any particular subproject shall not commence before the subproject has been approved by the Provincial Board concerned or the Bank, as the case may be, in accordance with the criteria specified in paragraph 4 of Schedule 5 to the Special Operations Loan Agreement.

3. Procurement of goods and services shall be made without any restriction against, or preference for, any particular supplier or contractor or any particular class of suppliers or contractors, except as otherwise provided in this Schedule.

4. Civil works contracts may be awarded on the basis of local competitive bidding among prequalified contractors in accordance with procedures acceptable to the Bank. After award, a copy of each of the first 10 such contracts from each province shall be furnished to the Bank. PMO-RWS shall maintain copies of all executed civil works contracts and shall provide copies thereof if so requested by the Bank.

5. (a) Each supply contract for equipment or materials estimated to cost the equivalent of $500,000 or more shall be awarded on the basis of international competitive bidding as described in Chapter II of the Guidelines for Procurement.

(b) For contracts to be awarded on the basis of international competitive bidding, there shall be submitted to the Bank, as soon as possible, and in any event not later than 90 days before the issuance of the first invitation to bid for

the Project, a General Procurement Notice (which the Bank will arrange to publish separately) in such form and detail and containing such information as the Bank shall reasonably request. The Bank shall be provided the necessary information to update such General Procurement Notice annually as long as any goods and works remain to be procured on the basis of international competitive bidding.

(c) For contracts to be awarded on the basis of international competitive bidding, procurement actions shall be subject to review by the Bank in accordance with the procedures set forth in Chapter IV of the Guidelines for Procurement. Each draft invitation to bid, to be submitted to the Bank for approval under such procedures, shall reach the Bank at least 42 days before it is issued and shall contain such information as the Bank shall reasonably request to enable the Bank to arrange for the separate publication of such invitation.

6. Each supply contract for equipment or materials estimated to cost less than the equivalent of $500,000 (other than minor items) shall be awarded on the basis of international shopping as described in Chapter III of the Guidelines for Procurement.

7. In comparing domestic bids with foreign bids under international competitive bidding, a margin of preference may be provided, at the option of the Borrower and in accordance with the provisions of the Attachment to this Schedule, for goods manufactured in the Republic of the Philippines, provided that the bidder offering such goods shall have established to the satisfaction of the Borrower and the Bank that the domestic value added equals at least 20 percent of the ex-factory bid price of such goods.

Force Account

8. If justified, and with the prior approval of the Bank, civil works estimated to cost less than the equivalent of $50,000 may be carried out on a force account basis.

Withdrawals

9. No withdrawals from the Loan Account shall be made in respect of any local tax. Except as provided in this Loan Agreement, or as the Bank may otherwise agree, no withdrawals from the Loan Account shall be made in respect of any local expenditures on the Project.

10. Subject to the provisions of Section 3.01 of this Loan Agreement, and except as the Borrower and the Bank shall otherwise agree, the foreign currency expenditures for the following items under Part B of the Project may be financed out of the proceeds of the Loan on the basis of the following percentages (exclusive of local taxes and duties):

| | | |
|---|---|---|
| Part B | | |
| Civil works | : | 9 percent of total expenditures |
| Equipment and materials | : | 32 percent of total expenditures |

11. An amount not exceeding the equivalent of $8,500,000 may be withdrawn from the Loan Account in foreign currency for the financing of local expenditures on the items specified below. Except as the Bank may otherwise agree, withdrawals for such local expenditures may be made on the basis of the following percentages (exclusive of local taxes and duties):

| | | |
|---|---|---|
| Part B | | |
| Civil works | : | 22 percent of total expenditures |
| Equipment and materials | : | 12 percent of total expenditures |
| Consulting services | : | 45 percent of total expenditures |

12. Except as the Bank may otherwise agree, withdrawals for consulting services under Part B of the Project shall not exceed the equivalent of $400,000.

13. Any contract awarded to a local supplier after effective international competitive bidding or international shopping pursuant to paragraphs 5 and 6 of this Schedule shall be financed out of the proceeds of the Loan on the following basis:

(a) where the goods procured from a local supplier are manufactured locally, 100 percent of the ex-factory price of the goods supplied (exclusive of any taxes); and

(b) where the goods procured from a local supplier have been entirely imported, the foreign-currency component of the contract price.

Interest During Construction

14. The Bank shall be entitled to withdraw from the Loan Account and pay to itself, on behalf of the Borrower, the amounts required to meet payments, when due, of interest and commitment charge on the Loan during the construction period of the Project.

Condition for Withdrawal from Loan Account

15. Notwithstanding any other provision of this Loan Agreement, no withdrawals shall be made from the Loan Account for:

(a) any subproject in a province if the relevant LGU in the province in which such subproject is located has not executed a Memorandum of Agreement with DPWH, DILG and DOH, which Memorandum shall set forth the agreement of such province to contribute 10 percent of the total cost of each such subproject in the province;

(b) any Level 1 water supply subproject to be financed until the concerned BWSA responsible for operation and maintenance in relation to such subproject has been duly constituted under Philippine law with the necessary authority to perform effectively all of its responsibilities under the Project in a manner satisfactory to the Bank.

Imprest Account

16. (a) Except as the Bank may otherwise agree, the Borrower shall establish, immediately after the Effective Date, an Imprest Account at Bangko Sentral ng Pilipinas, or a designated state-owned commercial bank, to expedite disbursements of the Loan proceeds. These payments shall be in local currency for eligible expenditures incurred under the Project. The Imprest Account shall be established, managed, replenished and liquidated in accordance with the Bank's "Guidelines on Imprest Fund and Statement of Expenditures Procedures" dated November 1986, as amended from time to time (the Guidelines), and detailed arrangements agreed upon between

the Borrower and the Bank. The initial amount to be deposited into the Imprest Account from the Loan shall not exceed an amount equivalent to $1,000,000.

(b) The statement of expenditures (SOE) procedure may be used for reimbursement of eligible expenditures and for liquidation of advances for payments from the Imprest Account in accordance with the Guidelines, and detailed arrangements agreed upon between the Borrower and the Bank. The individual payment that may be reimbursed or liquidated under the SOE procedure shall be less than $100,000 equivalent for each item of expenditure.

(c) The Borrower shall ensure that (i) the Imprest Account and the expenditures liquidated under the SOE procedures are audited, and (ii) the opinion of the auditors relating thereto are included separately in the auditors' reports required pursuant to Section 4.06(b) of this Loan Agreement.

Pro Rata Withdrawals

17. Except for withdrawals in respect of (i) interest and commitment charge during construction under this Loan Agreement, and (ii) service charge during construction under the Special Operations Loan Agreement, and except as the Borrower and the Bank may otherwise agree, all withdrawals to be made from the Loan and the Special Operations Loan shall be made on a pro rata basis.

Schedule 2

Attachment to Schedule 2
(Page 1)

Preference for Domestically Manufactured Goods

1. In the procurement of goods through international competitive bidding, goods manufactured in the borrowing country may be granted a margin of preference in accordance with the following provisions, provided that the bidder shall have established to the satisfaction of the Borrower and the Bank that the domestic value added equals at least 20 percent of the ex-factory bid price of such goods.

(a) For application of domestic preference, all responsive bids shall first be classified into the following three categories:

(i) Category I: bids offering goods manufactured in the borrowing country which meet the minimum domestic value added requirement;

(ii) Category II: bids offering other goods manufactured in the borrowing country; and

(iii) Category III: bids offering imported goods.

(b) The lowest evaluated bid of each Category shall then be determined by comparing all evaluated bids in each Category among themselves, without taking into account customs duties and other import taxes levied in connection with the importation, and sales and similar taxes levied in connection with the sale or delivery, pursuant to the bids, of the goods.

(c) Such lowest evaluated bids shall next be compared with each other and if, as a result of this comparison, a bid from Category I or Category II is found to be the lowest, it shall be selected for the award of contract.

(d) If, however, as a result of the comparison under subparagraph (c) above, the lowest bid is found to be from Category III, it shall be further compared with the lowest evaluated bid from

Category I. For the purpose of this further comparison only, an upward adjustment shall be made to the lowest evaluated bid price of Category III by adding either:

(i) the amount of customs duties and other import taxes which a nonexempt importer would have to pay for the importation of the goods offered in such Category III bid; or

(ii) 15 percent of the C.I.F. bid price of such goods if the customs duties and import taxes referred to in (i) above exceed 15 percent of the C.I.F. bid price.

If, after such further comparison, the Category I bid is determined to be the lowest, it shall be selected for the award of contract; if not, the lowest evaluated bid from Category III shall be selected for the award.

2. Bidders applying for the preference shall be required to provide necessary information to establish the eligibility of a bid for the preference, including the minimum domestic value added.

3. The bidding documents shall clearly indicate the preference to be granted, the information required to establish the eligibility of a bid for the preference, and the procedures to be followed in the comparison of bids, all as set forth above.

LOAN NUMBER _____ PHI(SF)

# LOAN AGREEMENT
(Special Operations)

(Rural Water Supply and Sanitation Sector Project)

between

REPUBLIC OF THE PHILIPPINES

and

ASIAN DEVELOPMENT BANK

DATED _____

(a) "BWSA" means a Barangay Waterworks and Sanitation Association, or any successor thereto, already established or to be established under the Project;

(b) "DBM" means the Department of Budget and Management of the Borrower, or any successor thereto;

(c) "DILG" means the Department of the Interior and Local Government of the Borrower, or any successor thereto;

(d) "DOH" means the Department of Health of the Borrower, or any successor thereto;

(e) "DPWH" means the Department of Public Works and Highways of the Borrower, or any successor thereto;

(f) "fiscal year" means the fiscal year of the Borrower coinciding with each calendar year;

(g) "Level I system" means a system of water services from a single point source consisting of either a shallow, deep or free-flowing well having a distance of not more than 200 meters from the farthest user or a spring capture having a transmission pipe of not more than 4,000 meters in length, and servicing up to 250 households;

(h) "LGU" or "local government unit" means a province, municipality, city or barangay;

(i) "NGO" means a non-governmental organization;

(j) "O&M" means operation and maintenance;

(k) "PMO-RWS" means the Project Management Office for Rural Water Supply in DPWH established for the implementation of foreign assisted projects, including the Bank-financed Island Provinces Rural Water Supply Sector Project (Loan No. 812 PHI) and Second Island Provinces Rural Water Supply Sector Project (Loan No. 1052 PHI(SF));

(l) "Project Executing Agency" for the purposes of, and within the meaning of, the Loan Regulations means DPWH;

(m) "Project facilities" means the equipment, supplies and facilities to be constructed, rehabilitated or otherwise provided under the Project;

(n) "Project provinces" means the provinces of Abra, Agusan del Sur, Antique, Apayao, Aurora, Basilan, Batanes, Benguet, Biliran, Eastern Samar, Guimaras, Ifugao, Kalinga,

Masbate, Mountain Province, Romblon, Southern Leyte, Sulu, Surigao del Sur, and Tawi-Tawi, and such other provinces as may be agreed upon by the Borrower and the Bank;

(o) "subproject" means a Level I water supply system, public school toilets or household latrines in a barangay and/or district laboratories the construction, rehabilitation or provision of which has been approved or is to be approved for financing under Part B of the Project; and

(p) "WSS" means water supply and sanitation.

## ARTICLE II

## The Loan

Section 2.01. The Bank agrees to lend to the Borrower from the Bank's Special Funds resources an amount in various currencies equivalent to twelve million seven hundred and fifty-eight thousand Special Drawing Rights (SDR 12,758,000).

Section 2.02. The Borrower shall pay to the Bank a service charge at the rate of one percent (1%) per annum on the amount of the Loan withdrawn from the Loan Account and outstanding from time to time.

Section 2.03. The service charge and any other charge on the Loan shall be payable semiannually on 15 September and 15 March in each year.

Section 2.04. (a) Subject to the provisions of paragraphs (b) and (c) below, the Borrower shall repay the principal amount of the Loan withdrawn from the Loan Account in accordance with the amortization schedule set forth in Schedule 2 to this Loan Agreement.

(b) If the Bank shall determine, after due consideration by its Board of Directors, that (i) the Borrower's gross national product per capita (per capita GNP) has exceeded $690 in constant 1985 dollars for five consecutive years and (ii) the Borrower has achieved the capacity to borrow from the Bank's ordinary capital resources, the Bank may, by notice to the Borrower, modify the terms of repayment of the Loan by increasing by 100 percent the amount of each maturity due thereafter until the principal amount of the Loan shall have been fully repaid. However, at the request of the Borrower, the Bank may, in lieu of so increasing any such

maturity amounts, charge interest, at an annual rate to be agreed between the Borrower and the Bank, on the principal amount of the Loan withdrawn and outstanding from time to time in such a manner and to such extent as to yield the same grant element as would be obtained under the above-stated increase of maturity amounts.

(c) If, at any time after a modification of the lending terms pursuant to the provisions of paragraph (b) above, the Bank shall, after due consideration by its Board of Directors, determine that the Borrower's economic condition has deteriorated significantly, the Bank may, at the request of the Borrower, restore the original lending terms with respect to the remaining amount of the Loan withdrawn and outstanding.

## ARTICLE III

## Use of Proceeds of the Loan

Section 3.01. (a) The Borrower shall apply the proceeds of the Loan to the financing of the following expenditures on the Project in accordance with the provisions of this Loan Agreement:

(i) foreign currency expenditures up to an amount equivalent to SDR 6,896,000; and

(ii) local currency expenditures up to an amount equivalent to SDR 5,862,000.

(b) Except as the Borrower and the Bank may otherwise agree, the amounts allocated for financing foreign and local currency expenditures under paragraph (a) of this Section shall be allocated as follows:

(i) for Part B of the Project, up to amounts equivalent to:

(1) SDR 6,689,000 for foreign currency expenditures; and

(2) SDR 5,862,000 for local currency expenditures; and

(ii) for service charge on the Loan during the construction period of the Project, up to an amount equivalent to SDR 207,000.

Section 3.02. (a) Amounts of the Loan may be withdrawn from the Loan Account only for the purpose of financing (i) subprojects and related expenditures under Part B of the Project; and (ii) the service charge on the Loan during the construction period of the Project.

(b) Except as the Borrower and the Bank may otherwise agree, all subprojects to be financed under the Loan shall satisfy the criteria agreed with the Bank and follow the approval procedure specified in paragraph 4 of Schedule 5 to this Loan Agreement.

Section 3.03. (a) Subject to paragraph (b) of this Section, if the amount of the Loan allocated to any Part of the Project or to any subproject at any time appears to be insufficient to finance all agreed expenditures for that Part of the Project or that subproject, the Bank may, in consultation with the Borrower, reallocate to such Part of the Project or such subproject, to the extent required to meet the estimated shortfall, amounts of the Loan which have not been allocated or which have been allocated to another Part of the Project or another subproject but, in the opinion of the Bank, are not needed to meet expenditures for that Part of the Project or that subproject. If the amount of the Loan allocated to any Part of the Project or any subproject appears at any time to exceed all agreed expenditures for that Part of the Project or that subproject, the Bank may, in consultation with the Borrower, reallocate such excess amount to any Part of the Project or subproject, as required.

(b) The maximum amount of the proceeds of the Loan which may be allocated to finance local currency expenditures shall not exceed an amount equivalent to SDR 5,862,000.

Section 3.04. The arrangements for withdrawal of the proceeds of the Loan to finance the goods, services and other items of expenditure for the Project shall be in accordance with the provisions of Schedule 3 to this Loan Agreement, as such Schedule may be amended from time to time by agreement between the Borrower and the Bank.

Section 3.05. Except as the Borrower and the Bank may otherwise agree, all goods and services to be financed out of the proceeds of the Loan shall be procured in accordance with the provisions of Schedule 3 and Schedule 4 to this Loan Agreement. The Bank may refuse to finance a contract where goods or services have not been procured under procedures substantially in accordance with those agreed between the Borrower and the Bank or where the terms and conditions of the contract are not satisfactory to the Bank.

Section 3.06. Except as the Borrower and the Bank may otherwise agree, the Borrower shall cause all goods and services financed out of the proceeds of the Loan to be used exclusively in the carrying out of the Project.

Section 3.07. Withdrawals from the Loan Account in respect of goods and services shall be made only on account of expenditures relating to

(a) goods which are produced in and supplied from and services which are supplied from such member countries of the Bank as shall have been specified by the Bank from time to time as eligible sources for procurement, and

(b) goods and services which meet such other eligibility requirements as shall have been specified by the Bank from time to time.

Section 3.08. The closing date for withdrawals from the Loan Account for the purposes of Section 8.03 of the Loan Regulations shall be 1 February 2002 or such other date as may from time to time be agreed between the Borrower and the Bank.

## ARTICLE IV

## Particular Covenants

Section 4.01. (a) The Borrower shall cause the Project to be carried out with due diligence and efficiency and in conformity with sound administrative, financial, engineering, environmental, health, and public utility practices.

(b) In the carrying out of the Project and operation of the Project facilities, the Borrower shall perform, or cause to be performed, all obligations set forth in Schedule 5 to this Loan Agreement.

Section 4.02. The Borrower shall make or cause to be made available, promptly as needed, the funds, facilities, services, land and other resources which are required, in addition to the proceeds of the Loan, for the carrying out of the Project and for the operation and maintenance of the Project facilities.

Section 4.03. (a) In the carrying out of the Project, the Borrower shall cause competent and qualified consultants and contractors, acceptable to the Borrower and the Bank, to be employed to an extent and upon terms and conditions satisfactory to the Borrower and the Bank.

(b) The Borrower shall cause the Project to be carried out in accordance with plans, design standards, specifications, work schedules and construction methods acceptable to the Borrower and the Bank. The Borrower shall furnish, or cause to be furnished, to the Bank, promptly after their preparation, such plans, design standards, specifications and work schedules, and any material modifications subsequently made therein, in such detail as the Bank shall reasonably request.

Section 4.04. The Borrower shall ensure that the activities of its departments and agencies with respect to the carrying out of the Project and operation of the Project facilities are conducted and coordinated in accordance with sound administrative policies and procedures.

Section 4.05. (a) The Borrower shall make arrangements satisfactory to the Bank for insurance of the Project facilities to such extent and against such risks and in such amounts as shall be consistent with sound practice.

(b) Without limiting the generality of the foregoing, the Borrower undertakes to insure, or cause to be insured, the goods to be imported for the Project and to be financed out of the proceeds of the Loan against hazards incident to the acquisition, transportation and delivery thereof to the place of use or installation, and for such insurance any indemnity shall be payable in a currency freely usable to replace or repair such goods.

Section 4.06. (a) The Borrower shall maintain, or cause to be maintained, records and accounts adequate to identify the goods and services and other items of expenditure financed out of the proceeds of the Loan, to disclose the use thereof in the Project, to record the progress of the Project (including the cost thereof) and to reflect, in accordance with consistently maintained sound accounting principles, the operations and financial condition of the agencies of the Borrower responsible for the carrying out of the Project and operation of the Project facilities, or any part thereof.

(b) The Borrower shall (i) cause each of DPWH, DILG, DOH and the LGUs concerned to establish and maintain separate accounts for the Project and to have such accounts and statements audited annually, in accordance with appropriate

auditing standards consistently applied, by independent auditors whose qualifications, experience and terms of reference are acceptable to the Bank; (ii) ensure that PMO-RWS collects such accounts and related financial statements of DPWH, DLIG, DOH and the concerned LGUs; (iii) furnish to the Bank, as soon as available but in any event not later than twelve (12) months after the end of each related fiscal year, certified copies of such audited accounts and financial statements and the report of the auditors relating thereto (including the auditors' opinion on the use of the Loan proceeds and compliance with the covenants of this Loan Agreement), all in the English language; and (iv) furnish to the Bank such other information concerning such accounts and financial statements and the audit thereof as the Bank shall from time to time reasonably request.

(c) The Borrower shall enable the Bank, upon the Bank's request, to discuss the Borrower's financial statements for the Project and its financial affairs related to the Project from time to time with the Borrower's auditors, and shall ensure that a representative of such auditors shall participate in any such discussions requested by the Bank, provided that any such discussion shall be conducted only in the presence of an authorized officer of the Borrower unless the Borrower shall otherwise agree.

Section 4.07. (a) The Borrower shall furnish, or cause to be furnished, to the Bank all such reports and information as the Bank shall reasonably request concerning (i) the Loan, and the expenditure of the proceeds and maintenance of the service thereof; (ii) the goods and services and other items of expenditure financed out of the proceeds of the Loan; (iii) the Project and any subproject; (iv) the administration, operations and financial condition of the agencies of the Borrower responsible for the carrying out of the Project and the subprojects, and for operation of the Project facilities, or any part thereof; (v) the financial and economic conditions in the territory of the Borrower and the international balance-of-payments position of the Borrower; and (vi) any other matters relating to the purposes of the Loan.

(b) Without limiting the generality of the foregoing, the Borrower shall ensure that the PMO-RWS furnishes to the Bank quarterly consolidated reports on the carrying out of the Project and on the operation and management of the Project facilities. Such reports shall be submitted in such form and in such detail and within such a period as the Bank shall reasonably request, and shall indicate, among other things, progress made and problems encountered during the quarter under review, steps taken or proposed to be taken to remedy these

problems, and the proposed program of activities and expected progress during the following quarter.

(c) Promptly after physical completion of the Project, but in any event not later than three (3) months thereafter or such later date as may be agreed for this purpose between the Borrower and the Bank, the Borrower shall ensure that the PMO-RWS prepares and furnishes to the Bank a report, in such form and in such detail as the Bank shall reasonably request, on the execution and initial operation of the Project, including its cost, the performance by the Borrower of its obligations under this Loan Agreement and the accomplishment of the purposes of the Loan.

Section 4.08. The Borrower shall enable the Bank's representatives to inspect the Project, the subprojects, the goods financed out of the proceeds of the Loan, and any relevant records and documents.

Section 4.09. The Borrower shall ensure that the Project facilities are operated, maintained and repaired in accordance with sound administrative, financial, engineering, environmental, health, public utility, and maintenance and operational practices.

Section 4.10. (a) It is the mutual intention of the Borrower and the Bank that no other external debt owed a creditor other than the Bank shall have any priority over the Loan by way of a lien on the assets of the Borrower. To that end, the Borrower undertakes (i) that, except as the Bank may otherwise agree, if any lien shall be created on any assets of the Borrower as security for any external debt, such lien will ipso facto equally and ratably secure the payment of the principal of, and service charge and any other charge on, the Loan; and (ii) that the Borrower, in creating or permitting the creation of any such lien, will make express provision to that effect.

(b) The provisions of paragraph (a) of this Section shall not apply to (i) any lien created on property, at the time of purchase thereof, solely as security for payment of the purchase price of such property; or (ii) any lien arising in the ordinary course of banking transactions and securing a debt maturing not more than one year after its date.

(c) The term "assets of the Borrower" as used in paragraph (a) of this Section includes assets of any agency of the Borrower, including Bangko Sentral ng Pilipinas and any other institution performing the functions of a central bank for the Borrower.

(d) The Borrower shall, within the limits of the laws in force in its territories, make the foregoing undertaking effective with respect to liens on the assets of its political subdivisions and their agencies; and to the extent that the Borrower is unable within the limits of the laws in force in its territories to make this undertaking effective, the Borrower shall give to the Bank an equivalent lien satisfactory to the Bank.

## ARTICLE V

## Suspension, Cancellation; Acceleration of Maturity

Section 5.01. The following is specified as an additional event for suspension of the right of the Borrower to make withdrawals from the Loan Account for the purposes of Section 8.02(1) of the Loan Regulations: the Borrower shall have failed to perform any of its obligations under the Ordinary Operations Loan Agreement.

Section 5.02. The following is specified as an additional event for acceleration of maturity for the purposes of Section 8.07(d) of the Loan Regulations: the event specified in Section 5.01 of this Loan Agreement shall have occurred.

## ARTICLE VI

## Effectiveness

Section 6.01. The following are specified as additional conditions to the effectiveness of this Loan Agreement for the purposes of Section 9.01(f) of the Loan Regulations: the Ordinary Operations Loan Agreement shall have been duly executed and delivered on behalf of the Borrower, and all the conditions precedent to its effectiveness (other than a condition requiring the effectiveness of this Loan Agreement) shall have been fulfilled

Section 6.02. A date ninety (90) days after the date of this Loan Agreement is specified for the effectiveness of this Loan Agreement for the purposes of Section 9.04 of the Loan Regulations.

## ARTICLE VII

## Miscellaneous

Section 7.01. The Secretary of Finance of the Borrower is designated as representative of the Borrower for the purposes of Section 11.02 of the Loan Regulations.

Section 7.02. The following addresses are specified for the purposes of Section 11.01 of the Loan Regulations:

For the Borrower

Secretary
Department of Finance
Executive Tower
Bangko Sentral ng Pilipinas Complex
Roxas Boulevard
Manila, Philippines

Facsimile Numbers:

(63-2) 522-0164
(63-2) 521-0106
(63-2) 521-9495

For the Bank

Asian Development Bank
P.O. Box 789
0980 Manila, Philippines

Cable Address:

ASIANBANK
MANILA

Telex Numbers:

29066 ADB PH (RCA)
42205 ADB PM (ITT)
63587 ADB PN (ETPI)

Facsimile Numbers:

(63-2) 741-7961
(63-2) 636-2444
(63-2) 636-2403.

IN WITNESS WHEREOF the parties hereto, acting through their representatives thereunto duly authorized, have caused this Loan Agreement to be signed in their respective names and to be delivered at the principal office of the Bank, as of the day and year first above written.

REPUBLIC OF THE PHILIPPINES

_____

Authorized Representative

ASIAN DEVELOPMENT BANK

_____

SCHEDULE 1

Description of the Project

A. OBJECTIVES

1. The objectives of the Project are (i) to improve the capacity of WSS sector agencies, (ii) to provide safe, adequate and reliable WSS services to selected low-income rural communities through community-based arrangements, and (iii) to support health and hygiene education, water quality surveillance, and community management activities.

2. The Project consists of the following components:

Part A: Institutional Development

(a) provision of training to LGUs on (i) organization and management issues, including organization development, participatory approaches, gender and development, BWSA organization, records management, inventory control, and consumer relations, (ii) technical issues, including water resources management, environment sanitation, O&M, and drilling and construction of wells, and (iii) financial management issues, including budgeting, accounting and bookkeeping, financial management and control, and water rates;

(b) provision of training to communities on (i) institutional development, including BWSA formation and registration, involvement of women's organizations, records management system, and networking with BWSAs in other communities, (ii) technical development, including O&M, availability of spare parts, and LGU support, and (iii) financial development, including affordability and willingness to pay, approaches to collection of water fees, cost recovery, bookkeeping, and financial management;

(c) provision of health and hygiene education to communities, focussing on safe drinking water, good habits for personal hygiene, and the control of diarrhea;

(d) establishment of water quality control and surveillance through (i) disinfection of water sources, (ii) water sample collection and testing, (iii) installation of water treatment facilities as appropriate, and (iv) periodic testing of water in designated sample points; and

Part B: Water Supply and Sanitation Subprojects

(a) construction and rehabilitation of Level I water supply subprojects in the Project provinces;

(b) provision of sanitation facilities in selected subprojects, including (i) public and household latrines, (ii) district laboratories, and (iii) chemicals and portable water quality analysis kits; and

(c) provision of consulting services to support the Project implementation capacity of DPWH, DILG and DOH.

3. The Project is expected to be completed by 1 August 2001.

SCHEDULE 2

Amortization Schedule

(Rural Water Supply and Sanitation Sector Project)

| Date Payment Due | Payment of Principal (expressed in Special Drawing Rights)* | |
|---|---|---|
| 15 September 2006 | SDR | 159,400 |
| 15 March 2007 | | 159,400 |
| 15 September 2007 | | 159,400 |
| 15 March 2008 | | 159,400 |
| 15 September 2008 | | 159,400 |
| 15 March 2009 | | 159,400 |
| 15 September 2009 | | 159,400 |
| 15 March 2010 | | 159,400 |
| 15 September 2010 | | 159,400 |
| 15 March 2011 | | 159,400 |
| 15 September 2011 | | 159,400 |
| 15 March 2012 | | 159,400 |
| 15 September 2012 | | 159,400 |
| 15 March 2013 | | 159,400 |
| 15 September 2013 | | 159,400 |
| 15 March 2014 | | 159,400 |
| 15 September 2014 | | 159,400 |
| 15 March 2015 | | 159,400 |
| 15 September 2015 | | 159,400 |
| 15 March 2016 | | 159,400 |
| 15 September 2016 | | 319,000 |
| 15 March 2017 | | 319,000 |
| 15 September 2017 | | 319,000 |
| 15 March 2018 | | 319,000 |
| 15 September 2018 | | 319,000 |
| 15 March 2019 | | 319,000 |
| 15 September 2019 | | 319,000 |
| 15 March 2020 | | 319,000 |
| 15 September 2020 | | 319,000 |
| 15 March 2021 | | 319,000 |
| 15 September 2021 | | 319,000 |

* The figures in this column represent SDR equivalents determined as of the respective dates of withdrawal. The arrangements for payment of each maturity are subject to the provisions of Sections 3.04 and 4.03 of the Loan Regulations.

Schedule 2

| Date Payment Due | Payment of Principal (expressed in Special Drawing Rights)* |
|---|---|
| 15 March 2022 | 319,000 |
| 15 September 2022 | 319,000 |
| 15 March 2023 | 319,000 |
| 15 September 2023 | 319,000 |
| 15 March 2024 | 319,000 |
| 15 September 2024 | 319,000 |
| 15 March 2025 | 319,000 |
| 15 September 2025 | 319,000 |
| 15 March 2026 | 319,000 |
| 15 September 2026 | 319,000 |
| 15 March 2027 | 319,000 |
| 15 September 2027 | 319,000 |
| 15 March 2028 | 319,000 |
| 15 September 2028 | 319,000 |
| 15 March 2029 | 319,000 |
| 15 September 2029 | 319,000 |
| 15 March 2030 | 319,000 |
| 15 September 2030 | 319,000 |
| 15 March 2031 | 319,000 |
| SDR | 12,758,000 |

* The figures in this column represent SDR equivalents determined as of the respective dates of withdrawal. The arrangements for payment of each maturity are subject to the provisions of Sections 3.04 and 4.03 of the Loan Regulations.

SCHEDULE 3

Procurement and Withdrawals of Loan Proceeds

1. Except as the Bank may otherwise agree, the procedures referred to in the following paragraphs of this Schedule shall apply in the procurement of goods and services to be financed out of the proceeds of the Loan and in respect of the withdrawals of proceeds of the Loan from the Loan Account. The term "services" in this Schedule does not include consulting services, except as otherwise provided in this Schedule.

Procurement

2. Procurement of goods and services shall be subject to the provisions of the "Guidelines for Procurement under Asian Development Bank Loans", revised January 1994, as amended from time to time, which have been furnished to the Borrower. Except as the Bank may otherwise agree, the procurement for civil works for any particular subproject shall not commence before the subproject has been approved by the Provincial Board concerned or the Bank, as the case may be, in accordance with the criteria specified in paragraph 4 of Schedule 5 to this Loan Agreement.

3. Procurement of goods and services shall be made without any restriction against, or preference for, any particular supplier or contractor or any particular class of suppliers or contractors, except as otherwise provided in this Schedule.

4. Civil works contracts may be awarded on the basis of local competitive bidding among prequalified contractors in accordance with procedures acceptable to the Bank. After award, a copy of each of the first 10 such contracts from each province shall be furnished to the Bank. PMO-RWS shall maintain copies of all executed civil works contracts and shall provide copies thereof if so requested by the Bank.

5. (a) Each supply contract for equipment or materials estimated to cost the equivalent of $500,000 or more shall be awarded on the basis of international competitive bidding as described in Chapter II of the Guidelines for Procurement.

(b) For contracts to be awarded on the basis of international competitive bidding, there shall be submitted to the Bank, as soon as possible, and in any event not later than 90 days before the issuance of the first invitation to bid for the Project, a General Procurement Notice (which the Bank will

arrange to publish separately) in such form and detail and containing such information as the Bank shall reasonably request. The Bank shall be provided the necessary information to update such General Procurement Notice annually as long as any goods and works remain to be procured on the basis of international competitive bidding.

(c) For contracts to be awarded on the basis of international competitive bidding, procurement actions shall be subject to review by the Bank in accordance with the procedures set forth in Chapter IV of the Guidelines for Procurement. Each draft invitation to bid, to be submitted to the Bank for approval under such procedures, shall reach the Bank at least 42 days before it is issued and shall contain such information as the Bank shall reasonably request to enable the Bank to arrange for the separate publication of such invitation.

6. Each supply contract for equipment or materials estimated to cost less than the equivalent of $500,000 (other than minor items) shall be awarded on the basis of international shopping as described in Chapter III of the Guidelines for Procurement.

7. In comparing domestic bids with foreign bids under international competitive bidding, a margin of preference may be provided, at the option of the Borrower and in accordance with the provisions of the Attachment to this Schedule, for goods manufactured in the Republic of the Philippines, provided that the bidder offering such goods shall have established to the satisfaction of the Borrower and the Bank that the domestic value added equals at least 20 percent of the ex-factory bid price of such goods.

Force Account

8. If justified, and with the prior approval of the Bank, civil works estimated to cost less than the equivalent of $50,000 may be carried out on a force account basis.

Withdrawals

9. No withdrawals from the Loan Account shall be made in respect of any local tax. Except as provided in this Loan Agreement, or as the Bank may otherwise agree, no withdrawals from the Loan Account shall be made in respect of any local expenditures on the Project.

Schedule 3

10. Subject to the provisions of Section 3.01 of this Loan Agreement, and except as the Borrower and the Bank shall otherwise agree, the foreign currency expenditures for the following items under Part B of the Project may be financed out of the proceeds of the Loan on the basis of the following percentages (exclusive of local taxes and duties):

| | | |
|---|---|---|
| Part B | | |
| Civil Works | : | 9 percent of total expenditures |
| Equipment and materials | : | 36 percent of total expenditures |

11. An amount not exceeding SDR 5,862,000 may be withdrawn from the Loan Account in foreign currency for the financing of local expenditures on the items specified below. Except as the Bank may otherwise agree, withdrawals for such local expenditures may be made on the basis of the following percentages (exclusive of local taxes and duties):

| | | |
|---|---|---|
| Part B | | |
| Civil works | : | 22 percent of total expenditures |
| Equipment and materials | : | 12 percent of total expenditures |
| Consulting services | : | 45 percent of total expenditures |

12. Except as the Bank may otherwise agree, withdrawals for consulting services under Part B of the Project shall not exceed the equivalent of SDR 276,000.

13. Any contract awarded to a local supplier after effective international competitive bidding or international shopping pursuant to paragraphs 5 and 6 of this Schedule shall be financed out of the proceeds of the Loan on the following basis:

(a) where the goods procured from a local supplier are manufactured locally, 100 percent of the ex-

factory price of the goods supplied (exclusive of any taxes); and

(b) where the goods procured from a local supplier have been entirely imported, the foreign-currency component of the contract price.

Service Charge

14. The Bank shall be entitled to withdraw from the Loan Account and pay to itself, on behalf of the Borrower, the amounts required to meet payments, when due, of the service charge on the Loan during the construction period of the Project.

Conditions for Withdrawal from Loan Account

15. Notwithstanding any other provision of this Loan Agreement, no withdrawals shall be made from the Loan Account for:

(a) any subproject in a province if the relevant LGU in the province in which such subproject is located has not executed a Memorandum of Agreement with DPWH, DILG and DOH, which Memorandum shall set forth the agreement of such province to contribute 10 percent of the total cost of each such subproject in the province;

(b) any Level 1 water supply subproject to be financed until the concerned BWSA responsible for operation and maintenance in relation to such subproject has been duly constituted under Philippine law with the necessary authority to perform effectively all of its responsibilities under the Project in a manner satisfactory to the Bank.

Imprest Account

16. (a) Except as the Bank may otherwise agree, the Borrower shall establish, immediately after the Effective Date, an Imprest Account at Bangko Sentral ng Pilipinas, or a designated state-owned commercial bank, to expedite disbursements of the Loan proceeds. These payments shall be in local currency for eligible expenditures incurred under the Project. The Imprest Account shall be established, managed, replenished and liquidated in accordance with the Bank's "Guidelines on Imprest Fund and Statement of Expenditures Procedures" dated November 1986, as amended from time to time

(the Guidelines), and detailed arrangements agreed upon between the Borrower and the Bank. The initial amount to be deposited into the Imprest Account from the Loan shall not exceed an amount equivalent to $1,000,000.

(b) The statement of expenditures (SOE) procedure may be used for reimbursement of eligible expenditures and for liquidation of advances for payments from the Imprest Account in accordance with the Guidelines, and detailed arrangements agreed upon between the Borrower and the Bank. The individual payment that may be reimbursed or liquidated under the SOE procedure shall be less than $100,000 equivalent for each item of expenditure.

(c) The Borrower shall ensure that (i) the Imprest Account and the expenditures liquidated under the SOE procedures are audited, and (ii) the opinion of the auditors relating thereto are included separately in the auditors' reports required pursuant to Section 4.06(b) of this Loan Agreement.

Pro Rata Withdrawals

17. Except for withdrawals in respect of (i) interest and commitment charge during construction under the Ordinary Operations Loan Agreement, and (ii) service charge during construction under this Loan Agreement, and except as the Borrower and the Bank may otherwise agree, all withdrawals to be made from the Loan and the Ordinary Operations Loan shall be made on a pro rata basis.

## Preference for Domestically Manufactured Goods

1. In the procurement of goods through international competitive bidding, goods manufactured in the borrowing country may be granted a margin of preference in accordance with the following provisions, provided that the bidder shall have established to the satisfaction of the Borrower and the Bank that the domestic value added equals at least 20 percent of the ex-factory bid price of such goods.

(a) For application of domestic preference, all responsive bids shall first be classified into the following three categories:

(i) Category I: bids offering goods manufactured in the borrowing country which meet the minimum domestic value added requirement;

(ii) Category II: bids offering other goods manufactured in the borrowing country; and

(iii) Category III: bids offering imported goods.

(b) The lowest evaluated bid of each Category shall then be determined by comparing all evaluated bids in each Category among themselves, without taking into account customs duties and other import taxes levied in connection with the importation, and sales and similar taxes levied in connection with the sale or delivery, pursuant to the bids, of the goods.

(c) Such lowest evaluated bids shall next be compared with each other and if, as a result of this comparison, a bid from Category I or Category II is found to be the lowest, it shall be selected for the award of contract.

(d) If, however, as a result of the comparison under subparagraph (c) above, the lowest bid is found to be from Category III, it shall be further compared with the lowest evaluated bid from

Category I. For the purpose of this further comparison only, an upward adjustment shall be made to the lowest evaluated bid price of Category III by adding either:

(i) the amount of customs duties and other import taxes which a nonexempt importer would have to pay for the importation of the goods offered in such Category III bid; or

(ii) 15 percent of the C.I.F. bid price of such goods if the customs duties and import taxes referred to in (i) above exceed 15 percent of the C.I.F. bid price.

If, after such further comparison, the Category I bid is determined to be the lowest, it shall be selected for the award of contract; if not, the lowest evaluated bid from Category III shall be selected for the award.

2. Bidders applying for the preference shall be required to provide necessary information to establish the eligibility of a bid for the preference, including the minimum domestic value added.

3. The bidding documents shall clearly indicate the preference to be granted, the information required to establish the eligibility of a bid for the preference, and the procedures to be followed in the comparison of bids, all as set forth above.

SCHEDULE 4

Consultants

1. The services of consultants shall be utilized in the carrying out of the Project, particularly with regard to water supply engineering, hydrogeology, civil/sanitary engineering, well drilling, health and hygiene education and financial, organizational and administrative matters. The terms of reference of the consultants shall be as determined by agreement between the Borrower and the Bank.

2. The consultants shall be selected and engaged by DPWH in accordance with the following procedures.

(a) Invitation for Proposals. The invitation to submit proposals and all related documents shall be submitted to the Bank for its prior concurrence. For this purpose, three copies of the draft invitation to submit proposals, a list of consultants to be invited, the proposed criteria for evaluation of proposals and other related documents shall be submitted to the Bank. A period of at least 45 days shall be allowed for submission of proposals. A copy of the final invitation as issued, together with all related documents, shall be furnished to the Bank for information promptly after issuance.

(b) Draft Contract. A draft contract with consultants shall be furnished to the Bank for its prior concurrence sufficiently before the commencement of evaluation of proposals.

(c) Execution of Contract. After the conclusion of negotiations but before the signing of the contract, the Bank shall be furnished with (i) the contract as negotiated for its prior concurrence and (ii) the evaluation of the proposals. Promptly after the contract is signed, the Bank shall be furnished with three copies of the signed contract. If any substantial amendment of the contract is proposed after its execution, the proposed changes shall be submitted to the Bank for its prior concurrence.

SCHEDULE 5

Execution of Project and Other Matters

Project Implementation and Coordination

1. DPWH, as the Project Executing Agency, shall have overall responsibility for implementation of the Project. To assist DPWH, the Borrower shall ensure the full and timely cooperation of (i) DILG, which shall be the Implementing Agency for Parts A(a) and (b) of the Project, and (ii) DOH, which shall be the Implementing Agency for Parts A(c) and (d) of the Project.

2. With appropriate inputs from DILG and the beneficiary communities, LGUs, with technical assistance from DPWH, shall design and construct, preferably using qualified private contractors, the water supply facilities for each subproject. DILG shall coordinate and implement capacity building and community management training programs and, through NGOs, initiate community and LGU participation in the Project. DILG shall provide technical assistance to LGUs for conducting socioeconomic surveys and community participation activities relating to the subprojects. DOH shall provide technical assistance to LGUs and communities for the construction of public and household toilet facilities, and implement health and hygiene education and water quality control and surveillance programs.

3. An interagency Project Management Committee (PMC) shall be established and shall be co-chaired by DPWH and DILG. The PMC shall be responsible for planning, programming, execution and overall supervision of the Project. PMO-RWS shall serve as the PMC's secretariat. The Borrower shall ensure that all necessary personnel required for timely implementation of the Project are assigned to the PMC on a full-time basis.

Selection and Implementation of Subprojects

4. Each subproject shall involve the construction or rehabilitation of water supply facilities and, on a selected basis, sanitation facilities, for one barangay. The selection of subprojects shall involve the close collaboration of the beneficiary communities, LGUs and government agencies.

(a) At the community level, BWSAs or, in communities in which a BWSA has not yet been established, the barangay councils shall help mobilize their

respective communities and formulate subproject proposals with the assistance of NGOs.

(b) Participating LGUs (at the municipal level) shall prepare a consolidated list of subproject proposals in their respective municipalities in coordination with the local offices of DPWH, DOH, and other relevant agencies to be submitted to their respective provincial governors. A BWSA shall be established for each subproject according to DILG procedures before such subproject is approved and contracts are awarded therefor. The provincial planning and development offices shall appraise and recommend approval by the Provincial Boards (Sangguniang Panlalawigan) of subproject proposals, in coordination with the provincial DPWH offices, according to certain criteria agreed with the Bank. The approved subproject proposals shall be then forwarded to PMO-RWS.

(c) The first three subprojects in each Project province which have been approved by the relevant Provincial Boards shall be forwarded by DPWH, through the PMO-RWS, to the Bank for its approval. Documentation relating to the proposal, selection and approval of all subprojects shall be maintained by DPWH and furnished to the Bank upon request for audit on an ex-post facto basis.

(d) Approved subprojects shall be implemented principally by participating LGUs in coordination with DILG. In particular circumstances, subprojects may also be implemented by the district offices of DPWH and the regional offices of DOH, in coordination with their respective national offices, concerned LGUs, and, in the case of Level 1 water supply subprojects, with the BWSAs.

Operation and Maintenance

5. (a) The O&M of the Level 1 water supply facilities of each subproject shall be the responsibility of the respective BWSA, and shall be undertaken in accordance with accepted O&M practices. Each BWSA shall select (i) a caretaker to perform regular maintenance of the subproject facilities, and (ii) a treasurer to collect monthly water charges from the beneficiaries sufficient to cover O&M costs and to provide an

allowance for depreciation of assets. In order to facilitate maintenance, DPWH shall issue each caretaker with a set of maintenance tools and shall ensure that such caretakers are adequately trained in maintenance and repair procedures. The BWSAs shall be encouraged to provide fees or incentives in cash or kind to their caretakers and treasurers for their services.

(b) LGUs, in coordination with DPWH and DILG, shall ensure, in consultation with the BWSAs, that major maintenance and repairs are undertaken, using qualified private contractors where feasible. DPWH shall also assist the LGUs concerned in monitoring and inspecting the Project facilities and keeping up-to-date records of their condition for the Bank's review when requested. In addition, DILG shall ensure that the LGUs concerned support the BWSAs with proper procedures for (i) the collection of water charges, (ii) sanctions for nonpayment, (iii) opening and operating bank accounts, and (iv) budget allocations for O&M costs including depreciation.

6. In order to ensure that the Level 1 water supply subproject facilities are operated and maintained efficiently, LGUs shall consult with the concerned BWSA to take its views into account prior to commencement of implementation of any subproject. LGUs shall also cause local labor to be used, to the extent feasible, to ensure community-wide participation in, and knowledge of, proper O&M of the subproject facilities. District Laboratories will be operated and maintained by LGUs (provincial level). Public toilets will be maintained by LGUs (municipal level). School toilets will be maintained by the respective school administrators.

Water Charges

7. (a) In order to facilitate the O&M of the Project facilities, the Borrower, through DILG, shall take all necessary measures to ensure that water charges, sufficient to cover O&M costs and an allowance for depreciation of assets, are collected from all subproject beneficiaries on a timely basis. Such water charges shall be affordable to all residents of the BWSA, and shall be lower for those households living further away from the public standpipes. In this regard, the Borrower, through DILG, shall (i) ensure that subproject beneficiaries are aware of their responsibility to pay water charges, (ii) ensure that each BWSA collects the water charges from their respective subproject beneficiaries, and (iii) review annually the water charges and, if necessary, increase them within three months of the review date.

(b) LGUs shall use their best efforts to ensure that any cash surplus realized by each BWSA from their operations is used for improving and/or expanding WSS facilities.

Accounts

8. DILG shall ensure that each BWSA maintains basic accounts on a cash basis identifying the receipts and expenditures, with records of accumulated depreciation, of the subproject, and shall assist the BWSAs in establishing such accounting systems.

Financing of Subprojects

9. The Borrower shall provide 80 percent of the total cost of each Level 1 water supply subproject, including the proceeds of this Loan and the Ordinary Operations Loan, as a grant. The LGUs concerned shall contribute 10 percent of the total cost of such subproject in cash, as equity; and the beneficiary BWSA shall contribute the balance of 10 percent of the total cost of such subproject in kind. With respect to sanitation facilities (except for private latrines) and district laboratories, the Borrower shall provide all required infrastructure. The LGUs and school administrations concerned shall provide the required land as respective equity contributions.

10. Counterpart funds from the Borrower shall be made available to the Executing and Implementing Agencies through regular budgetary allocations. The Borrower shall ensure that adequate funds for the Project are allocated and released in line with the implementation schedule of the Project.

11. A Memorandum of Agreement shall be prepared among DPWH, DILG, DOH and each Project province to provide for the contribution of 10 percent of the total cost of each subproject in a particular province. Disbursement of Loan proceeds by the Borrower shall be only to those LGUs within provinces which have executed such Memoranda of Agreement.

Land and Water Rights

12. The Borrower shall ensure that all land, rights in land and water, including riparian rights, and other rights and privileges required for the Project are promptly acquired or otherwise made available so as to ensure timely Project implementation.

Schedule 5

Involvement of NGOs and Women

13. Where appropriate, NGOs and women shall be actively encouraged to be involved in the Project. Through DILG, NGOs shall assist in community management activities, conduct socioeconomic surveys, and monitor and evaluate subprojects. Women in the beneficiary barangays shall assist in motivating families to contribute funds and labor for the construction of the subproject facilities and for undertaking O&M. Women shall also be closely involved in the implementation of health and hygiene education programs.

Project Reviews

14. The Borrower and the Bank shall undertake a comprehensive initial review of the implementation arrangements of the Project, including the participation of DPWH, DILG, DOH and LGUs, one year after the Effective Date.

15. The Borrower and the Bank shall undertake a comprehensive mid-term review three years after the Effective Date, or at any other time as may be agreed. The mid-term review shall include an assessment of implementation arrangements, community management, progress of physical implementation, and institutional aspects such as training, the health and hygiene education program and the role of women. Based on the findings of the mid-term review, appropriate adjustments shall be made to the scope of the Project or the implementation arrangements.

Benefit Monitoring and Evaluation

16. DPWH, in consultation with the National Economic and Development Authority, shall refine the benefit monitoring and evaluation system developed in conjunction with prior Bank-financed projects and shall use such refined system for the Project. Such refinement shall be undertaken in consultation with the Bank, within six months of the Effective Date, in accordance with the Bank's "Handbook for Benefit Monitoring and Evaluation".

BWSA Implementing Guidelines

17. The Borrower undertakes, within twelve months of the Effective Date, to amplify and strengthen the Republic Act 6716 Implementing Guidelines dated April 1989, through inclusion of

comprehensive administrative, operational and collections procedures satisfactory to the Bank.