NewTap

Network on Water Technology in Asia and Pacific

Water District Development Sector Project, Philippines

Project Funded by:

ADB

Asian Development Bank

Report Prepared by:

JWRC

Japan Water Research Center

Asian Institute of Technology 1959

Summary

The Water District Development Sector Project is a long-term investment of Asian Development Bank and its supporting funding agencies on the improvement and development of the water supply and sanitation sector of the Philippines. The target is to assist the Government of the Philippines in completing social and sector relevant development goals and ultimately achieve its sectoral targets by the year 2025. The Project Preparatory Technical Assistance has already been completed and the scope, objectives and targets of the project has been finalized through project formulation. Five areas outside of Metro Manila has been finalized as the pilot Water Districts, where the main components of the project will be implemented, following which additional areas that have been highlighted may also be included under the project if there is an excess of budget. The civil works and soft components of the project are to be initiated with the Local Water Utilities Administration as the Executing Agency and the Water Districts as the Implementing Agencies.

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Acronyms and Abbreviations

ADB – Asian Development Bank
CEMP – Contractor's Environmental Management Plan
CIA – Cumulative Impact Assessment
CKWD – City of Koronadal Water District
CNC – Certificate of Non-Coverage
DAO – Department Administrative Order
DENR – Department of Environment and Natural Resources
ECC – Environmental Compliance Certificate
EIA – Environmental Impact Assessment
EIS – Environmental Impact Statement
EMB – Environmental Management Bureau
EMP – Environmental Management Plan
GHG – Greenhouse Gas
GRM – Grievance Redress Mechanism
HUC – Highly Urbanized Cities
IEE – Initial Environmental Examination
LGU – Local Government Unit
LWUA – Local Water Utilities Administration
MC – Memorandum Circular
NCR – National Capital Region
NGO – Non-Government Organization
NIA – National Irrigation Administration
NWRB – National Water Resources Board
PD – Presidential Decree
PEISS – Philippine Environmental Impact Statement System
PIU – Project Implementation Unit
PMU – Project Management Unit
PNSDW – Philippine National Standards for Drinking Water
RA – Republic Act
REA – Rapid Environmental Assessment
RO – Regional Office
SpTF – Septage Treatment Facility
SPS – ADB's Safeguard Policy Statement (2009)
WD – Water District
WDDSP – Water District Development Sector Project
WDGRC – Water District Grievance Redress Committee
WHO – World Health Organization

1. Introduction

The Philippines is a chain of mountainous islands surrounded by the South China Sea to the west, the Philippines Sea to the east and the Celebes Sea to the south. About 7,641 islands of total land area 300,000 km^2 are thinly spread over an area of 2.2 million km^2, with most of the islands containing lush tropical rainforests.

Figure 1: Area Map of the Philippines

According to the 2015 census, the population of Philippines was 0.1 billion people. There are 138 cities in 17 regions in the country, comprising of 1,496 municipalities and 42,027 districts or wards. The National Capital Region (NCR) includes Caloocan City of 1.49 million, the City of Manila of 1.65 million, Quezon City of 2.76 million people and 13 other cities. About 24% of all cities have now been labelled as Highly Urbanised Cities (HUCs), with significant social issues such as lack of space, low quality of life and increase in rate of poverty.

In addition to the social issues, Philippines is also highly vulnerable to environmental risks posed by its geographic location. As Philippines is situated in the western edge of the Ring of Fire, the Philippines is prone to earthquakes (as much as 20 weak ones everyday) and high volcanic activity. The country is also prone to extreme weather events, including the recurrent effects of El Nino causing drought and extended periods of drought. Historical data reveals that over 900,000 people are affected by extreme weather events in the Philippines. Additionally, 70% of the land of Philippines used to be covered by tropical forests, a value that decreased to 18% by 1999, and even less over the recent years. The loss of forest cover has led to a significant decrease in the storage capacity of the natural ecosystem, and irrecoverable losses in natural flood mitigation measures.

a. Water Resources

In contrast to most of the countries in Asia, due to the presence of rich mountainous ecosystems, the Philippines is rich with an excess of naturally occurring fresh water. The World Resources Institute estimates the quantity of available surface and ground water resources of the Philippines to hold a yearly yield of 479 billion cubic meters within 421 river basins. The National Water Resources Board estimates that out of this, only 226 billion cubic meters of water can be utilized by humans. Around 85% of this amount is consumed by the agricultural industry, and the remaining is distributed among other users.

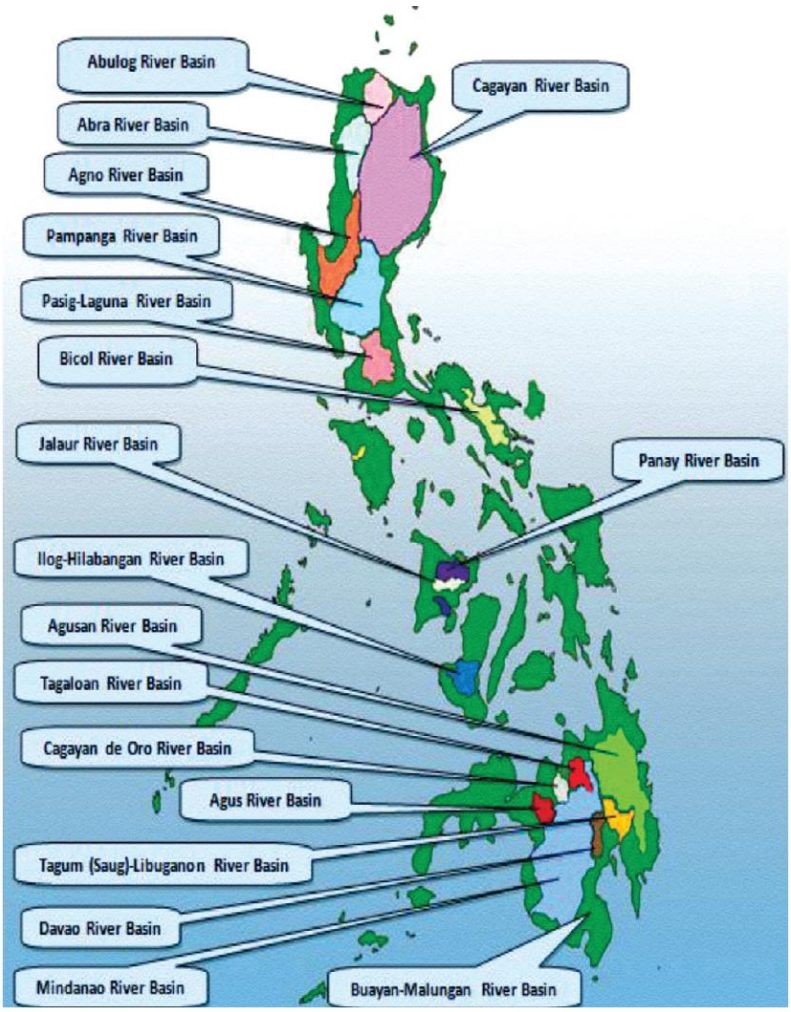

Figure 2: River basins of the Philippines (Source: National Water Resources Board of Philippines)

Even though there is more than 13 m^3 per capita per day capacity of fresh water within the country, the resources are geographically unevenly distributed. This is illustrated by the availability of about 31 million m^3 in the Northern Mindanao region compared to less than 3 million m^3 available in the Central Visayas region. This fluctuation from island to island is mainly caused by the unpredictability of rainfall and the state of the watershed catchment area. Due to the unequal dispersal of fresh water resources, the availability of water in many areas is insufficient in amount and quality for potable and household use.

The rising trend of pollution of the available sources of water has contributed to the shortage of water, enhancing the inadequacies in its distribution. A study conducted in 2003 showed that 58% of the ground water has been contaminated by the infiltration of septage from a lack of proper sanitation facilities.

Deforestation has also rendered some water catchment areas ineffective, due to higher water runoff instead of percolation and collection in aquifers. Saltwater intrusion is also a major challenge facing the quality of water resources in the watersheds of the country. Furthermore, the over extraction of ground water is causing the contamination of ground water sources and leading to the formation of sink holes and areas of high temperature underground. A high level of water wastage and illegal tapping into the water supply system further adds to the problems faced. Due to the increased degradation of the environment and quality of water available, it has been reported by the Philippines Environmental Monitor in 2003 that only 36% of the available surface water sources are good enough to utilize for generation of drinking water.

b. Water Supply Sector and Institutional Capacity

In the Philippines, water systems are classified into one of three levels: Level I, stand-alone water points (e.g., hand pumps, shallow wells, rainwater collectors); Level II, piped water with a communal water point (e.g., bore wells, spring systems); and Level III, piped water supply with a private water point (e.g., a household service connection).

There are more than 30 agencies in the Philippines that play a role in the water resources, supply and sanitation sector, with a multitude of mandates involving monitoring and implementation works that overlap with each other. Areas outside of the urban center Metro Manila, water supply services are provided by a combination of water service providers (WSP), Water Districts (WD), Local Government Unit (LGU) operated utilities, Rural Waterworks and Sanitation Associations (RWSA), Barangay Water and Sanitation Associations (BWSA) and other cooperatives and private companies.

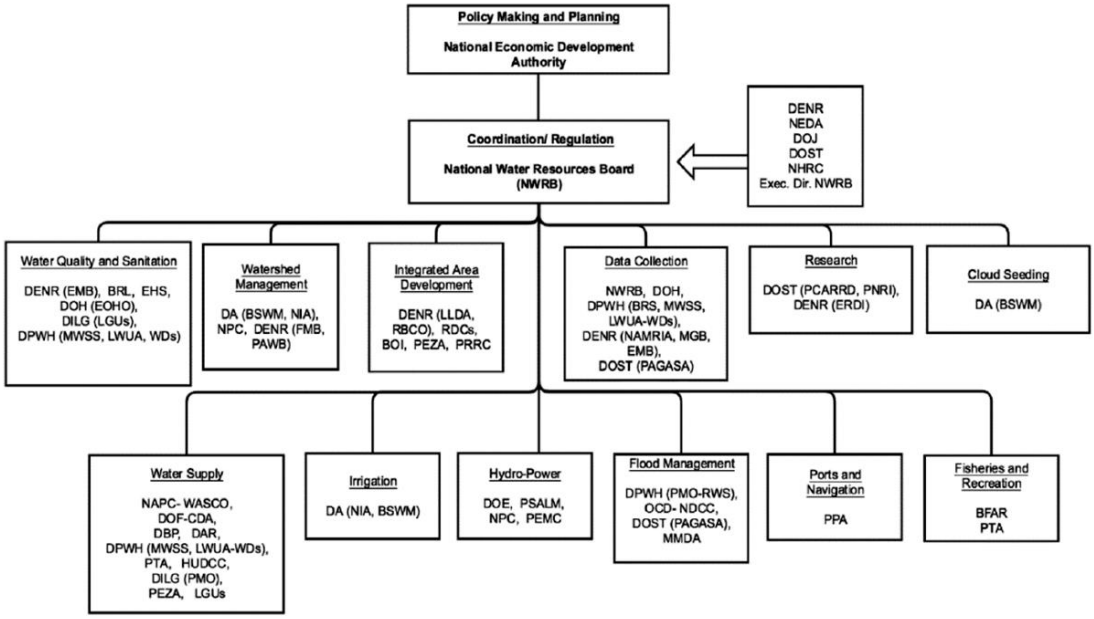

Figure 3: Agencies involved in the Philippine water sector (Source: National Economic and Development Authority, The Philippine Water Sector Roadmap)

Instead of having one focal point for the overall management of the sector works, the Government of Philippines has declared 10 key agencies for the operation, monitoring and regulation of the water sector (excluding the capital city), and 2 agencies that are dedicated to the water sector, which are Local Water

Utilities Administration (LWUA) and National Water Resources Board (NWRB). The government is currently in the process of an institutional review to identify which agency would be most suitable to act as the leader in the water and sanitation sector.

The LWUA and NWRB concepts were introduced by the Provincial Water Utilities Act of 1973, with the responsibility of LWUA as the technical advisory institution for Level III Water Districts (WDs). It has been noted that WD system offers the highest coverage rate and service provision compared to non-WD models. Although WD systems were found to be able to supply water for 24 hours every day at adequate pressure, other systems like LGUs, RWSAs etc. were unable to provide the same rate of supply or the same quality of water, risking the health of the customers.

During the initiation of the ADB project in the early 2000's, there was very limited data available for the evaluation of the water supply coverage or the availability of potable water in the Philippines. Back then, the general trend of the water supply sector was found to be in decline, from 81% in 2000 to as low as 79% in 2005. However, through multiple studies conducted by the Joint Monitoring Program of the World Health Organisation and UNICEF and the National Demographic and Health Survey around the year 2015, it has been established that more than 90% of the population of Philippines have access to an improved source of drinking water. In the reports, urban areas have been found to have a higher coverage of water supply at 94% with the rural areas having 86% coverage. However, these numbers are assuming that a shared facility among different households are considered a safe and improved source of water.

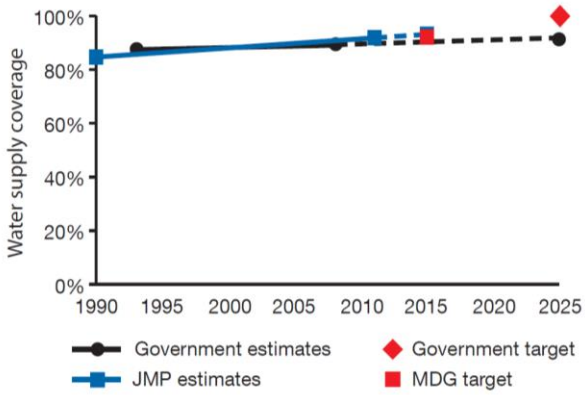

Figure 4: Progress in water supply coverage in the Philippines (Source: Water and Sanitation Program Report by World Bank, 2015)

During the years 2000 and 2007, it was found that the LWUA was suffering from insufficient funding to operate and maintain the Water Districts and was incapable of meeting the rising demand for water supply. There were little investments being made on the expansion of small-scale plants, or the rehabilitation of existing water supply networks, leading to a rapid deterioration of services provided to the public. Additionally, as the rural water supply sector does not have a key agency like LWUA to oversee the quality of service provision, there is a significant gap in technical and financial capacity in service management and operations. Rural water supply service providers are occasionally assisted by the Department of Interior and Local Government (DILG), some Local Government Units (LGU) and Water Districts (WD) for technical advice.

It is important to note that even though there are budget allocations for the improvement of the water and sanitation sector in the Philippines, most of the investment is targeted towards the enhancement of services provided in urban areas, mainly Metro Manila and nearby areas. This leads to unequal distribution of available financial resources to rural areas and other urban areas further away from Metro Manila.

Even with the regulatory support of the local government code, the LGUs were still found to be weak in the technical and financial aspects, due to lack of allocation of funds, low tariff systems and absence of regulations for ensuring sustainability of performance.

The Philippine Water Supply Sector Roadmap (PWSSR) was created in the year 2010, and since then the Government of Philippines has attempted to improve the confusion within the mandates assigned amongst the authorities working in the water supply and sanitation sector. The roadmap aims to achieve universal coverage of drinking water access by the year 2025, development and expansion of the existing water supply systems to cater to the growing population, and to monitor and regulate the service providers. The main objectives of the roadmap include the enhancement of technical and financial capacity of sector authorities and institutions and the establishment of beneficial relationships with donors and stakeholders, in order to improve the capability for infrastructure development, in addition to their operations and maintenance for sustainability.

However, meeting the current targets for the rural and urban areas by the year 2025 is estimated to require more than USD 350 million per year, and even higher if the expenses for the operation and maintenance works, and capacity building works are included.

2. Technical and Technological Brief

The Project Preparatory Technical Assistance (PPTA) of the Water District Development Project has already been completed. The overview of the PPTA phase of the WDDSP Project is given in Table 1 below.

Table 1: Overview of Project Preparatory Technical Assistance (PPTA) of the Water District Development Sector Project, Philippines (ADB, 2019)

Project Name	Water District Development Sector Project
Project ID	41665-012
Project Country	Philippines
Status	Closed
Project Type	Technical Assistance
Approval Date	10th September 2008
Closing Date	20th June 2013
Borrower and Implementing Agency	Local Water Utilities Administration, Katipunan Road, Balara Diliman, Quezon City, Philippines
Total Project Cost	USD 1.20 Million
Sectors	Water and other urban infrastructure and services, Urban sanitation, Urban water supply
Outputs	Bankable sector investment program Capacity development and implementation support for LWUA and water districts.

The overview of the second phase of the Water District Development Sector Project, Philippines is given in Table 2 below.

Table 2: Overview of the Water District Development Sector Project, Philippines (ADB, 2019)

Project Name	Water District Development Sector Project
Project ID	41665-013
Project Country	Philippines
Status	Active
Project Type	Loan, Grant and Technical Assistance
Approval Date	17th February 2017
Estimated Closing Date	31st October 2022
Environmental Category	Environment (B) Involuntary Settlement (B) Indigenous Peoples (C)
Borrower and Implementing Agency	Local Water Utilities Administration, Katipunan Road, Balara Diliman, Quezon City, Philippines
Total Project Cost	USD 76.9 Million
Sectors	Water and other urban infrastructure and services, Urban sanitation, Urban water supply
Geographic Area	(i) Metro La Union Water District (MLUWD), La Union Province, Luzon. (ii) Quezon Metro Water District (QMWD), Quezon Province, Luzon. (iii) Legazpi City Water District (LCWD), Albay Province, Luzon. (iv) Leyte Metro Water District (LMWD), Leyte Province, Visayas. (v) City of Koronadal Water District (CKWD), South Cotobato Province, Mindanao.

3. Financial Brief

The PPTA of the project that has been completed was estimated to cost a total amount of USD 1.5 Million, out of which USD 1.2 Million was funded by Asian Development Bank and their donors. An amount of USD 300,000 was contributed by the Government of the Philippines.

Following the completion of the PPTA, the investment plan for the second phase of the mega project as finalized by the Asian Development Bank from the estimated cost of the components of the project is detailed below in Table 3.

Table 3: Project Investment Plan of the Water District Development Sector Project, Philippines (ADB, 2019)

Item	Amount (USD Million)
A. Base Cost	56.7
Water Supply and Sanitation	1.0
Capacity Development	11.4
B. Contingencies	6.9
C. Financing charges during administration	6.9
Total	**76.9**

At the implementation of the first phase of the project i.e. the PPTA, the funding assistance to be provided by ADB for the shortlisted Water Districts was estimated to be USD 50 million. However, the results of the PPTA and the in-depth project formulation works increased the ADB loan to USD 60 million, with the remainder being provided as grants by other sources an indicated in Table 4 below.

Table 4: Financing Plan of the Water District Development Sector Project, Philippines (ADB, 2019)

	Source	Type of Financing	Details of Financing	Amount (USD Million)
1	Asian Development Bank Ordinary Capital Resources	Loan (3389-PHI)	Loan of 25 year term with 6 year grace period	60.0
2	Urban Environmental Infrastructure Fund under the Urban Financing Partnership Facility of the Government of Sweden	Grant (0477-PHI and TA9103-PHI)	Subsidise pilot sanitation facilities and Technical Assistance	2.5
3	Multi-Donor Trust Fund under the Water Financing Partnership Facility from the governments of Australia, Austria, Norway, Spain and Switzerland	Grant (TA9103-PHI)	Capacity building for water district development	0.5
4	Government	-	Land acquisition, resettlement costs, taxes and duties, office space and audit costs	13.0
			Total	**76.0**

The funding to be provided by the government is for the payment of taxes and duties. Additional in-kind assistance is also to be provided by the government through formulation of the Project Management Unit (PMU) and Project Implementation Unit (PIU), the provision of an office space for consultants, and covering the cost for audits.

The contingencies include din the budget involves 5% for the potential payments that may arise from acquiring land or giving compensation for resettlement, and 10% for base costs. Additionally, variations due to changes in the exchange rates is also included in the contingency.

The flow of funds for the project is detailed in Figure 5 below. The funding of the government counterparts and the donor grants will be used for the payments of the contractors/consultants directly, whereas the ADB loan will be managed through the executing agency (LWUA).

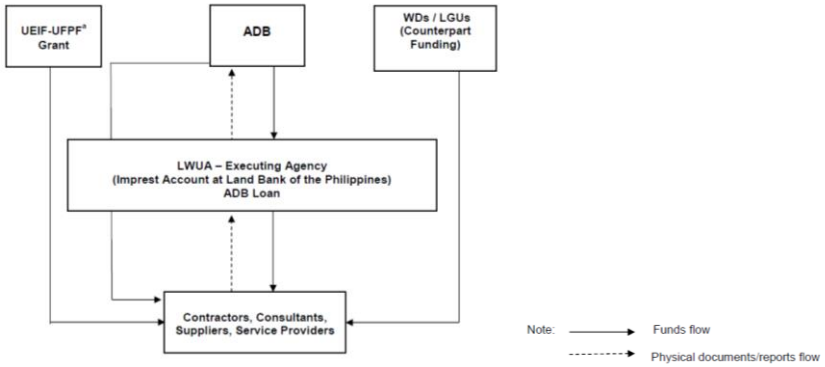

Figure 5: Funds Flow Diagram of the Water District Development Sector Project, Philippines (ADB, 2019)

4. Project Features

a. Technical and technological features

i. Project Team

The project management team has been defined by ADB in their documents as detailed in Figure 6 below.

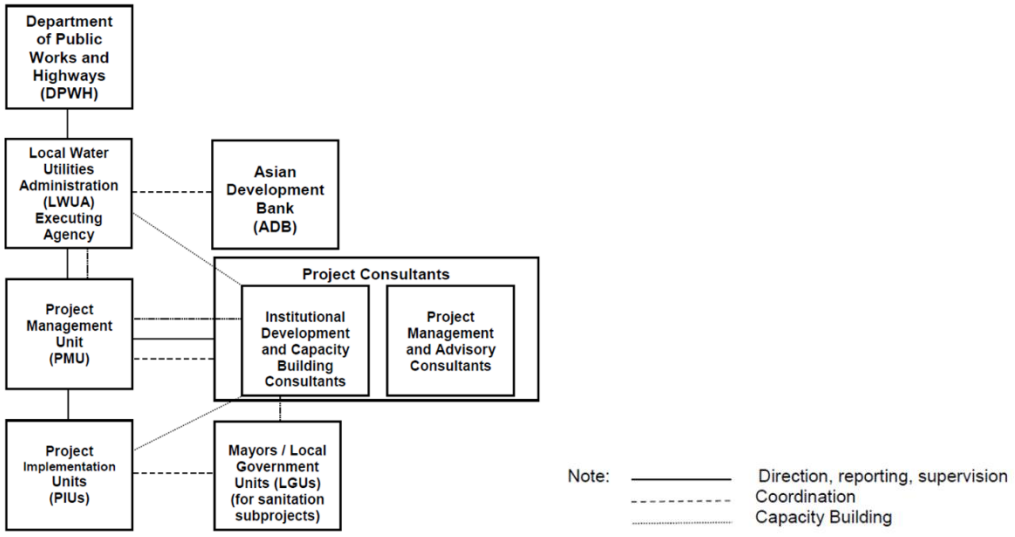

Figure 6: Project Implementation Team (Source: Project Administration Manual, ADB, 2016)

As indicated, the LWUA is the Executing Agency, while the Water Districts are the Implementing Agencies for the respective pilot project in the district. LWUA will be responsible for the establishment of the Project Management Unit (PMU) and coordination of the project works with ADB and government authorities. The procurement, management and implementation works at the national level will be done by the PMU. The Safeguards Officer of the PMU will be assigned with alignment of project works with the safeguards requirements of the funding agencies, and aid the Water Districts and Implementing Agencies with technical assistance in the preparation of safeguard documents.

The Implementing Agencies (IA) or Water Districts (WD) will be coordinating the construction and operation phase of the project, with each one establishing a Project Implementation Unit (PIU). The WDs are required to provide the logistical support to the PIU that is needed for the completion of their works including vehicles, work stations, support staff, etc. They will also be responsible for ensuring that the procurement works of the project are carried out in line with the applicable laws and regulations, including the labor laws and labor standards relevant to work with contractors. Due to the low technical capacity of WDs in managing sanitation aspects of the project, the WDs are also required to enhance their capacity to implement the septage management program under the project.

The PIUs will be responsible for environmental assessment works and the monitoring and reporting of safeguard issues. They will also be required to work closely with the communities to conduct public relation activities, gender mainstreaming activities and public participation workshops. The Social Development and Safeguards Officer (SDSO) of the PIU will be assigned with reviewing of Initial Envionmental Evaluations and Environmental Management Plans prepared during the implementation of the project and their ultimate approval. The SDSO will also ensure that all contractual works are carried out in accordance with the IEEs or EMPs and monitor the works under a set monitoring plan.

Training and awareness workshops will be conducted for the Executing Agency as well as the Implementing Agencies to improve project knowledge base and provide the technical knowledge required for proper implementation and monitoring of the environmental and social aspects of the project.

The contractors hired for the construction works will be required to include an Environment Supervisor or Pollution Control Officer to coordinate works with the WDs and implementing the civil works in line with the IEEs and EMPs.

ii. Project Components

Component 1: Water Supply.
The main target of this component is the reduction of non-revenue water by rehabilitation of existing systems and the construction of new water supply systems to increase the service area. The scope of the activities planned under this component are:

(a) Preparation and implementation of contracts targeting non-revenue water:
- The control of non-revenue water by production metering, district metering, leak detection/pipe location equipment, data logging equipment
- The reduction of non-revenue water by customer meter replacement, pressure reduction (PRVs – pressure reduction valves), mains replacement, service pipe replacement and valve rehabilitation.
- Management of water supply systems by utilization of GIS (geographic information system), establishment of a proper billing system, hydraulic modeling and automated meter reading and the utilization of management information systems.

(b) Preparation and implementation of contracts for new works to expand service coverage:
- groundwater source confirmation (test drilling) where needed
- Detailed engineering design (DED), preparation of bid documents, tendering, bid evaluation, negotiations, contract awards, equipment procurement/installation, and civil works, commissioning/ testing and initial operation of new works to expand service coverage

Component 1 will be implemented by dividing the target Water Districts into batches and conducting the works in two phases as detailed below:

Phase 1: The 5 pilot Water Districts that were selected during the PPTA is the batch 1. The activities to be conducted under the project at all of the the pilot Water Districts includes all the activities of the component detailed above (except for Leyte Metro Water District (LMWD) which is covered under Phase 2). For Metro La Union WD and Quezon Metro WD the implementation of new works to meet the future water demands until 2025 has been split into two phases in order to spread costs. However, only Phase 1 works are proposed to be financed from WDDSP. For the other three pilot water districts the proposed works under the WDDSP are designed to meet 2025 water demands.

Phase 2: The project aims to cover the Leyte Metro Water District under this phase by checking the feasibility of changing the source of raw water to an alternative option and expanding the existing water supply network to enable the use of the alternative source if it is found feasible. Phase 2 will also cover the 4 priority WDs recommended by LWUA from the long-list (Cabuyao, Laguna, Camarines Norte and Sorsogon) as Batch 2. However, the scope of works conducted would be entirely dependent on the loan amount that is in excess after the implementation of Phase 1 works. The activities that will be conducted under Phase 2 involves:

- Review of alternative raw water source and existing water supply system expansion works for Leyte Metro WD.
- Review feasibility studies conducted for Cabuyao, Laguna, Camarines Norte and Sorsogon.
- Formulate and implement contracts for the reduction and control of non-revenue water in Cabuyao, Laguna, Camarines Norte and Sorsogon.
- Prepare detailed engineering designs, conduct procurement works and award contracts, conduct installation or civil works for the expansion of the water supply service coverage of Metro Leyte, Cabuyao, Laguna, Camarines Norte and Sorsogon WDs.

Component 2: Project Implementation Support Services and Capacity Building.
This component of the project involves the provision of consulting services of three types as detailed below:

(a) Provision of technical advice for the preparation of detailed engineering designs and their contract documents for the works to be conducted. Additional technical support will be provided to WDs during the construction supervision phase, for proper supervision and quality control and management of any resettlement works if and where necessary.

(b) Enhancement of technical, financial and managerial capacities of LWUA, PMU, WDs and the communities and non-governmental organisations that are relevant to the project. This soft component is to be carried out in two phases:

i. The first phase involves the evaluation of the existing status of the government structures and legislations that are relevant to LWUA and WDs, formulate development plans and frameworks for the supervision of the performance of service providers and incorporate them into the corporate and business plans of the LWUA, and prepare a basic development plan for WDs.

ii. The second phase depends on the availability of surplus budget from the first phase, which is to be utilized for providing financial aid to the LWUA to implement the prepared corporate and business plans and the WDs to implement the basic business plans.

(c) The overall Project Performance Monitoring System is to be implemented at each of the project sites by monitoring and evaluation consultants hired by the Executing Agency under local consultancy contracts

Project Performance Monitoring: The implementation of the project is to be monitored under a Project Performance Monitoring System (PPMS) that has been established by ADB. The system has performance indicators that will be collected, monitored and recorded by the Project Management Units and Project Implementation Units, and evaluated by the LWUA in order to verify that the project is going in accordance with the plan. Some indicators will also be collected after the completion of the project works at each site. The impact of the project will also be evaluated through the PPMS by creating baseline impact data for all geographical areas of the project and comparing the data with that collected post-project completion.

Compliance Monitoring: ADB will be monitoring the project development and its status semiannually, supported by the Executing Agency and the Implementing Agencies. The project duration is 6 years, the mid term review will be conducted three years into the project life, where the outcome of the PPMS will be used to revisit the scope, design and operational aspects of the project. During the mid term review

the overall progress of the various components of the project as well as the alignment of the project works with the conditions of the funding agencies and the loan agreement will be measured. Additionally, the review will assist the agencies involved in the project to find shortcomings or issues and take steps (if and where required) to rectify them.

b. Economic and Financial Features

The financial feasibility of projects are evaluated by comparing the Financial Internal Rate of Return (FIRR) to the Weighted Average Cost of Capital (WACC). If the FIRR is higher than the WACC, then the capital investment cost of the project as well as the cost of the operations of the components of the project in the long term can be recovered. A high FIRR compared to the WACC can ensure the sustainability of the project, due to the generation of profit enough to offset the costs involved.

For the Water District Development Sector Project, considering the interest of the loan at 9.8% and the capital cost at 12%, the WACC of the project is around 9.77%. The estimated FIRR of the five projects ranges from 15.33% to 21.93%. Since the estimated value of the FIRR is much higher than the WACC, the project is financially feasible.

The report generated by the PPTA shows results of a sensitivity analyses conducted on various scenarios that could potentially influence the FIRR value. The summary of the values of the analysis are shown in Table 5 below. It is clear that the project remains financially viable even under varied scenarios that can decrease the return from the project.

Table 5: FIRR of WDDSP Pilot Sub Projects (Source: PPTA Volume 1 Main Report)

Scenarios	MLUWD	QMWD	LCWD	LMWD	CKWD
Weighted Average Cost of Capital	9.78%	9.78%	9.79%	9.77%	9.77%
Base Case	15.33%	17.86%	18.35%	21.93%	15.39%
1-yr delay in implementation	13.70%	15.81%	16.14%	19.31%	13.74%
Capital cost plus 10%	14.15%	16.53%	16.94%	20.50%	14.19%
O&M costs plus 10%	14.73%	17.06%	17.25%	21.67%	14.34%
Benefits less 10%	13.39%	15.55%	15.60%	20.10%	12.98%
All costs +10%, Benefits -10%	11.72%	13.60%	13.18%	18.92%	10.90%

There is a standing policy of LWUA that the water and sanitation tariff that is implemented in WDs will not be more than 5% of the income of the families that use the water supplied. Therefore, the proposed values are to range from 1.36% go 2.82% in order to make it affordable for poor families.

The Economic Internal Rates of Return (EIRR) exceeds the estimated Economic Opportunity Cost of Capital (EOCC), hence the pilot projects are considered to be economically viable as well. This stays true even if the estimated capital costs and operations and maintenance investments required are raised, and even if the benefits are decreased. Even though most of the subprojects fit the criteria from the estimates, the EIRR for Legazpi City is les s than the estimated EOCC. However, since the different in values is very small, it is said that it can be managed by applying cut backs in the capital or operations and maintenance expenditure.

The average incremental economic cost (AIEC) is lower than the average tariffs for all WDs except for Metro Leyte, proving that the government will not be required to subsidize the water supply and

sanitation services provided to the public at the four WDs. However, at Metro Leyte, an average tariff of PHP 20 per cubic meters compared to an AIEC of PHP 27 per cubic meter, an economic subsidy of PHP 7 per cubic meter will be required. The details of the values of AIEC and the cost recovery from the tariff systems for all 5 subprojects are given in Table 6 below.

Table 6: AIEC and Cost Recovery for Water Supply in 5 WDs (Source: PPTA Volume 1 Main Report)

Parameters	Quezon Metro	Legazpi City	Metro L Union	Leyte Metro	Korona-dal City
AIEC (Php/m^3)					
Eco. capital+O&M (full cost)	10.8	14.2	17.1	27.0	12.9
Economic capital cost only	6.4	6.9	11.1	25.8	7.9
Economic O&M only	6.6	11.2	9.1	1.3	7.4
Ave. tariff, EOCC 15% (Php/m^3)	11.3	23.8	27.0	20.0	13.6
Eco. subsidy, full cost (Php/m^3)	-	-	-	7.1	-
Economic cost recovery (%)					
Capital + O&M cost	105	167	157	74	106
Capital cost only	176	345	241	77	171
O&M cost only	171	214	295	1557	184

Therefore, it is estimated that all selected WDs, excluding for Leyte Metro, will be able to recover all investments, including the full economic cost of water which includes capital investments and O&M. For Leyte Metro, its tariff revenue could fully recover all economic O&M costs but only 77% of the capital investments and 74% of the full economic costs.

c. Social and Environmental Features

It is estimated that there will be no long-term impacts on the environment from any of the components of the project at their target areas. Therefore, the project has been scored a B in the Environment category. The Environmental Assessment and Review Framework (EARF) has been published, which includes all the requirements of the project in an environmental perspective. It is the responsibility of the LWUA and the PIUs formulated by the WDs is to ensure the alignment of the project works as they progress, with the environmental policies highlighted in the EARF. The Project Implementation Units are to submit reports twice a year regarding the environmental impacts that arise during implementation of the project in addition to the level of application of the conditions of the Environmental Management Plans. The WDs in turn will have to provide reports four times a year to the Executing Agencies Project Management Unit and ADB. The Executing agency is also required to do audits and inspections of the project works in relation to the EMPs. The environmental safeguards documents have already been prepared for the selected 5 pilot WDs, in addition to an Initial Environmental Evaluation (IEE). It has been ensured that all environmental policies of the project do not work against any laws and regulation of Philippines.

The project has been awarded a B in the Involuntary Resettlement category due to the lack of requirement for land acquisition works, as most of the project works are to be conducted through the improvement and enhancement of existing water supply systems. However, a Resettlement Framework and Resettlement Plan has already been formulated on the chance that resettlement of people will be required or may come up during the implementation of the project. The Resettlement Plans were created by conducting public consultations, and contingency values have been added to the estimated finances of the project on the off chance that land acquisition is required. Landowners or any individual of the community are to contact the local focal points of the project that are designated by the elected officials of the concerned city. The grievances that have not been solved over a period of 15 days will pass on to

the Project Implementation Units, who will communicate with the relevant Local Government Units to take the necessary action or provide any compensations if necessary. Similarly, if the PIU fails to solve the issue, it will be passed on to the Land Acquisition and Resettlement Committee acting as a grievance redress committee. The committee will meet and discuss the significance of the particular grievance and take action to resolve it in 30 days' time. Grievances that go beyond this level without a proper solution will be dealt with in the relevant courts of law.

Even though the project has been scored a C in the Indigenous People category, an indigenous people planning framework has been created in line with the requirements of ADB and the laws and regulations of the Government of Philippines.

The Gender Action Plan that has been formulated by the project includes objectives to be achieved during the implementation of the project. One of the objectives is the inclusion of health workers, science and public-school teachers with 50% female attendance in the Information Education and Communication (IEC) training sessions to be conducted under component 2 of the project. The information to be included in the IEC training programs are to be finalized with equitable consultations from both genders to ensure effectiveness. Furthermore, all capacity building trainings to be conducted for the employees of WDs is to have at least 30% female attendees. Capacity building sessions on the gender analysis, gender-responsive planning, gender budgeting, and GAP compliance will also be included for the employees of LWUA and WDs. Additionally, a staff of the PMU and PIU is to be assigned the responsibility to monitor the application of the activities highlighted in the Gender Action Plan. It is also stated that at least 30% of the PIU staff should comprise of women, and that there should be enough representation of women on the board of each WD. Women's NGOs and national women's groups are also be included in all stakeholder consultations and meetings, to ensure equal representation of genders.

5. Project Benefits

The increase efficiency and expansion of the existing water supply services at the 5 pilot WDs will have a direct positive impact on more than 56 thousand households in the areas. The installation of 16 outlets of water supply in the Quezon Metro WD will provide at least 320 households of low-income communities with an improved source of water. Additionally, it is estimated at about four thousand public and private institutions and companies will be provided with piped water supply following the project. Therefore, as estimated total value of 317,732 members of the communities of the 5 target areas will directly benefit from the project.

After the implementation of the project, it is predicted that the overall coverage of water supply services will be raised significantly, the details of which are shown in Table 7 below. It is important to note that the project alone will not be enough to meet the projected water demands of the future populations. However, the project can assist the Government of the Philippines to get closer to their goal of achieving a hundred percent water supply coverage by 2025.

Table 7: Direct project beneficiaries until 2035 (Source: PPTA Volume 1 Main Report)

Investment/Parameters	Quezon Metro	Legazpi City	Metro L. Union	Leyte Metro	Korona-dal City	Total
Incremental residential conn.	20,723	7,552	14,017	2,064	7,759	52,115
Incremental public faucets	16	0	0	0	0	16
Incremental non-domestic conn.	1,146	1,636	370	241	900	4,293
Total number of connections	21,885	9,188	14,387	2,305	8,659	56,424
Population served	128,356	42,394	84,724	10,706	51,552	317,732
Initial service coverage (%)	80	75	29	41	44	54
Peak service coverage (%)	94	58	54	36	77	64

It has been previously noted that most of the public funds and investments are aimed at Metro Manila. Therefore, one of the conditions of the project is that the target areas are selected outside of the Metro Manila Area to enable a more even distribution of funds. The WDDSD project aims to target areas that have a known low level of water supply with a coverage between 23% to 54%. The project will enhance the standard of living of the residents of the target areas and increase their water security. It will also assist the Government of the Philippines in achieving the long-term and medium-tern development goals that are related to water supply, sanitation and social well-being.

The increase in water supply coverage in the areas in addition to the conduction of public awareness programs will help in improving the hygiene practices that can lead to a reduction in the spread of water washed diseases. The decreased number of infections will economically benefit the country as well as the public, by reduced health-related financial burdens. It will also reduce the amount of time required for the members of the low income families and the residents of areas with limited water supply to collect the water required for daily use. The people will be free to do something more productive with their time. Additionally, the lower incidences of diseases will increase the working outputs of the residents of the project target areas from increased attendance to work and school. The economic losses due to the low productivity of the general public caused by the lack of improve water supply source will also be significantly reduced. The study also showed that improvements in hygiene practices, particularly hand washing, can reduce annual health costs by up to P25 billion; improved physical access to sanitary toilets, by about P2 billion; and improved physical access to improved toilet systems, by P18 billion. Improvement in the treatment or disposal of waste also has a large impact on water resources and tourism, and can reduce costs by P20 billion. Due to the emphasis on the gender equity balance within the implementation process of the project, it is estimated at the project will enhance the gender responsiveness within the relevant government authorities and even among the public. With the high involvement of the public in at various points of the life of the project, an environment of community participation will be developed which can aid in the accountability of the service providers in the future.

Furthermore, the project will increase the abilities of the involved government authorities and the community in effectively playing their roles in order to make the water supply sector sustainable and successful in the long-term. It will also improve the capacity of service providers through technical support and infrastructure expansion. The project will also positively impact the quality of service provision by introducing a healthy competitive environment for utilities. It also ensures sustainability of the established water sector by aiming to improve the capacity of the LWUA in its management and monitoring. The capacity building programs will enhance the abilities of the LWUAs in preparing future developments, planning investments, monitoring and evaluation of the performance of service providers and providing technical and financial assistance to the WDs. The Water Districts themselves will be more equipped to handle the requirements of operating and maintaining water supply systems and develop plans that can increase the efficiency of the system through technical and financial adjustments.

6. Implementation and Status of the Project

Following a fact-finding mission by officials of the Asian Development Bank in early 2008, the Project Preparatory Technical Assistance (PPTA) for the proposed project Water District Development Sector Project (WDDSP) was formulated. The main objective of the WDDSP was to aid the Government of the Philippines in development of water and sanitation services in areas outside of Metro Manila in order to help achieve the Millennium Development Goals (MDGs). The total cost of the PPTA was about USD 1.5 million with ADB managing USD 1.25 million from Multi-Donor Trust Fund and the government managing remaining amount. The PPTA was completed by 30th June 2013, taking four years more than the originally anticipated 8 months. PPTA was implemented in order to formulate the WDDSP project, highlight the requirements for sectoral support and institutional development including public awareness programs. Five WDs from the most vulnerable areas were also short listed for the implementation of pilot projects during the second phase of WDDSP, and an additional list was also created for the phases of the project that follows upon the successful implementation of phase two.

The Water Districts were selected based on the following criteria: (a) demand for improved water supply and sanitation, (b) fiscal capacity, financial management, commitment to reform, and governance, (c) focus on serving low-income communities, (d) well-defined investment needs, and (e) project preparedness. Another output of the PPTA was detailed Subproject Appraisal Reports (SPAR) were prepared on the five pilot WDs.

The activities that were conducted during the Project Preparatory Technical Assistance includes:

- Evaluation of the existing water resources and their potential use
- Evaluation of the status of the sanitation sector, create concept designs of sanitation management systems and make financial assessments
- Assessment of the water and sanitation related health issues of the public
- Study the existing water supply systems, their infrastructure and utility management, create engineering designs for system expansion and development based on water demand projections
- Socio-economic survey, stakeholder consultations and focus group discussion
- Study the existing status of poverty and gender balance in the society
- Study the population of indigenous people in the target areas and the potential impacts
- Assess the requirements for technical and financial capacity building within the government authorities
- Initial Environmental Evaluation of target areas
- Assessment of the Water Districts included in the list provided by LWUA and short list them according to the project criteria
- Create financial plans based on the objectives to be achieved in the project
- Conduct financial feasibility studies of the project and its components in the selected areas

The implementation plan for the project is given in Figure 7 below. It is important to note that there is no official record of the funding from any of the sources of the project being utilized.

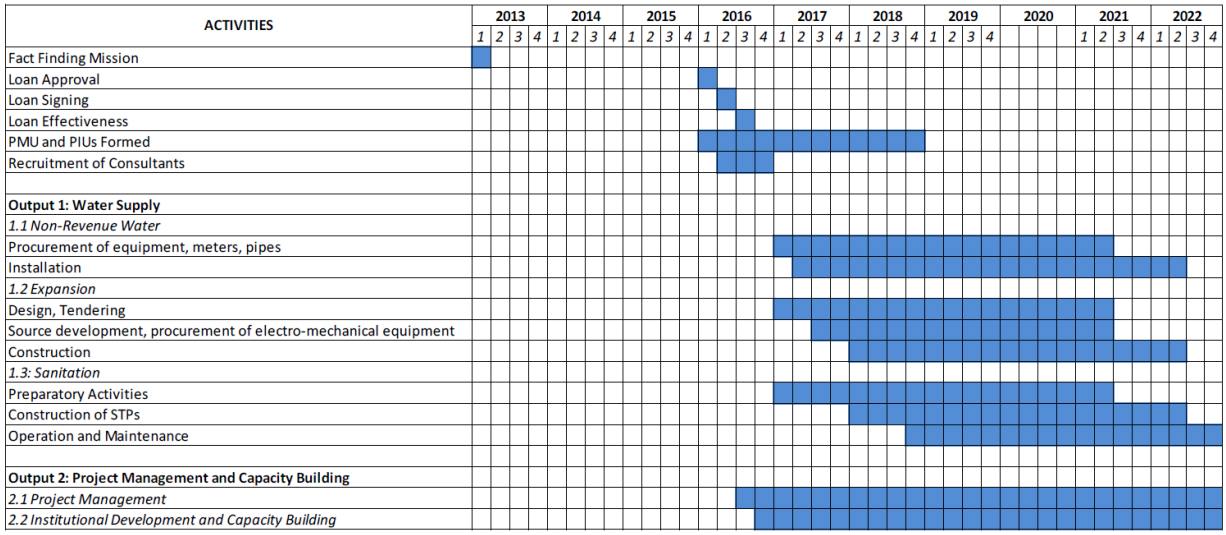

Figure 7: Project Implementation Plan (Source: Project Administration Manual, 2016)

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