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PROJECT TITLE: **Manila Third Sewerage Project**
BORROWER-AGENCY: The Land Bank of the Philippines
FUNDING AGENCY: The World Bank

BACKGROUND

Water pollution in the Philippines is a growing problem due to rapid urbanization and industrialization. One major cause of water pollution is untreated domestic wastewater, which accounts for 48% of total BOD (biochemical oxygen demand) pollution. The annual economic losses from water pollution are estimated at PhP 67 billion (US\$1.3 billion), and include losses in health, fisheries production, and tourism.

Metro Manila (MM), home to 12 million people, is an important economic zone, producing 35.7% of GDP in 2003 ... All Manila waterways are heavily polluted and the situation is grave. MM's key urban watercourses—Marikina River and Pasig River—are biologically dead. About 65% to 75% of pollution is caused by residential sewage, with the rest originating from industries such as tanneries, textile mills, food processing, distilleries, chemical and metal plants as well as from solid waste dumped in the rivers. Metro Manila is located in the hydraulically complex Pasig River – Laguna Bay – Manila Bay watershed, which includes more than 30 tributaries within the urban area ...

While water is supplied to about 90% of MM population, only about 15% is connected to a sewerage system; only one-half of the latter are provided with sewage treatment. About 85% have septic tanks, which are often poorly constructed and inadequately maintained. Most residents rely on open drains to receive effluent from their septic tanks. Only a few living in high-quality developments have constructed separate sewers and small sewage treatment plants. This lack of sanitation facilities, coupled with potential human contact with raw sewage, represents an increased health risk. For example, in 2003, about 9700 cases of diarrhea attributed to either the absence of water supply or sanitation (or both) were recorded in Metro Manila's eastern concession area.

Policy and Institutional Environment

To mitigate the environmental impacts of water pollution, the Government of the Republic of the Philippines (GOP) has enacted many water-related laws, but enforcement is weak due to inadequate resources, poor statistics, institutional fragmentation, and weak cooperation between the central and local government units (LGUs). The latest Government action is the enactment of the Clean Water Act of 2004, which is an integrated, holistic, decentralized and participatory approach to abating, preventing and controlling water pollution. This Act attempts to consolidate the different laws and unify efforts to fight water pollution. However, implementation will be challenging because of the severe fiscal situation in the country.

In MM, the Metropolitan Waterworks and Sewerage System (MWSS) is mandated by law to provide water supply, sewerage and sanitation services, which it does through its two concessionaires, Manila Water Company, Inc (MWCI) in the east and Maynilad Water Services, Inc. (MWSI) in the west ... The concession agreements are designed to ensure full recovery, with an allowable (and necessary) cross-subsidy between water and sewerage/ sanitation. Experience with MWSS privatization has been mixed. MWCI has successfully met or exceeded its concession targets, is in good financial health, and the standards and coverage of water, sewerage and sanitation services have increased significantly since privatization. On the other hand, MWSI has encountered significant problems, which caused it to suspend payment of its concession fee in 2002 and enter arbitration with MWSS. MWSI's restructuring is ongoing, but its fiscal problems have had a profound negative impact on its ability to successfully fulfill its service obligations in the western part of MM ...

Implementation experience from the Manila Second Sewerage Project (MSSP) shows that there are four key problems that limit the efficient implementation of environmentally optimum sewerage and sanitation projects in Metro Manila:

- The concession agreements and 2003 rate rebasing were based on outdated plans, which do not maximize environmental benefits;
- The public has a low awareness of the societal benefits of sewerage and sanitation, and therefore not very sympathetic to the disruption caused when retrofitting sewerage;
- The public's willingness to pay for sewerage and sanitation is low and the current tariff structure does not provide sufficient incentive to make dedicated connections to separate sewerage systems; and
- The capacity and experience of the concessionaires in sewerage provision is limited.

Of the four, two will be discussed in greater detail, as follows:

Low public awareness and limited experience of sewerage in the Philippines. Experience during MSSP has shown that low public awareness of the health and environmental benefits of sewerage and sanitation, weak political support for sewerage services, and the limited experience of the concessionaires in this sector, constrain implementation of sewerage and sanitation projects. The establishment of 17 independent municipalities and cities within MM has fragmented and reduced the fiscal and regulatory capacity of local governments to plan, support and enforce coordinated sewerage and sanitation. The concessionaires do not have sufficient leverage to convince unwilling LGUs to support sewerage and sanitation investments.

Investments under the project will enable MWCI to gain technical experience in construction and management of both combined and separate sewerage systems in areas with septic tanks. Moreover, the project will demonstrate to the public and to LGU the viability of different types of sewerage systems. This is expected to show that a "one size fits all" strategy is not the most beneficial in MM, and that the 2008 rate rebasing should consider a variety of possible technical solutions for the sector. The demonstration effects of the project would be transferable to the west concession area.

The Institutional Strengthening component of the project would support increasing public awareness of the importance of sewerage and sanitation through a public awareness campaign using the mass media.

Limited willingness to pay. The public's limited willingness to pay for sewerage service has been exacerbated by the design of the tariff within the concession agreements. Sanitation services are currently supported by a mandatory *environmental charge*, equal to 10% of the water charge, paid by all water consumers. A sewerage charge of 50% is levied when a household connects to a separate sewerage system. As households are unwilling to pay the additional 50% charge, concessionaires have failed to meet the connection targets. For example, under MSSP, MWSI only completed 86 of a planned 10,000 sewer connections. MWCI is completing 12,000 sewer connections, thanks to its strategy of strong public consultation; nevertheless, some of the communities dropped out during implementation.

The 2003 rate rebasing confirmed that combined sewerage systems could be piloted in Metro Manila. Combined sewerage schemes in MM do not require individual household connections, because households are, in general, already connected to the drainage system ...

Higher level objectives to which the project contributes

The project supports GOP's goal of mitigating the environmental impacts of water pollution as stipulated in the 2004 Clean Water Act, as MM has a very significant influence on national water quality. The project also addresses the CAS theme to support the Private Sector platform growth for enhanced access of then poor and disadvantaged groups to basic services.

PROJECT DESCRIPTION

Project development objective and key indicators

The development objectives of the Manila Third Sewerage Project are: (1) to increase the coverage and effectiveness of sewerage service delivery in participating areas of Metro Manila through an integrated approach involving septage management, sewage management, and heightened consumer awareness of water pollution problems and their solutions; and (b) establish the financial and technical viability of new approaches for sewage management in Metro Manila.

Project components

The project has three components, all located in the east concession area:

1. ***Sewage Management component*** would include construction of 10 sewage treatment plans (STPs), upgrading of two communal septic tanks to secondary treatment, rehabilitation and construction of collection networks;
2. ***Septage Management component*** would include vehicles for pumping-out septage (or materials removed from residential septic tanks) from septic tanks (fecal tankers); two septage treatment plants (SPTPs), and safe disposal of treated septage; and
3. ***Institutional Strengthening component*** would include (a) the carrying out of a public information campaign on the benefits of sewerage and sanitation services, and on the best practices of proper disposal of sewage; and (b) assistance in the preparation of follow-up programs for wastewater and sanitation improvements.

IMPLEMENTATION

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4. **Monitoring and evaluation of outcomes/results** (see Results Framework and Monitoring, next page)

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5. Implementation covenants

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- MWCI shall not commence construction of the sewage treatment plants in Manggahan Floodway and Signal Village, until MWCI has made appropriate arrangements with Taguig Municipality, according to the applicable laws of the Philippines, for securing public land necessary for implementation of the Manggahan Floodway and Signal Village sewage systems.
- Prior to commencing construction, MWCI has prepared an environmental management plan, satisfactory to the Bank, for the construction of the concerned sewage treatment plant ... if the environmental screening carried out in accordance with principles set forth in the Environmental and Social Assessment Framework concludes that such environmental management plan is required ...
- MWCI has taken all measures necessary to ensure that all Displaced Persons have been resettled and compensated, in accordance with a resettlement action plan, satisfactory to the Bank, in conformity with the Land Acquisition, Resettlement and Rehabilitation Framework, if the project involves the involuntary resettlement of any persons.

Results Framework and Monitoring

PDO	Outcome Indicators	Use of Outcome Information
<p>To increase the coverage and effectiveness of sewerage service delivery in participating areas of MM through an integrated approach involving septage management, sewage management, and heightened consumer awareness of water pollution problems and their solutions.</p> <p>To establish the financial and technical viability of new approaches for wastewater management of Metro Manila.</p>	<p>Gradual increase in satisfaction of residents with sewerage/sanitation service delivery in participating areas, including health incidences of diarrhea</p> <p>Total BOD removed by the project (tones/yr)</p> <p>Percent increase in take-up rate of desludging service (% take-up rate /yr)</p> <p>No. of sewage treatment plans treating combined flows in a sustainable manner that comply with relevant discharge standards (#)</p> <p>Cost of operation in an acceptable range</p>	<p>Evaluate environmental benefits of the project</p> <p>Monitoring progress in water quality improvement in Metro Manila</p> <p>Establish local experience in combined sewerage leading to: future concession renegotiations, improvements in designs, further expansion of combined sewerage technology across MM and lessons learned for other Asian cities</p>
Intermediate Results (one/component)	Results Indicators for Each Component	Use of Results Monitoring
<p>C1: Sewage Management Increase coverage of sewerage service in Metro Manila</p> <p>Increase in sewage treated prior to disposal</p> <p>Reduce likelihood of human contact with sewage</p>	<p>Component One: No. of water connections in MWCI areas with sewage treatment service (#/yr)</p> <p>Volume of sewage treated before disposal (m3/yr)</p> <p>Length of drainage lines installed or rehabilitated (in meter)</p>	<p>Component One: Achieve MWCI compliance with concession targets, evaluate benefits of sewerage program</p> <p>Evaluate efficiency of sewerage treatment</p> <p>Use in awareness raising campaigns on human risk exposure to sewage</p>
<p>C2: Septage Management Increase in coverage of septic tank de-sludging program</p> <p>Increase in septage treated prior to disposal</p> <p>Increase efficiency of treatment in septic tanks</p>	<p>Component Two: No. of water connections with septic tanks de-slugged in MWCI service area (#/yr)</p> <p>Volume of septage treated before disposal (m3/yr)</p> <p>% of BOD reduction in the septic tanks in a sample not smaller than 0.5% (% average reduction)</p>	<p>Component Two: Achieve MWCI compliance with concession, evaluate environmental benefits of sanitation program</p> <p>Evaluate efficiency of septage treatment of sanitation program</p> <p>Evaluate efficiency of septic tank de-sludging program and validate influent quality parameter used in the design of sewage treatment plants for combined systems</p>
<p>C3: Institutional Strengthening Increase awareness of consumers</p>	<p>Component Three: No. of people reached by public information campaign (#/yr)</p>	<p>Component Three: Design most efficient methods of raising public</p>

of importance of improved wastewater, septage management, and personal hygiene	Percent increase in take-up rate of desludging services (% take-up rate/yr)	awareness and acceptance
Prepare follow-up wastewater and sanitation programs	A follow-up program prepared and approved by the MWSS	Evaluate efficiency of septage desludging of sanitation program Design of advanced wastewater and sanitation improvements as tested in this project

APPRAISAL SUMMARY

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1. Economic

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2. Technical

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3. Fiduciary

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4. Social

The project will bring overall positive social impacts by reducing health risks from exposure to raw sewage and polluted surface waters. All adverse social impacts will be mitigated. The Environmental and Social Assessment Framework (ESAF) for the project provides for future on addressing unforeseen environmental and social impacts.

Resettlement. A total of 14 households will have to be resettled as a result of the project. Two abbreviated RAPs (Resettlement Action Plans) have been prepared and compensation and relocation procedures will be applied as specified in the Land Acquisition, Resettlement and Rehabilitation Framework.

DPWH Project. MTSP is expected to use four flood-retention ponds included in the DPWH Project as secondary sewage treatment facilities. This DPWH project obtained DENR clearance on 18 June 1993. For the Taguig Sewerage System component, a due diligence assessment was conducted by the Bank, with respect to the applied social and environmental safeguards standards, particular to the land acquisition process as a part of the project preparation. The assessment revealed that while there are differences in methodologies and procedures in dealing with land acquisition and resettlement between the DPWH project and Bank-assisted projects, these aspects are being addressed (various types of losses are compensated and resettlement assistance is being provided) to the satisfaction of the Bank. The outcomes for the people who were resettled, for the completed parts, are comparable to what they would have been under Bank policies. There are outstanding and unresolved claims regarding land titling, but systems are in place to address grievances. Also, there is strong support from the concerned LGUs to assist displaced persons in seeking redress to their concerns regarding the realignment of the dike, and a commitment on the part of DPWH to ensure that the new resettlements are adequately addressed in the project.

5. Environment

The project will have a positive impact on the region's overall environmental quality. Increase of sewerage revenues will strengthen the basis for a sustainable framework for the funding of the long-term environmental protection in the area. Adverse environmental impacts are minor, mainly related to construction of facilities; risks linked to the disposal of collected septage and sludge is expected to be minimal. All impacts and risks have been satisfactorily mitigated, and have been integrated into the environmental management plan (EMP).

The Philippine environmental assessment legal framework is adequate ...

Disposal of septage and sludge ...

6. Safeguard policies

a. What is the safeguard screening category of the project? (S1, S2, S3, SF): **S2**

b. What is the environmental screening category of the project? (A,B,C, F1): **A**

c. If applicable, what are the key safeguard policy issues raised by the project?

Community consultations, environment, and resettlement

MWCI has documented all consultations, completed EIA, REA, ESAF, RAP, and provided information for the due diligent assessment of the DPWH project

d. If applicable, what are the main results of any safeguard policy related studies, and how have they been incorporated into the project?

Adverse environmental impacts are minor (mainly construction related) and risks are linked to the disposal of septage and sludge. Satisfactory mitigation measures for all impacts and risks have been planned, and have been integrated into the environmental management plan (EMP).

e. What is the borrower's capacity to implement the safeguard policies recommendations, and, if the capacity is insufficient, how will this capacity be brought to the required level?

Both LBP and MWCI have extensive experience in the preparation and implementation of similar Bank-supported projects. Through the implementation of the ongoing Water District Development Project and Rural Finance Projects 2 and 3, LBP has developed effective working procedures for on-lending activities and application of safeguards. MWCI has extensive experience with Bank procedures, as this project is a follow-up to the ongoing MSSP.

f. What type of consultations has been conducted related to safeguard issues? How did these consultations influence project design?

Surveys/interviews, public consultations for concerned barangays and communities, and focus group discussions with local government officials (barangay and municipal level).

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