1. Sector Performance, Problems, and Opportunities

1. Sector performance. In its commitment to the Millennium Development Goals (MDGs), the Government of Sri Lanka identified access to safe drinking water and adequate sanitation as priority objectives. Its targets for 2015 are (i) 86% of households have sustainable access to safe drinking water, and (ii) 93% of the population has access to improved sanitation. In 2008, the government indicated that Sri Lanka would meet the MDG targets for water supply and sanitation services, however, the condition of the services was a concern.\(^1\) During 1990–2004, access to improved water sources increased from 91% to 98% of the urban population, and from 62% to 74% of rural residents.\(^2\) Similarly, access to sanitation increased from 69% in 1990 to 91% in 2004.\(^3\) But overall coverage of piped water is still very low, at 30%; only 3% of the total population is connected to the sewerage system. The vast majority of urban residents rely on septic tanks or have no sanitation facilities. Even in Greater Colombo, only about 60% of the population is connected to piped water and only 50% has a continuous supply. In provincial urban areas, coverage is in the range of 5%–20%, with an intermittent supply of water for about 16 hours a day. Consumers are forced to construct facilities to store water during off-peak hours; low-income consumers cannot afford to do so.

2. Colombo water supply. About 95% of Colombo,\(^4\) the capital city and economic and administrative hub of the country, has piped water supply. However, the system has low and fluctuating system pressure and intermittent supply; hence, some areas of the city receive water only during off-peak hours, and others receive water for an average of 6–10 hours. Many parts of the distribution network in the city were built 100 years ago.\(^5\) While various projects have addressed the increasing water demand in the city, significant rehabilitation of the network has not been carried out. As a result, nonrevenue water (NRW) has reached almost 49%.\(^6\) The National Water Supply and Drainage Board (NWSDB), under the Ministry of Water Supply and Drainage (MWSD), supplies piped water to 127,000 metered service connections in Colombo City.\(^7\) Additionally, about 3,200 standpipes are not yet metered in under-served settlements. The water tariff is currently below full cost recovery. NWSDB has launched various pilot programs to enhance water conservation through standpipes.\(^8\)

3. Colombo wastewater. In 2008, 66% of the Greater Colombo population had access to on-site sanitation facilities; 25% were connected to sewerage systems;\(^9\) and 9% had no facilities

\(^4\) The area under the Colombo Municipal Council has a population of about 700,000 on 37 square kilometers.
\(^5\) About 700 kilometers, of a total 927 km, of the water supply distribution network in Colombo City is more than 50 years old.
\(^6\) Colombo’s NRW of 49% (twice the average NRW for the rest of the country) comprises 33% physical losses, 5% commercial losses, and 11% free water supplied to low-income informal settlements.
\(^7\) As of December 2011.
\(^8\) NWSDB has formed and is metering about 500 consumer societies, out of about 4,000 standpipes in Colombo City, on a community participation basis and charges the minimum tariff (SLRS3.0/cubic meter).
\(^9\) Sewer coverage in Greater Colombo is 60%, but only 25% of the population is connected.
and disposed of wastewater on the seashore in canals and waterways, and on available open ground. Currently the various sewerage systems operating within Greater Colombo serve a total of 140,000 households.\textsuperscript{10} The existing sewer network, built between 1906 and 2007, comprises about 320 kilometers (km) of sewers; 18 pumping stations in two catchments, north and south; and two sea outfalls. The sewer lines have frequent collapses and blockages, and one-third of the pumping facilities are not working, causing frequent overflows into watercourses. The municipalities provide free septage removal.\textsuperscript{11} The Colombo Municipal Council (CMC) owns and operates the wastewater infrastructure services in Colombo City, and is the only municipal body handling this service in the country. NWSDB manages wastewater facilities outside the CMC area. It introduced a sewerage tariff within its operating jurisdiction\textsuperscript{12} and has a dedicated account for sewerage services. However, CMC’s sewerage operation is not separate from other operations and has no independent accounting. Besides property taxes, CMC does not have a separate wastewater charge. Expenditures are met out of allocations from its general budget.

4. **Institutional framework.** Central and local governments provide water supply and sanitation services. In 1974, the government established NWSDB, and several urban water supply and sanitation schemes operated by local authorities were transferred to it. NWSDB became the primary implementing agency for publicly financed projects in the sector. However, the government’s decentralization policy, supported by the 13th amendment to the Constitution in 1987, required NWSDB to return municipal services to local authorities and devolve its role in investment and operation of water supply and sanitation services to local authorities. With the exception of CMC, all local authorities have been reluctant to take over these responsibilities because of their limited institutional and financial capacity.

5. **Issues and constraints.** The core constraints on Greater Colombo’s water supply and sanitation are inadequate infrastructure and poor services. Water supply and wastewater facilities have exceeded their technical life and are therefore inefficient and unreliable. NWSDB continues to face difficult challenges in Greater Colombo with respect to increasing water demand and very high water loss. NWSDB’s efforts to reduce NRW remain inadequate and generally underfunded. Improving NRW would be the single-largest contributor to improving NWSDB performance and financial viability. The government acknowledges that the sanitation subsector has been neglected; of total investment in water and sanitation during the last 2 decades, less than 5% was for sanitation. The poor infrastructure and service delivery in the Colombo sewerage system also stems from an inadequate institutional framework and weak capacity of service providers. The roles of the two key institutions involved in wastewater management, NWSDB and CMC, are not well defined, and their ownership of assets is ambiguous.\textsuperscript{13} Assets owned by these institutions are not inventoried and no accurate database provides information on the condition of the assets. Customer databases, particularly of

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\textsuperscript{10} While 64,000 households in the CMC areas are currently registered as connected, frequently two or more households share a connection. Of these connections, 80% are domestic and 20% are nondomestic.

\textsuperscript{11} The services generally include septic tank emptying using vacuum tankers with discharge into the sewerage system (one of the pumping stations). The municipalities treat costs of such services as part of the property tax.

\textsuperscript{12} Cabinet approved the introduction of a sewerage charge in September 2002. Subsequently the NWSDB board approved a sewerage tariff policy and a specific tariff structure, which the minister of water supply and drainage also approved. A new sewerage tariff was gazetted in October 2007 and charging of the sewerage tariff started in March 2008. As part of the system computerization at NWSDB, the form of the water bill was modified and the sewerage charge was incorporated into the water bill.

\textsuperscript{13} Asset ownership was believed to rest with NWSDB, in accordance with the voluntary transfer order in 1996 under section 64(1) of the NWSDB Law. However, this turned out to be invalid in the absence of parliamentary approval. The attorney general issued a legal opinion in September 2007 that CMC was the legal owner of the sewerage assets within the CMC area, a determination that was acknowledged by the agencies concerned. NWSDB remains the asset owner and service provider outside Colombo.
wastewater customers, are inaccurate and not regularly updated. Frequent blockages in the system cause flooding in low-lying areas and the uncontrolled overflow has serious environment and public health implications. No institutionalized mechanism is in place to monitor operating performance or environmental compliance. CMC has no dedicated wastewater unit, separate accounting, or tariff for wastewater services; and lacks adequate capacity to manage the city wastewater services efficiently. Its human resource capabilities need to be improved, particularly in financial management and technical skills for managing infrastructure under their control. While NWSDB’s capacity is generally adequate, support remains necessary to implement its vision for the gradual devolution of operating, capital planning, commercial, and financial functions to the 11 regional support centers.

6. **Public–private partnership experience.** NWSDB has made several small-scale attempts to outsource its functions to the private sector, including feasibility studies, metering and billing, equipment supplies, construction management, leak detection, NRW management, and operation and maintenance; some of these attempts appear to have succeeded. Most notably, NWSDB undertook two pilot projects: (i) outsourcing meter reading and billing in South Colombo and Biyagama; and (ii) providing water supply to a low-income settlement in Halghahakumbura, using a community partnership model. NWSDB considers the former project relatively successful, and the latter a failed project because of the private contractor’s inability to collect the tariff.

2. **Government’s Sector Strategy**

7. **Development plan and framework.** The objectives of the country’s development plan and framework, Mahinda Chintana: Vision for a New Sri Lanka, 2010–2020, include (i) increase the population’s access to improved water supply, and achieve national standards for service and quality; and (ii) improve sanitation facilities, increase the population’s access to those facilities, and set high national standards for service and quality of water. The framework includes plans to increase the piped water supply in the country from the current 37% to 60% by 2020 and sewerage coverage from 2.5% to 7%.

8. **Policy and regulatory framework.** The National Drinking Water Policy and the National Policy on Sanitation, adopted by MWSD in 2010, are intended to provide guidance to NWSDB, provincial councils, local authorities, lending institutions, and organizations involved in delivering water supply and sanitation services. In 2003, Parliament authorized the formation of the Public Utilities Commission to regulate electricity, petroleum, and water tariffs. Although the NWSDB water bill has undergone several drafts and the NWSDB Act has been amended several times, water tariff regulation is still not in place under the Public Utilities Commission. In spite of the absence of an independent water regulatory framework, NWSDB has managed to increase tariffs to meet operating requirements, most recently in 2009. Further tariff increases are necessary for full cost recovery.

3. **ADB Sector Experience and Assistance Program**

9. **Lessons.** The Asian Development Bank (ADB) has been one of the major development partners in water supply and sanitation in Sri Lanka. Since 1986, it has provided eight project loans for a total of about $521 million. Lessons from ADB involvement include (i) accompany physical investments with capacity building and institutional strengthening; (ii) provide support to

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14 This contract was not extended because of a political decision taken at that time and for reasons arising from conflict of interest rather than lack of performance of the private contractor.
local authorities during and post transition to ensure sustainability of the water supply and sanitation schemes handed over; (iii) promote the improvement of self-financing performance through the implementation of sector reforms, cost recovery, and commercial discipline of service agencies; (iv) provide capacity development support that includes technical aspects of operation and maintenance, and planning and financial management; and (v) promote institutional arrangements that lead to broader participation, such as public awareness and capacity building of end users. These lessons were incorporated into the design of the investment program. The Japan International Cooperation Agency has been supporting NRW reduction measures in NWSDB and is helping it update the water supply master plan for the Western Central Regional Support Center, including Colombo City.

10. **Road map and investment program.** The road map and investment program for the multitranche financing facility (MFF) are guided by the government's policy framework and development priorities as outlined in the Development Policy Framework. To achieve the framework targets, NWSDB and CMC need to provide the population with (i) full coverage and a 24-hour water supply in Colombo City, and universal safe water supply in the Greater Colombo area; and (ii) universal sanitation coverage in the Greater Colombo area, with 100% coverage by public sewers in Colombo City. The investment program will support the government in achieving these targets for Greater Colombo. Supplementing the ongoing projects and expected funds from other development partners, such as the Japan International Cooperation Agency, the investment program will fund 100% of the remaining investment needs to achieve the piped water supply targets and 85% of the remaining investments needed to achieve the wastewater targets for Colombo City by 2020. In accordance with the government's policy framework, the road map sets a vision for (i) reducing and managing NRW holistically and sustainably; (ii) improving governance, management capacity, and accountability within NWSDB and CMC; and (iii) improving water and wastewater service delivery in Greater Colombo. Global best practice and proven approaches of NRW reduction will be used to reduce NRW to 20% in Colombo City and to 18% in critical areas by the end of the investment program. Wastewater will meet the discharge target set by the Central Environment Authority. The road map is to reduce NRW and meet the water supply target, followed by reaching the wastewater and sanitation target. The investment program will be phased: (i) $84 million for project 1 in 2012, (ii) $80 million for project 2 in 2013, (ii) $100 million for project 3 in 2015, and (iii) $36 million for project 4 in 2016. Projects 1 and 2 will focus on reducing NRW and improving water service efficiency in Colombo City, while projects 3 and 4 will include improvements in wastewater services and expand service coverage to other areas of Greater Colombo.

11. The investment program is consistent with the priority sector “water supply and other municipal infrastructure and services,” identified in the country partnership strategy, and the first tranche under the investment program is included in the country operations business plan for Sri Lanka.

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16 Details of the government’s investment plan are presented in schedule 1 of the framework financing agreement for the investment program.
17 The critical area of 12 square kilometers is north of Colombo City.
PROBLEM TREE
WATER SUPPLY AND OTHER MUNICIPAL INFRASTRUCTURE AND SERVICES

EFFECTS
- Unsustainable economic growth
- Inefficient utilization of water resources
- Affected households’ use of water

CORE PROBLEM
- Water supply and wastewater service are not adequate in Greater Colombo

CAUSES
- <Physical>
  - Huge losses in distribution system
  - Old water distribution system
  - Irregular maintenance of the system
  - Inadequate wastewater facilities
  - Inadequate and dilapidated wastewater facilities
  - No wastewater treatment plants

- <Nonphysical>
  - Low management and accountability for water supply
  - Limited corporate governance
  - Limited human resources
  - Lack of training
  - Low management capacity for wastewater
  - Limited human resources and lack of business experience and training
  - Lack of wastewater tariff

Interventions
- ADB Greater Colombo Wastewater Management Project ongoing
- JICA pilot NRW project ongoing
- Capacity building program supported by ADB, JICA
- Capacity building program supported by ADB.

## SECTOR RESULTS FRAMEWORK
### Water Supply and Sanitation Services, 2012–2020

<table>
<thead>
<tr>
<th>Country Sector Outcomes</th>
<th>Country Sector Output</th>
<th>ADB Sector Operations</th>
<th>Main Output Expected from ADB Interventions</th>
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<tr>
<td>Sector Outcomes with ADB Contribution</td>
<td>Indicators with Targets and Baselines</td>
<td>Sector Output with ADB Contribution</td>
<td>Indicators with Incremental Targets</td>
</tr>
<tr>
<td>Urban population has water supply and wastewater services and management</td>
<td>100% safe water coverage (baseline 85% in 2009)</td>
<td>Water supply and wastewater systems expanded, improved, and well managed</td>
<td>(i) 583 km of water supply pipes installed or upgraded by 2020</td>
</tr>
<tr>
<td>60% piped water supply coverage (baseline 37% in 2009)</td>
<td>(ii) Nonrevenue water reduced from 33% in 2010 to 20% in 2020</td>
<td>(i) NRW in Colombo City reduced to 20% by 2020</td>
<td>2012: GCWWMP (i)</td>
</tr>
<tr>
<td>7% sewerage coverage (baseline 2.5% in 2009)</td>
<td>(iii) NRW for Colombo City reduced to 20%, and in critical areas to 18% in 2020</td>
<td>(ii) 583 km of water supply pipes installed or upgraded by 2020</td>
<td>2013, 2015, 2016: Greater Colombo Water and Wastewater Management Improvement Investment Program ($300 million)</td>
</tr>
<tr>
<td>87% access to improved sanitation in 2015, and 100% in 2025 (baseline 86.5% in 2010)</td>
<td>(iv) 475 km of sewerage lines constructed or rehabilitated</td>
<td>(iii) 475 km of sewerage pipes installed or upgraded by 2020</td>
<td>2014: Environmentally Sustainable Urban Development Project (Secondary Towns $50 million)</td>
</tr>
<tr>
<td></td>
<td>(v) WSC-RC successfully operating as an autonomous utility (cost center) within NWSDB</td>
<td>(iv) 175,000 m³/d capacity wastewater treatment plants constructed and successfully operating by 2020</td>
<td>Ongoing projects</td>
</tr>
<tr>
<td></td>
<td>(vi) CMC’s wastewater unit successfully operating with separate financial management</td>
<td></td>
<td>Length of sewer mains and networks installed or improved: JWSSP 331 km; GCWM 25 km</td>
</tr>
<tr>
<td></td>
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<td>Number of new households connected to the sewer network: JWSSP 20,000</td>
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<td></td>
<td></td>
<td></td>
<td>Construction of low-cost latrines: STRCWSSP 60,000; JWSSP 20,000; DZUWSSP 2,000</td>
</tr>
</tbody>
</table>

**ADB** = Asian Development Bank, **CMC** = Colombo Municipal Council, **DZUWSSP** = Dry Zone Urban Water Supply and Sanitation Project, **GCWWMP** = Greater Colombo Wastewater Management Project, **JWSSP** = Jaffna Water Supply and Sanitation Project, m³/d = cubic meters per day, mlpd = million liters per day, NRW = nonrevenue water, **NWSDB** = National Water Supply and Drainage Board, **STRCWSSP** = Secondary Towns and Rural Community-Based Water Supply and Sanitation Project, **WSC-RC** = Western Central Regional Support Center.

Source: Asian Development Bank