SECTOR ASSESSMENT: WATER SUPPLY AND OTHER MUNICIPAL INFRASTRUCTURE 
AND SERVICES

Sector Road Map

1. **Sector Performance, Problems, and Opportunities**

1. **Urban water supply.** Bangladesh is rapidly becoming urbanized. The urban population grew at an annual 3.7% from 27.0% of the total population in 2005 to 34.0% in 2015. The country’s urban population thus expanded at more than three times the overall 1.1% national average.\(^1\) Although drinking water supply coverage was 87% in urban areas in 2015—identical to the overall national rate—only 32% of the urban population lived in households that had a piped water supply.\(^2\) This has been due to a lack of investment funds, often coupled with such systemic constraints as political control over the setting of water tariffs and poor operational and financial capacity of water supply services. These tariffs and the revenue they generate have remained too low to fund either investments to improve the water supply infrastructure or adequate repair and maintenance work on existing systems. The main sources of water supply in urban areas are tube wells. These have been sunk by private households, water utilities, and local governments and have been lowering local groundwater tables to a worrying degree in many towns, especially in larger industrial areas in and around the capital and largest city, Dhaka.

2. The operation and maintenance (O&M) of the existing water supply system is inadequate. This leads to high water losses from the supply network, or what is technically termed nonrevenue water. The required periodic maintenance is not done properly, which results in leaks and the early deterioration of pipes, wells, and machinery. Most of the connections in Dhaka and Chittagong have water meters, but connections in Khulna where ADB and Japan International Cooperation Agency (JICA) are supporting the development of a new surface water treatment system, have none. No water supply and sewerage authority in the country is able to provide water all day every day, particularly during the dry season when the problem is compounded by frequent power outages. Dhaka Water Supply and Sewerage Authority (DWASA) recovers a part of the investment cost and its full O&M costs through tariffs, but those in Chittagong and Khulna barely recover even the O&M costs.\(^3\) The government has not increased tariffs to the levels needed to cover costs by taking the socio-economic impacts into the consideration.

3. **Sanitation services.** The levels of basic sanitation coverage are high but decline when stringent standards of improved or hygienic sanitation are considered. Coverage in urban areas by improved sanitation facilities increased to 58% in 2015, compared with 61% countrywide. The rate of open defecation fell to 0% in 2015 (footnote 2) in urban areas resulting from part of a government campaign for sanitation that began in 2005 and wider availability of sanitation facilities. Conventional sewer systems are lacking in all urban areas. Coverage is greatest in Dhaka, where 25% of residents are served by a sewer network. The rest of the population uses such on-site options as septic tanks, pit latrines, and unhygienic latrines. Only one wastewater treatment plant exists in Dhaka and has a limited capacity. Most wastewater is discharged

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untreated directly into rivers. Although the sanitation coverage in urban centers is slightly better than before, systems in many high-density urban areas are restricted by a lack of space for developing sewerage treatment plants and networks. Sanitary conditions in the country’s urban slums are deplorable. Only 8%–12% of households have hygienic latrines (footnote 3). The open discharge of wastewater into drains and open fields and by roads and rivers creates a major environmental pollution problem and health hazards. Rapid urban growth requires that Bangladesh expand and improve sewerage service delivery.

4. **Current institutional setup for the water sector.** At the national level, the local government division (LGD) of the Ministry of Local Government, Rural Development, and Cooperatives is responsible for the overall development of the water supply and sanitation (WSS) sector. Large urban areas—Chittagong, Dhaka, Khulna, and Rajshahi—have water supply and sewerage authorities. Water supply in other urban areas is maintained by city corporations or municipalities, which are empowered to charge tariffs to meet the O&M costs of water supply. The Department of Public Health Engineering is responsible for the implementation of WSS projects in rural areas and providing technical support and guidance to municipalities. The union of water supply and sanitation committees, which includes community leaders and Department of Public Health Engineering representatives, is responsible for providing public education on hygiene, promoting environmental sanitation, and approving the development plan of tube wells. In addition to these government institutions, nongovernment organizations and the private sector play a part in water services. However, private sector participation so far has involved only the supply of hand pumps, pipes, and tube well materials.

2. **Government’s Sector Strategy**

5. In 2011, the government prepared a WSS sector development plan (SDP) for 2011–2025 with outlining strategic aims for the short, medium, and long terms. Government agencies do most of the overall planning, design, implementation, and management of WSS programs and projects with the supports of development partners.

6. Several earlier government policies and strategies relate directly and indirectly to WSS. A 1998 national policy for safe water supply and sanitation aimed to change existing WSS service delivery to a dynamic system through complex social, economic, technical, administrative, and management interventions. The government’s 1999 national water policy provided guidance to all agencies and institutions working directly or indirectly in the water sector to improve the country’s water resource management system. A 2004 national water management plan provided an operational framework for the central and local governments and other stakeholders to implement activities and projects in the sector at both local and central levels. A national policy and plan adopted in 2004 provided guidelines for implementing an arsenic mitigation program countrywide. A pro-poor WSS strategy approved in 2005 defined a basic minimum level of WSS service up to which the government should provide special support to the poor. The 2011–2025 SDP is the most ambitious and aims to make improved WSS services universal.

7. However, most previous policies and strategies were not implemented fully or properly. For example, the lowest levels of local government were supposed to carry out many parts of the pro-poor strategy, but they lacked the information and capacity required for the implementation. Poor interagency coordination has been an obstacle to development in the WSS sector. Although policies call for coordination between government, nongovernment organizations, and the public and private sectors, it does not exist in practice. Furthermore, the various WSS sector strategies both overlap in some cases and fail to cover important issues in
others. To try to address this issue, the LGD of the Ministry of Local Government, Rural Development, and Cooperatives formulate a national WSS strategy in 2014 in consultation with stakeholders. They called for all the previous existing strategies to be streamlined into a single approach to deal with all outstanding and emerging sector issues.

8. The government approved its seventh five-year plan in 2015. It covers 2016–2020 and aims to accelerate the country’s growth and empower its citizens. The plan aims to provide 100% access to WSS services in urban areas by 2020, half through piped water supply systems. The sector’s performance and governance need to improve to meet these targets. The government has intended to reform the sector to improve the financial sustainability and autonomy of urban water entities. A draft water supply and sanitation regulatory commission bill that was drafted with the support of ADB’s technical assistance is being finalized by the government.

3. ADB Sector Experience and Assistance Program

9. ADB is a major development partner of Bangladesh in WSS development and accorded the sector high priority in its country partnership strategy for the country. ADB has provided significant support for the development of urban infrastructure—especially for water supply, sanitation, and waste management—and this has benefitted the health of urban residents. ADB supported policy reform in the sector and the rehabilitation of the Dhaka water supply system. The program approved in 2007 aimed to rehabilitate and reinforce water supply systems and build the capacity of DWASA and optimize its operational and financial performance. A proposed ADB project would enhance these efficiency gains and build on the program’s achievements in reducing nonrevenue water and establishing uninterrupted water supply in the city.

10. ADB approved the Dhaka Environmentally Sustainable Water Supply Project in 2013 to develop a new surface water scheme to augment water sources and improve the water distribution network in the capital. Dhaka has been relying heavily on groundwater, but the rate at which this water is being abstracted is beyond sustainable levels. The project will help DWASA draw water from the Meghna River to assure that Dhaka has a reliable water supply. ADB also has provided technical assistance for institutional building and capacity enhancement in the WSS sector. ADB has helped the government establish a regulatory framework for setting urban area water tariffs through a transparent, predictable, and independent mechanism at rates that will ensure the long-term financial sustainability of water utilities. TA for strengthening the monitoring and enforcement of water quality in the Meghna River was approved by ADB in 2014 to help ensure water security in Dhaka. The TA complements the ongoing 2013 project.

11. Other development partners engaged in the WSS sector include the World Bank, which

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is helping DWASA improve storm water drainage and sustainable wastewater and water services for the people of Dhaka. Outside of the capital, the World Bank and the JICA are supporting the improvement of water supply systems in Chittagong, and ADB and the JICA are supporting the development of a new surface water treatment system in Khulna. ADB’s 2013 project was cofinanced by Agence Francaise de Developpement (AFD) and the European Investment Bank (EIB) (footnote 8). Danish International Development Assistance (Danida) assisted DWASA to develop the 225-million-liter-per-day Saidabad Water Treatment Plant II, which was inaugurated in 2012. AFD has conducted preparatory studies with Danida for supporting the development of DWASA’s third Saidabad plant, which will process 450 million liters per day. Two financial packages worth about $300 million were signed between Bangladesh and the People’s Republic of China in 2013 to set up a river water treatment plant near Dhaka to meet the city’s water demand.

12. The third phase of Danida’s support to the WSS sector include a component to provide funding to implement action plans deriving from the policy, institutional, and regulatory framework of the SDP. The policy support unit in the LGD plays a lead role in pilot testing, coordinating, and monitoring implementation of the SDP. Coordination among development partners will ensure comprehensive programming for the overall improvement of the WSS sector in Bangladesh.
Problem Tree for Water Supply and Other Municipal Infrastructure and Services

Deteriorating urban environment and inadequate infrastructure and services

- Insufficient capacity of urban infrastructure
  - Rapid increase in demand
  - Insufficient capital investment
  - Urbanization from migration
    - Climate change
    - Weak investment planning and prioritization

- Lack of proper operation and maintenance
  - Lack of trained staff

- Lack of proper policy, legal, and institutional framework
  - Lack of financial resources

- Weak capacity in central agencies and municipalities
  - Lack of skilled human resources
  - Limited delegation of power and resources
  - Lack of a framework and institutions for various urban infrastructure
  - Slow implementation of water sector reforms
  - Slow implementation of approved projects
## Sector Results Framework: Water Supply and Other Municipal Infrastructure and Services

<table>
<thead>
<tr>
<th>Outcomes with ADB Contributions</th>
<th>Indicators with Targets and Baselines</th>
<th>Country Sector Outputs</th>
<th>Indicators with Incremental Targets (Baselines Zero)</th>
<th>Planned and Outgoing ADB Interventions</th>
<th>Main Outputs Expected from ADB Interventions</th>
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<tbody>
<tr>
<td>More people enjoy improved water supply, sanitation services, and health care.</td>
<td>Portion of urban population using improved drinking water sources increased from 99.4% in 2013 to 100.0% in 2020</td>
<td>Water supply, sanitation, and other urban infrastructure in Dhaka, Khulna, and other municipalities expanded, improved, and well managed</td>
<td>Coverage in Khulna increased by 40 percentage points by 2020</td>
<td>(i) Planned Key Activity Areas</td>
<td>Urban governance and infrastructure improved in municipalities</td>
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<td>Portion of urban population using improved sanitary facilities increased from 59.7% in 2013 to 100.0% in 2020</td>
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<td>Nonrevenue water reduced to 20% or less in Dhaka</td>
<td>(ii) Projects in the Pipeline</td>
<td>Water supply system improved with better management system in two megacities</td>
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<td>Contraceptive prevalence rate in urban areas increased from 65.9% in 2014 to 80% in 2021</td>
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<td>50 additional municipalities improving urban infrastructure and governance with better planning by 2020</td>
<td>(iii) Ongoing Projects with Approved Amounts</td>
<td>Urban public health services improved</td>
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<td>Dhaka Water Supply Sector Development Program ($200 million)</td>
<td>(i) Planned Key Activity Areas</td>
<td>Key infrastructure improved</td>
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<td>Second Urban Primary Health Care ($70 million)</td>
<td>(ii) Projects</td>
<td>Additional municipalities covered for improvement of governance and infrastructure</td>
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<td>Urban Public and Environmental Health Sector Development ($120 million)</td>
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<td>Expanded primary health care through public–private partnership</td>
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<td>Khulna Water Supply ($75 million)</td>
<td>(iii) Ongoing Projects</td>
<td>Water supply system with installed capacity of 500 MLD in Dhaka and 160 MLD in Khulna developed</td>
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<td>Third UGIIP ($125 million)</td>
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<td>2,000 kilometers of distribution network rehabilitated in Dhaka, and 750 kilometers of distribution network installed or rehabilitated in Khulna</td>
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<td>Sustainable Urban Primary Health Care Sector Development Program ($40 million)</td>
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<td>50 municipalities implementing governance and infrastructure improvement program</td>
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<td>Dhaka Environmentally Sustainable Water Supply ($250 million)</td>
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<td>Environmental health improved through better water supply, sanitation, and solid waste management in targeted cities and municipalities</td>
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<td>Greater Dhaka Sustainable Urban Transport Corridor ($145 million)</td>
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<td>Coastal Towns Environmental Infrastructure ($94 million)</td>
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<td>City Region Development ($120 million)</td>
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**Source:** Asian Development Bank.

**Notes:**
- ADB = Asian Development Bank, MFF = multitranche financing facility, MLD = million liters per day, TA = technical assistance, UGIIP = Urban Governance and Infrastructure Improvement Project.