

SECTOR ASSESSMENT (SUMMARY): WATER AND OTHER URBAN INFRASTRUCTURE AND SERVICES¹

A. Sector Road Map

1. Sector Performance, Problems, and Opportunities

1. **Population and migration.** Yangon is the largest city and main economic hub of Myanmar and the capital of the Yangon Region. Yangon City's population of about 5.2 million represents about 10% of the national population and 35% of the urban population, while its contribution to gross domestic product is about 23%. Yangon City's population grew 2.20% annually between 2014 and 2019, more than three times faster than the country's total annual population growth of 0.67% in the same period.² The Strategic Urban Development Plan (SUDP) for the Yangon Region expects that rate of growth to continue until 2040.³ There is also a transient population of about 400,000 living in and around the city's largest industrial areas.⁴

2. Rural–urban migration is a relatively new phenomenon in Myanmar, but it is expected to result in major demographic shifts during 2020–2029. From 2010 to 2014, internal migration accounted for 81% of the growth of Yangon City's population. Landlessness among rural households and shrinking rural employment opportunities are the push factors behind the population shift to the cities in search of economic opportunities and better living standards.⁵ The 2014 census showed that young women comprise 53% of these migrants. The shift of labor force composition because of an increasing demand for workers in the manufacturing sector is also a driver of urbanization.

3. **Sector Performance.** The Asian Development Bank (ADB) prepared an analysis of the urban sector in 2017.⁶ The problem tree from this study was updated and is shown on page 6. Improvements have been made, but Yangon's inexperienced and ill-equipped institutions are still struggling to tackle the urban problems identified. Chronic underinvestment in urban infrastructure, including water supply, sanitation, drainage, wastewater, and solid waste, and lack of management have resulted in seriously deficient urban services throughout Myanmar. In particular, urban services in large peri-urban settlement areas in Mandalay and Yangon are far below acceptable levels, and the situation is worse still in the poor regions and states of the country.

4. Urban water supply systems in Myanmar are generally very old, providing only intermittent supply of poor-quality water. The Yangon water supply system, operated by the Yangon City Development Committee (YCDC), provides piped water to about 35% of the urban population.⁷

¹ This summary is based on ADB. 2017. *Urban Development and Water Sector Assessment, Strategy, and Road Map: Myanmar*. Manila., and City development Initiative Asia. 2019. *Yangon Urban Improvement Project TA-8556 REG, Final Report*. Manila. {Available on request.}

² United Nations. 2019. *World Population Prospects*. New York.

³ Yangon City Development Committee and Japan International Cooperation Agency. 2014. *A Strategic Urban Development Plan of Greater Yangon*. Yangon.

⁴ Danish Institute for International Studies. 2017. *Migration and Security Challenges in Yangon's Informal Settlements: The Case of Hlaing Thayar Township*. Copenhagen.

⁵ United Nations Human Settlements Programme (UN-Habitat), UN Environment Program and Ministry of Natural Resources and Environmental Conservation. 2016. *Myanmar Climate Change Alliance*. Nay Pyi Taw.

⁶ ADB. 2017. *Urban Development and Water Sector Assessment, Strategy, and Road Map: Myanmar*. Manila.

⁷ Government of Myanmar, Ministry of Labor, Immigration and Population. 2015. *The 2014 Myanmar Population and Housing Census*. Nay Pyi Taw.

This means that 65% of the population must obtain their water privately from wells or suppliers. Frequent supply interruption is a problem widely reported by households connected to the system.

5. The YCDC supplies about 932 million liters of water per day (MLD), and only about 60% of the water distributed to its customers is treated. About 90% of the water comes from surface water sources and 10% is from groundwater resources. Surface water originates from reservoirs that have been built over the years, at increasing distances from the city center. Losses in the YCDC's water distribution system are reported to be at least 60%. Furthermore, a 36.3 kilometer section of the water transfer system, between Ngamoeyeik reservoir and Nyaungnhapin water treatment plant, is very vulnerable, including from contamination, as the water is transferred via an open canal.

6. The extent of nonrevenue water (NRW) is uncertain because of poor record-keeping and partial metering. About 70% of the 230,000 recorded connections have meters. Current estimates range from 40% to 60%. Yangon's high level of NRW reflects high levels of leakage caused by lack of maintenance of the aging water supply network. Unauthorized connections also contribute to the network's NRW.

7. Water tariffs in Yangon City are insufficient to cover operational costs. The YCDC subsidizes the water account from their general budget. This subsidy equated to about 40% of the water account's income in the 2018–2019 fiscal year. The tariff for metered water is MK88 per cubic meter (about \$0.05) for domestic users and MK110 per cubic meter (about \$0.07) for commercial users. These rates are significantly lower than tariffs in other major urban centers in Southeast Asia.⁸ The Yangon City Municipal Law gives the YCDC the authority to increase the tariff, subject to approval by the Yangon Region Government (YRG).

8. The YCDC is responsible for urban infrastructure management and the delivery of urban services in 33 townships within the city's boundary. The YCDC is introducing significant changes in its bylaws, rules, and regulations following the enactment of the Yangon City Municipal Law in June 2018, including restructuring of the division responsible for water supply. Previously, the Engineering Department, Water and Sanitation (EDWS) managed water and sanitation, but sanitation has been moved to another division—the Drainage and Wastewater Management Authority—and the EDWS became the Water Resources and Water Supply Authority in October 2019.

9. Although the YCDC has received institutional capacity development support from development partners notably from the Japan International Cooperation Agency (JICA), significant weaknesses in operational, financial, and administrative procedures remain. In particular, asset management, monitoring, information technology, financial management, and resource management need to be significantly improved.

2. Government's Sector Strategy

10. With JICA support, the YCDC developed the SUDP, which the Parliament (*Hluttaw*) of Yangon Region approved in June 2015 (footnote 3). The SUDP was updated in 2018.⁹ The SUDP presents the vision of the future structure of Yangon, including urban subcenters, greenbelts, and new towns. Given the current weakness of the planning system, realizing the plan by controlling

⁸ For example, tariffs per cubic meter are \$0.27 in Bangkok, \$0.28 in Ho Chi Minh City, \$0.49 in Jakarta, \$0.19 in Kuala Lumpur, and \$0.42–\$0.57 in Manila according to the water authorities' websites.

⁹ JICA, YCDC, and YRG. 2018. *The Updated Strategic Urban Development Plan of the Greater Yangon*. Yangon.

development and enforcing planning rules looks challenging. Since the SUDP's publication, a proposal to create a "New Yangon City" to the southwest of the urban area has gained momentum through the establishment of a public–private entity to plan and manage its development. The SUDP and the New Yangon City Project prioritize urban expansion rather than consolidation and improvement of the existing urban area.

11. Equitable access to water and sanitation is a key component of the Myanmar National Sustainable Development Plan.¹⁰ The action plan under Strategy 5.3 of the plan includes the development of additional water resources, better management of water supply, and improved sanitation.

12. With JICA's support, water supply and wastewater master plans have been prepared and implementation has commenced on some aspects.¹¹ As identified in the SUDP, the YCDC proposes to (i) develop water resources and water treatment capacity; (ii) establish effective transmission and distribution systems; (iii) improve water quality; (iv) reduce water losses; (v) improve billing and collection; and (vi) improve institutional and organizational capacity, and enhance human resources.

B. Major Development Partners: Strategic Foci and Key Activities

13. Development partners active in Yangon City include Agence Française de Développement (AFD), the Department for International Development of the United Kingdom, JICA, the Korea Export–Import Bank, the Government of the Netherlands, the United Nations Human Settlements Programme (UN-Habitat), and the World Bank.

14. JICA has been providing most of the support in the water supply and sanitation sector in Yangon City. It developed the SUDP for Greater Yangon and is implementing two water supply improvement projects in the region. AFD, JICA, and the private sector are supporting NRW reduction efforts. Manila Water Company, Inc., a private sector water utility from the Philippines, and Mitsubishi corporation of Japan have supported the YCDC with an NRW management pilot project in two Yangon townships—Insein and South Okkalapa. The YCDC is also looking to increase private sector involvement in water supply development including NRW reduction. Ongoing and proposed water supply and sanitation projects in Yangon are shown in the table.

15. In addition to ongoing technical support within the Water Resources and Water Supply Authority, JICA is supporting the development of new water sources at Lagunpyin reservoir and Kokkowa River. JICA is also financing the rehabilitation of a sewerage system and sewage treatment plant in the central business district.

16. AFD has confirmed its interest to support a project focusing on water supply from the Hlawga reservoir. It was agreed that the YCDC would request a project preparation grant from the AFD–European Union-funded window of the Cities Development Initiative for Asia with the support of AFD and endorsement of the YRG.

17. The Department for International Development of the United Kingdom is supporting urban infrastructure improvement technical assistance grant projects, including the rehabilitation of industrial zones and the New Yangon City Project. The Government of the Netherlands is

¹⁰ Government of Myanmar, Ministry of Planning and Finance. 2018. *Myanmar Sustainable Development Plan (2018–2030)*. Nay Pyi Taw.

¹¹ JICA. 2014. *The Improvement of Water Supply, Sewerage and Drainage System in Yangon City in the Republic of the Union of Myanmar*. Yangon.

supporting an integrated Ayeyarwady Delta strategy and a regional water security study. The World Bank is implementing a project to reduce the impact of flooding and improve the earthquake resilience of selected public facilities in Yangon.

18. Infrastructure is a priority sector of ADB's country partnership strategy for Myanmar, 2017–2021.¹² Within the water supply and sanitation sector, ADB will support the rehabilitation and development of key urban infrastructure and services (including water supply, wastewater, solid waste, urban flood protection, and urban transport) that are essential to address sprawling urbanization and provide basic municipal services. The country partnership strategy also proposes to mainstream environment, climate change, disaster risk reduction, and urban resilience into the program.

Major Development Partners

Development Partner	Project Name	Duration	Amount (\$ million)
Water Supply and Sanitation			
JICA	Yangon Water Supply Management Improvement Project	2013–2015	17.77 (Grant)
JICA	Greater Yangon Water Supply Improvement Project Phase 1	2015–2019	222 (Loan)
JICA	Greater Yangon Water Supply Improvement Project Phase 2	2019–2023	630 (Loan)
ADB	Yangon City Water Resilience Project	2019–2023	180 (Loan)
JICA	Yangon Sewerage System Development Project	2019–2024	653 (Loan)
AFD	Nonrevenue water reduction for Tamwe and Thingangyun Townships	2017-2019	1.42 (Grant)
JICA	Nonrevenue water reduction for Mayangone and Yankin townships	2014-2015	17.42 (Grant)
Manila Water–Mitsubishi	Nonrevenue water reduction for Insein and South Okkalapa Townships	2014-2016	1.00 (Grant)

ADB = Asian Development Bank, AFD = Agence Française de Développement, JICA = Japan International Cooperation Agency

Sources: Yangon City Development Committee. 2019. *YCDC Financial and Official Development Assistance Data*. Yangon; and Nikkei Asia Review. 2014. *Mitsubishi helping Myanmar fix waterworks in privatization bet*. Tokyo. <https://asia.nikkei.com/Business/Mitsubishi-helping-Myanmar-fix-waterworks-in-privatization-bet>.

C. Institutional Arrangements and Processes for Development Coordination

19. ADB coordinates closely with other development partners through the Urban Development Workstream under the Cooperation Partners Group mechanism at the national level. Through the workstream, the development partners formally share and coordinate ongoing and proposed urban development activities with each other and with the government (particularly with the YRG for projects in the Yangon Region). The YRG and the YCDC organize regular meetings with development partners in Yangon City to discuss and coordinate urban development projects. The proposed project has been discussed during workstream meetings and at bilateral meetings with AFD, JICA, and the World Bank.

20. ADB's project preparation team have worked closely with AFD to coordinate the downstream network design and implementation between the Ngamoeyeik and Hlawga water

¹² ADB. 2017. *Country Partnership Strategy: Myanmar, 2017–2021—Building the Foundations for Inclusive Growth*. Manila.

supply systems. ADB will continue to coordinate closely with JICA, the Government of the Netherlands, UN-Habitat, the World Bank, and other development partners to ensure complementary support to Yangon Region.

D. ADB Experience and Assistance Program

21. ADB assisted the YCDC in the twinning of urban water utility operators in the region in 2011.¹³ ADB is implementing the Mandalay Urban Service Improvement Project,¹⁴ a water supply and wastewater treatment project cofinanced by AFD; and the Third Greater Mekong Subregion Corridor Towns Development Project on urban infrastructure improvements including water supply in the cities of Mawlamyaing in Mon State and Hpa-An in Kayin State.¹⁵ ADB has also provided technical assistance and grant projects for urban infrastructure service improvements in Yangon City.

22. The project aligns with Yangon City's future development goals and service-level needs and, learning from experience, it has been designed to build ownership and deliver practical outcomes. The project is expected to act as a catalyst for further investment projects in Yangon City, leveraging ADB's comparative strength in the urban water sector in the country and potentially partnering with agencies such as AFD, JICA, and the World Bank.

¹³ ADB 2011. *Technical Assistance for Supporting Water Operators' Partnerships in Asia and the Pacific*. Manila.

¹⁴ ADB 2015. *Report and Recommendation of the President to the Board of Directors: Proposed Loan and Administration of Grant to the Republic of the Union of Myanmar for the Mandalay Urban Services Improvement Project*. Manila.

¹⁵ ADB 2018. *Report and Recommendation of the President to the Board of Directors: Proposed Loan to the Republic of the Union of Myanmar for the Third Greater Mekong Subregion Corridor Towns Development Project*. Manila.

PROBLEM TREE FOR WATER AND OTHER URBAN INFRASTRUCTURE AND SERVICES

