

USAID Water and Development Country Plan for Lebanon

I. Executive Summary

Despite relatively abundant natural water resources, Lebanon faces a significant water deficit exacerbated by population growth, random urban expansion, climate change, and influx of Syrian refugees. A history of regional conflict and limited attention to institutional capacity further complicates the situation of the water sector. Thus, USAID and other donors are providing technical services and related resources to the country's water establishments to respond to these challenges. Through the five-year, Lebanon Water Project (LWP) USAID/Lebanon is advancing the objectives of the USAID Agency-specific Plan under the Global Water Strategy (GWS) to meet challenges in the water sector, primarily improving access to safe drinking water, improved wastewater management, and efficient irrigation by supporting Lebanon's five public water utilities: four Water Establishments (WEs), and the Litani River Authority (LRA). USAID also engages with local communities, municipalities, civil society, and the local private sector as key partners for addressing water sector concerns.

The current LWP and future USAID/Lebanon interventions are expected to result in reliable and sustainable access to potable water and wastewater for Lebanese citizens; improve water, wastewater, and irrigation management practices; enhance the efficiency and sustainability of the public water utilities; and respond to water and wastewater issues arising from the influx of Syrian refugees. Furthermore, USAID investments will promote better water and sanitation governance and institutional strengthening as a means to long-term water security, in line with the GWS.

II. Introduction

Even though Lebanon enjoys relatively abundant rainfall and natural water resources, the country suffers from unsustainable water use practices, poor wastewater management, and water treatment problems that collectively reduce the availability of potable water. Much of the country's infrastructure remains outdated and vastly inadequate to provide reliable service delivery. Poor conservation practices, a lack of institutional capacity, an inadequate legal and regulatory framework governing water usage, an inadequate enforcement of regulations, and pollution of water sources are some of the major obstacles facing the water sector.

III. Government of Lebanon (GOL) Water Objectives

GOL goals are not related to access. They are rather performance-related goals, like non-revenue water (NRW) reduction and increased water supply. Water sector reforms are a national priority as highlighted in the National Water Sector Strategy (NWSS) of 2012. The overall goal of the NWSS is "to ensure water supply, irrigation, and sanitation services throughout Lebanon on a continuous basis and at optimal service levels, with a commitment to environmental, economic and social sustainability."^{1,2}

¹ World Bank. 2012. Lebanon-Country water sector assistance strategy (2012-2016). Washington, DC: World Bank.

² NWSS, MoEW, GoL (2012)

Lebanon is on the threshold of water scarcity, with surface water heavily exploited and groundwater already in overdraft. Lebanon has a slightly higher rate of household connections (79 percent) than the average for the Middle East North Africa (MENA) Region (75 percent), but trails behind many countries of the region, including Egypt and Algeria (80 percent), Morocco (90 percent). Total unaccounted for water is 48 percent (above the already high MENA average of 37 percent). Households spend three times as much in sourcing water from private suppliers as they pay for network water. Water supply service is provided on average for only nine hours per day, but is as low as three hours per day in some locations. Lebanon's wastewater network covers 60 percent of the country, while only 8 percent of wastewater produced is properly treated, with untreated effluents causing severe pollution to heavily exploited ground and surface water resources. The agriculture sector is the biggest consumer of water, estimated at 70 percent of the total water supply, exacerbated by inefficient irrigation practices, lack of know-how and guidance to farmers, and outdated technologies. This is causing significant wastage and contributing to pollution of water resources.

IV. Government of Lebanon's Current and Planned Strategies and Approaches to Water and Sanitation

Along with the NWSS of 2012, the GOL launched the National Roadmap to Combat Pollution in Qaraoun Lake and the Litani Basin (the "Litani Roadmap"). This roadmap calls for a holistic, integrated, and inclusive approach to address Litani Basin challenges through the collaboration of multiple GOL ministries, offices, and municipalities. The objective is to combat pollution of the Litani River by analyzing and limiting the sources of pollution, and developing remediation projects to clean the water flowing into the river and ultimately into Qaraoun Lake. To achieve this, the roadmap focuses on governance, solid waste disposal, collection and treatment of domestic and industrial wastewater, and reduction of agricultural runoff.³

The GOL, through USAID and other donor programs, is focusing on targeted investment and capacity building to accompany step-by-step implementation of a sequenced set of priority reforms. These reforms are designed to have a transformational impact on service delivery and on growth, poverty reduction, and sustainability. Supporting reforms and investment within the NWSS is a priority because of the high economic, social, and political costs of current unsatisfactory performance. Improved water service delivery will help reduce poverty and inequity, and contribute to gross domestic product, exports, and employment growth; is providing technical services and related resources (such as equipment and limited infrastructure) to the country's water establishments to build staff capacity; increase managerial, administrative, technical, financial, and operational efficiencies; improve the quality of water and wastewater services; expand access to water and sanitation; and advance capital investment planning and asset management.

The water sector in Lebanon is supported by a number of donors and development agencies focused on capital investments and technical assistance. Some of the most significant actors and their investments include:

³ Litani River Roadmap. Litani River Committee. (2012).

- The World Bank has invested \$600 million in the water sector in Lebanon through the installation of 134 km of water distribution and wastewater collection networks and rehabilitation of 194 km of water supply networks across the Bekaa region, where the influx of Syrian refugees has significantly impacted host communities. World Bank investments have also been made through the Greater Beirut Water Supply project (\$200 million loan) and the Lebanon Water Supply Augmentation project (\$474 million loan), which is in collaboration with the Islamic Development Bank (\$128 million) and the GOL (\$15 million).
- The European Investment Bank contributed to the Greater Beirut Wastewater project (60 million euro subsidized loan) and the Keserwan Water and Wastewater project (150 million euro loan and investment grant).
- The Government of Italy is providing soft loans (80 million euros in total) for wastewater treatment plants, sewage networks, water distribution networks, technical assistance, and training in Zahle, Jbeil Caza, Michmich, Hrajel, and Danniyeh.

V. Challenges and Opportunities in the Sector

Despite relatively abundant rainfall and natural water resources, Lebanon faces an annual 283 million m³ water deficit in 2017 expected to increase to 410 million m³ by 2025 if no major action is taken.⁴ The water deficit will only be exacerbated in the upcoming years by further population growth, random urban expansion, unsustainable usage, climate change, and the influx of Syrian refugees. A history of war and civil unrest has resulted in the Ministry of Energy and Water (MoEW) and water utilities assuming a reactive role: focusing primarily on potable water supply, with virtually no attention to wastewater and irrigation, or building sustainable water supplies. As such, serious challenges face the water sector, including outdated and insufficient infrastructure, poorly managed water utilities, high rates of NRW, limited water storage, poor irrigation efficiency, and pressures on ground and surface water supplies.

The lack of sufficient infrastructure for water storage, rain harvesting, and water reuse is contributing to an overall deficient water supply even while demand continues to grow. The greatest consumer of water is irrigation, which suffers from low efficiencies and old technologies, causing significant wastage and contributing to pollution of water resources.

Water utilities usually operate in financial deficit due to the very low percentage of customer-metered connections (approximately 10 percent nationwide), the low percentage of billing and collection (as low as 30 percent in certain regions), the high NRW (estimated at 50 percent nationwide), and the lack of a proper tariff strategy.

Management challenges within the water sector are complicated and multifaceted. These challenges include inadequate institutional capacity in several of the WEs and poor coordination among national, regional, and municipal entities. The MoEW, together with the four WEs and the LRA, are legally mandated to manage the water sector. At the same time, due to their inability to provide reliable services, other bodies such as local water committees or municipalities are

⁴ Figure based on the Lebanon National Water Sector Strategy (NWSS) 2012.

assuming their roles. Coordination among these government bodies is weak and must be greatly strengthened if water management and planning are to be carried out effectively.

Gaps in the legal and regulatory framework, the absence of sincere political will for water sector reform, the high percentage of NRW, and the lack of awareness and sense of stewardship at the citizen level—combined with the above infrastructure and management challenges—have trapped the water sector in a vicious cycle. Citizens who have lost faith in the capacity of the water utilities and local municipalities to provide proper services are reluctant to pay their water bills. In turn, the water utilities have become lenient with regard to law enforcement, are accustomed to fiscal deficits, are dependent on central government subsidies, coordinate poorly with local municipalities and, in general, are unable to improve their services. As a result, citizens resort to their own means of securing potable water and disposing of wastewater. This chaotic and irregular provision of water services and dysfunction of the water sector results in further depletion and pollution of natural resources, and fosters the unregulated and costly delivery of water by private business.

The influx of Syrian refugees into Lebanon has further exacerbated the water sector challenges. The World Bank's 2013 Economic and Social Impact Assessment estimated that population increase by refugees (nearly 30 percent of the resident population) has created an additional water demand of 26.1 million m³ per year (equivalent to 7 percent of the precrisis demand).⁵

VI. USAID/Lebanon Country Plan for Water

Currently, all bilateral USAID support advancing sustainable SO1 (IR 1.1), SO2 (IR2.2), SO3 (IR3.2), SO4 (IR 4.2 and IR4.3) of the GWS is through LWP. The LWP intends to achieve three primary objectives, which map to three primary components described in more detail in the following:

1. Improve service delivery and resource management capacity by the five public water utilities that are mandated by law to provide water, wastewater, and irrigation management services in Lebanon—four WEs and the LRA—and by local municipalities where feasible and appropriate
2. Improve civic engagement in water supply, irrigation, and wastewater management and increase the perception that utilities are providing citizens with a necessary and valuable service
3. Improve private sector involvement in water supply, wastewater, and irrigation management

Implementation of these interventions will benefit Lebanese citizens, host communities, the GOL water entities, and the environment through sustainable water usage.

Component 1: Improved water service delivery

⁵ World Bank. 2013. Lebanon - Economic and social impact assessment of the Syrian conflict. Washington DC; World Bank.

USAID coordinates with the MoEW to build the capacity of the five public water utilities: the four WEs and the LRA. The LWP will strengthen the managerial and operational functions of the water utilities, while also making the necessary upgrades to infrastructure to ensure improved water and sanitation service delivery. The LWP will support the GOL's newly developed water strategy that boosts the role of these public utilities as the legitimate entities that should provide efficient services to the population. Depending on refugee-related pressures in particular areas, specific attention may be paid to coping with this added burden on water resources. To be responsive to the fluid political and security environment in Lebanon, infrastructure activities will be small to medium scale with moderate capital and human resource requirements. Efforts will also include promoting innovative solutions for water conservation as well as exploring low cost and innovative wastewater treatment solutions.

In addition to enhancing the water management capacity of public utilities, the LWP will address water management at the sub-national level through support to municipalities and the Litani Roadmap Committee. The experience of USAID in this sector over the past decade reveals that local communities are capable of playing a strong complementary role in water management.

Component 2: Public outreach and civic advocacy

Reform at the policy and regulatory level remains an essential factor for the proper development of the water sector in Lebanon. Due to an absence of political will in this regard, the LWP will adopt a bottom-up approach through strengthening the role of civil society in applying the necessary pressure on decisionmakers to carry out essential reforms in the water sector. The LWP will increase water users' awareness and sense of ownership, in order to enhance their water use behaviors, increase awareness of their responsibilities vis-à-vis water service providers, and promote their roles and responsibilities with regard to protection of the environment.

Component 3: Private sector engagement and water sector financing

The LWP will explore the potential for public-private and business-to-business partnerships to develop and fund innovative water conservation and wastewater treatment technologies. USAID's public-private partnerships, where active private entities are identified as willing to promote proper water governance, leverage market-based solutions to advance broader development objectives. The success of public-private and business-to-business partnerships will largely depend on a positive enabling environment such as the public's acceptance of economically based tariffs and a regulatory environment that encourages private sector participation in the water sector.

Expected results: The current LWP and future USAID/Lebanon interventions are expected to result in reliable and sustainable access to potable water and wastewater for more than 800,000 Lebanese citizens; improve water, wastewater, and irrigation management practices; enhance the efficiency and sustainability of the public water utilities; and respond to water and wastewater issues arising from the influx of Syrian refugees. The results reported reflect targets at the time of this document's production, however, targets may be updated on an annual basis.

VII. USAID Budget and Mechanisms

The USAID LWP (FY 2015–FY 2020) provides architecture and engineering services. It is implemented by DAI Global through a task order under the USAID/Washington WADI IDIQ. The LWP’s funding heavily targets areas needing improved water services and especially those host communities most severely impacted by the influx of Syrian refugees. Subject to receipt of the planned FY 2018 budget in FY 2019, USAID/Lebanon plans to allocate further funding for water and wastewater services related to community local development that will be complementary to LWP.

In addition, Lebanon is benefitting from regional programs supported directly by USAID/Washington. Together with the Department of Interior, U.S. Geological Survey (USGS), USAID is supporting Lebanon to rapidly identify high potential sites for aquifer recharge through the Acceleration of Aquifer Storage and Recovery Program. This activity started in September 2016 and is ongoing for a three-year period.

The Lebanon Country Plan is costed based on prior year resources still available for programming, the FY 2017 estimated allocation of \$23.0 million, and the FY 2018 President’s Budget Request of \$18.4 million.