



Project Information Document (PID)

Appraisal Stage | Date Prepared/Updated: 14-Apr-2020 | Report No: PIDA28045



BASIC INFORMATION

A. Basic Project Data

| | | | |
|--|---|---|-------------------------------|
| Country West Bank and Gaza | Project ID P172578 | Project Name Gaza Wastewater Management Sustainability (WMS) Project | Parent Project ID (if any) |
| Region MIDDLE EAST AND NORTH AFRICA | Estimated Appraisal Date 30-Mar-2020 | Estimated Board Date 10-Jun-2020 | Practice Area (Lead) Water |
| Financing Instrument Investment Project Financing | Borrower(s) Palestinian Ministry of Finance and Planning | Implementing Agency Palestinian Water Authority | |

Proposed Development Objective(s)

The Project Development Objective (PDO) is to: (i) support the continuation of wastewater treatment services in North Gaza; and (ii) strengthen the capacity of the water institutions to efficiently manage wastewater services.

Components

- Component 1: Support the continued operation of the NGWMF
- Component 2: Rehabilitation and upgrade of the NGWMF to improve efficiency, build resiliency and address emergencies
- Component 3: Capacity building for sustainability of wastewater services in northern Gaza
- Component 4: Project management and implementation support
- Component 5: Contingency Emergency Response Component

The processing of this project is applying the policy requirements exceptions for situations of urgent need of assistance or capacity constraints that are outlined in OP 10.00, paragraph 12.

Yes

PROJECT FINANCING DATA (US\$, Millions)

SUMMARY

| | |
|---------------------------|-------|
| Total Project Cost | 13.70 |
| Total Financing | 13.70 |
| of which IBRD/IDA | 0.00 |



| | |
|----------------------|------|
| Financing Gap | 0.00 |
|----------------------|------|

DETAILS

Non-World Bank Group Financing

| | |
|---|-------|
| Trust Funds | 13.70 |
| Partnership for Infrastructure Development MDTF | 3.70 |
| Special Financing | 10.00 |

Environmental and Social Risk Classification

Substantial

Decision

The review did authorize the team to appraise and negotiate

B. Introduction and Context

Country Context

1. **The West Bank and Gaza (WB&G) are suffering from political instability and deteriorating economic conditions.** Real Gross Domestic Product (GDP) contracted in the two consecutive quarters of 2019, first by 2.5 percent in the first quarter of the year compared to the previous quarter, then by an additional 2 percent in the second quarter of 2019 compared to the previous one (preliminary data from the Palestine Central Bureau of Statistics (PCBS). Large inflows of donor support had driven a consumption-led growth. However, inflows of transfers have significantly dropped in recent years. The trade and movement restrictions have created a high risk of disruption in projects or trade and have kept investment levels low, resulting in a bias towards non-traded services which have less potential for productivity growth. A significant decline in public revenue receipts was witnessed in the first half of 2019 creating severe fiscal shocks.¹ The drop in public revenue forced the Palestinian Authority (PA) to adopt an emergency cash management plan in the first half of 2019 which has led to accumulation of debt from domestic banks, and build up arrears with employees, suppliers and the public pension fund, creating large liquidity challenges for the economy. Poverty rates have increased during 2011-17, with nearly one in three persons living in poverty, which is reflected on a growing welfare divergence between the West Bank and Gaza. Data from PCBS show that the overall share of population below the national poverty line has increased from 26 percent in 2011 to 29 percent in 2017. During the same period, the poverty rate in the West Bank declined from 18 to 14 percent, while poverty in Gaza increased dramatically from 39 to 53 percent leaving every second Gazan below the national poverty line. While it is too early to assess the

¹ The economy has faced severe fiscal shocks in the past years because of the standoff on the transfer of clearance revenues. Israel has withheld revenues it collects on behalf of the Palestinian Authority, particularly from indirect imports from third countries.



potential impact of COVID-19, it could have a negative impact on the Palestinian economy and decline in public revenues.

2. **Gaza's financial resiliency is almost depleted as donor's contribution has declined considerably leading to a near collapse of humanitarian conditions.** The Gaza economy fell into a deep recession in 2018, contracting by 7 percent year-on-year. Despite the blockade, Gaza's economy has been kept afloat in recent years due to large transfers including donor aid and spending through the budget of the PA which together amounted to 70-80 percent of GDP. However, these two sources of funding have significantly declined recently pushing Gaza into a deeper recession. The economic decline has also led to a rapid collapse in humanitarian conditions. Unemployment amongst the youth reached 67 percent and it is even higher for females, about 71 percent.² ³ Four fifths of Gaza's population receive some sort of social assistance and change in social assistance flows has an immediate detrimental effect on wellbeing. The *United Nations Relief and Works Agency* for Palestine Refugees in the Near East (UNRWA) provides food supplies to about one million people and operates 275 schools and 22 health facilities across Gaza. However, UNRWA operations have been impacted by a major reduction in donor contributions. Classrooms are insufficient to satisfy demand despite 85 percent of schools operating double shifts. There is an acute shortage of power supply since current electricity supply (about 170 MW) is one third of demand (500 MW) of which 120 MW is supplied by Israel and 45 to 60 MW from the Gaza Power Plant when fuel is available. Public services are severely impacted by electricity rationing, in particular the health sector which is highly dependent on diesel generators, and water and wastewater services which are operating at sub-standard service levels. There is a dangerous shortage of drinking water, and the lack of wastewater treatment is resulting in large and cumulative environmental degradation inside Gaza and along the Mediterranean coast. Climate change is expected to add further pressure on the water, energy, public health and agricultural sectors with aggravating consequences to the Palestinian economy.⁴

Sectoral and Institutional Context

Overview of the water and wastewater sector

3. **High levels of investment have secured high connection rates to water and sanitation services, however these mask important service challenges.** About US\$1.3 billion has been invested in the Palestinian water and sanitation sector between 2008 and 2018.⁵ As a result, 93 percent of the WB&G households are connected to a water network. At the same time, non-revenue water is high for bulk water and retail drinking water distribution which can reach 56 percent in some municipalities.⁶ Only 30 percent of households have intermittent water supply every day of the month, while the majority of the population has intermittent access only 11 to 20 days per month. In terms of sanitation, 73 percent of

² Economic monitoring report to the Ad Hoc Liaison Committee, October 2019: <http://documents.worldbank.org/curated/en/410061568815090051/Economic-Monitoring-Report-to-the-Ad-Hoc-Liaison-Committee>

³ Hillis, Samira, et.al. (2018). *TA Enhancing Job Opportunities for Skilled Palestinian Women*, World Bank.

⁴ Ministry of Foreign Affairs of the Netherlands. (2018). *Climate Change Profile: Palestinian Territories*

⁵ World Bank. (2018). *Securing Water for Development in West Bank and Gaza*.

⁶ Water Sector Regulatory Council. (2020). *Draft Annual Performance Monitoring Report of Water and Wastewater Service Providers in Palestine for 2018*



Gaza households and only 32 percent of West Bank households have access to a sewage network.⁷ In Gaza, of the 80 million cubic meters (MCM) of wastewater produced per year, around 1 MCM/year was treated and reused, 13 MCM/year was treated and infiltrated into the aquifer for its recovery, and 46 MCM/year was left untreated or partially treated and discharged into the natural drainage, of which part infiltrates and the rest flows to the seashore, contaminating the underlying aquifer and the coastline, which increases the risks of water-borne diseases and reduces the availability of already scarce groundwater resources.⁸ The remaining 20 MCM/year of wastewater receive on-site treatment in septic tanks.⁹

4. **The water and sanitation sector in WB&G operate under systemic challenges and distortions which translates to substandard operations, maintenance neglect, and to a heavy burden on PA's budget.** Most Service Providers (SPs) are still regulated under the Local Authorities Law of 1997 under the jurisdiction of the Ministry of Local Government (MoLG),¹⁰ which does not require them to function as autonomous and accountable water and wastewater utilities. This institutional setup neither encourages nor enforces the ring-fencing of water revenues. Therefore, water and sanitation revenues which represent the largest portion of municipal revenues are diverted to finance other municipal services such as street lighting, garbage collection, and road maintenance, which do not generate revenue. Further, most of the 300 municipalities in WB&G have a low collection rate of user fees and tariffs for only a partial cost-recovery of operations and maintenance (O&M) costs,¹¹ which together with high non-revenue (NRW) rates and non-transparent subsidization of other municipal services means that the SPs run persisting financial deficits, which in 2018 alone represented a subsidy of about US\$70 million from PA's budget.¹² In Gaza, the operating deficit is covered in part by donors and in part through SPs' nonpayment of bills, primarily energy bills; but also by maintenance neglect, and by the low quality of services rendered to the population. The PA attempts to cover the deficit by non-targeted subsidies by making direct payments not covered by SPs like bulk water purchases from Israel, electricity bills, and O&M costs of wastewater treatment plants. In addition, the on-going political tension in Gaza, together with limited entry of construction material and other supplies into Gaza have hampered the ability to make repairs in existing networks and treatment facilities.

5. **The 2014 Water Law also envisages service delivery at the local level to be provided through a limited number of utilities.** Regional Water Utilities (RWUs) are to be formed through the aggregation of existing small SPs (water departments at the Local Government Units - LGUs) to gain economies of scale. The new organizations would be autonomous and financially self-sustaining and owned by the participating local governments. In Gaza, PWA's goal is to transform the Coastal Municipalities Water Utility (CMWU) which was established as a Joint Service Council under the Local Authorities Law of 1997 to become the Gaza RWU. For this, the CMWU is in the process of consolidating the 25 municipal SPs in Gaza. Currently, the CMWU Board comprises nine members: the five largest municipalities from Gaza as

⁷ Country Assistance Strategy FY18-21, Report No. 115201-GZ.

⁸ World Bank (2018) Securing Water for Development in West Bank and Gaza.

⁹ In Gaza, access to improved sanitation is universal, those not connected to a sewerage network rely on on-site services.

¹⁰ Municipal water departments are the most common form of Service Providers (SPs) and are responsible for providing water supply and sewerage services to 70 percent of the population of WB&G, about 3.7 million.

¹¹ Latest data from the Water Services Regulatory Council for 2018, show that the average collection ratio for water and wastewater services in Gaza is around 33 percent.

¹² World Bank (2018) Securing Water for Development in West Bank and Gaza.



permanent members;¹³ three members representing the North, Central and South governorate in a rotating basis; and a non-voting member from the MoLG.¹⁴ In Rafah municipality, the CMWU is already functioning as the *de facto* service provider responsible for the O&M, revenue collection and tariff implementation for water and wastewater services. The two largest municipalities in the Gaza Strip, namely Gaza and Jabalia, have recently applied to fully transfer service provision responsibilities to the CMWU.¹⁵ In the remaining municipalities, the CMWU maintains and upgrades their water and wastewater systems in an ad-hoc basis until they formally join it. The CMWU also provides administrative services (issuing bills but collection is done by the municipality) in fourteen municipalities.¹⁶

Wastewater treatment in Gaza

6. **Gaza is among the most water stressed places in the world, which combined with weak water and sanitation operators, maintains large infrastructure and service deficits.** The main source of water in Gaza is groundwater from the coastal aquifer, which relies on rainfall for recharge. In the last five years, the average annual rainfall in Gaza has decreased by 20-30 percent, and the average recharge volume has dropped by 10-20 percent. On the other hand, over-pumping of groundwater has increased saline water intrusion, and the lack of wastewater treatment and disposal led to aquifer contamination. Most of the 260 municipal wells have salt and nitrate levels above the World Health Organization (WHO) guidelines. As a result, and although 95 percent of the population is connected to the piped network, access to drinking-quality water is just one percent, compared to universal access 20 years ago. The result is that 97 percent of the drinking water consumed in Gaza is supplied, mainly via tanker, by small-scale private providers or non-governmental organizations (NGOs).

7. **To address the serious health and environmental threats posed by inadequate collection and treatment of wastewater, Gaza embarked into major investments in wastewater treatment with strong support from international donors.** Over the past 15 years, wastewater investments in Gaza add to about US\$235 million for the construction of three wastewater treatment plants (WWTPs) serving the governorates of North Gaza, Central Gaza and Southern Gaza. The North Gaza Emergency Sewage Treatment (NGEST) Project,¹⁷ financed the construction of the North Gaza Wastewater Management Facilities (NGWMF) which entered full operation in March 2018 for a design capacity of about 35,600 m³/day to treat, infiltrate and recover sewage effluent.¹⁸ The French Development Agency (AFD) is financing complementary infrastructure including the construction of additional recovery wells, irrigation networks for agriculture land which will be supplied with the recovered water, and the installation of photovoltaic panels (PV) that will produce enough power to cover the full electricity needs of the NGWMF by 2023, that will boost the benefits and increase the resilience of the NGWMF. The wastewater facilities in Central Gaza (AL-Bureij) financed by the German Bank for Development and Reconstruction (KfW) with

¹³ Gaza, Jabalia, Deir Al Balah, Khan Younis and Rafah

¹⁴ From 1995 to 1999 and from 2005 to 2008, the World Bank financed the successful establishment of the CMWU as the service provider of all 25 municipalities. However, the conditions created by the political divisions between Ramallah and Gaza resulted in all municipalities assuming service delivery in their cities except for Rafah.

¹⁵ Jabalia is the largest municipality connected to the NG WWTP

¹⁶ KfW. (2017). *Annex 1. Gaza Water Sector Institutional Review. Integrated Wastewater & Resource Efficiency Programme Gaza*

¹⁷ P074595. The Project closed on June 30, 2018.

¹⁸ The NGWMF comprise a terminal pumping station, pressurized transmission pipeline, infiltration ponds and recovery wells and booster system.



a design capacity for 60,000 m³/day will enter full operation in June 2020, starting with a commissioning period, followed by an operational contract of 5 years financed by the donor on a declining basis. A third WWTP in the south (Khan Younis) is financed by the Government of Japan and Kuwaiti Fund for Arab Economic Development and implemented by the United Nations Development Programme (UNDP) which started operations in November 2019 with a nominal capacity of 26,800 m³/day. These three WWTPs have the capacity to treat 74 percent of the collected wastewater produced in Gaza. Both the PWA and the donor community are working towards transforming the CMWU into an RWU under the 2014 Water law with responsibilities for the O&M of these three WWTPs in Gaza.

Challenges for wastewater management in North Gaza

8. **The functioning of the NGWMF since March 2018, has successfully contributed to improving health and environmental conditions in northern Gaza.** Before the wastewater system under the NGEST project entered operation, the untreated effluent collected by the four municipalities of Jabalia, Beith Hanoun, Beit Lahia and Um Al-Nasser was discharged into the North of Beit Lahia area. Overtime, a lake of untreated wastewater was formed over an area of about 30 ha, which could not be discharged into the sea.¹⁹ Part of the wastewater evaporated, and another part infiltrated and polluted the coastal aquifer which is the primary source for drinking water in the area. Groundwater contamination exposed the population to waterborne diseases. The sewage volume that remained in the lake increased and it became an additional flood risk to the surrounding population.²⁰ Tragically, the sand embankments confining the sewage ponds breached on three occasions between 1989 and 2007, resulting in casualties, injuries, economic losses, and asset damage.²¹ Raw sewage flooded multiple houses in the area of Beit Lahia and Um Al Nasser with a sad balance of dead, disease and economic losses. The commissioning of the NGWMF provided an effective solution to treat wastewater effluents, prevent the degradation of the aquifer, mitigate flood risk, and create opportunities for biogas generation and wastewater reuse in agriculture. With all these improved health and environmental conditions in northern Gaza, the NGWMF adds to fiscal burden of the PA as user fees do not contribute to cost recovery.

9. **The health and environmental benefits gained by the operation of the NGWMF are at risk to returning to pre-NGEST project conditions, as PWA is unable to continue funding its O&M costs.** When the NGEST project closed in June 2018, the agreed O&M arrangements included an international joint venture (JV) contractor that was to be in charge for the O&M of the NGWMF for a period of two years (up to February 2020). The Ministry of Finance (MoF) committed to provide the necessary financing to the PWA to pay for the full two-year operation contract arrangement. However, the financial collapse of the Palestinian economy in 2018 compromised the already weak financial capacity of the PWA to continue funding the operating expenditures of the NGWMF. This situation limited the ability to process the payments due to the contractor on time, which consequently decided to terminate the contract unilaterally in July 2019. The sudden departure of the JV contractor and uncertainty as to the final institutional arrangements for the O&M of the NGWMF, did not allow for an adequate and ordered transfer of O&M responsibilities for the NGWMF.

¹⁹ Restrictions posed by Israeli regulations.

²⁰ Flood risks will be exacerbated by a projected increase in precipitation extremes due to climate change.

²¹ <https://www.worldbank.org/en/news/video/2018/08/06/delivering-life-saving-sanitation-services-in-gaza>



10. **The urgent situation that led to PWA's taking over of the O&M of the NGWMF is outside its institutional mandate and hinders efforts of sustainable institutional arrangements for wastewater management in Gaza.** Since August 2019, and although not within its institutional mandate, the PWA has been operating the NGWMF with its own resources but it is struggling to pay the salaries of a minimum number of operational staff and trying hard to retain qualified personnel to manage the plant.²² PWA has received an emergency grant from the French Development Agency (AFD) to procure essential chemical products and consumables as well as staff salaries to run the plant until the end of February 2020.²³ Without an urgent additional short-term financial support, the operations of the NGWMF will be halted in March 2020. In the medium to longer term, the NGWMF will not be sustainable without a legally and technically qualified utility to perform O&M functions under an adequate institutional and financial framework. There is no clear plan for cost recovery.

11. **Climate change related risks in Gaza, mainly droughts, flash floods and sea level rise, are significant and will amplify development challenges in the water sector.** The main water source in Gaza is the Coastal Aquifer which is over-exploited due to increasing water demand of the population - currently 2 million and expected to double by 2050. Groundwater quality has deteriorated due to sea water intrusion and the infiltration of untreated sewage.²⁴ Moreover, there is a marked increase in temperatures and decrease in precipitation over the past 15 years. According to the latest climate projections, temperatures in the region may increase between 1.8°C and 5.1°C by the end of the century and annual precipitation rates are likely to decrease by 20 percent by 2050 with an increased risk of longer summer droughts.^{25,26} All of these combined increases evaporation rates, reduces runoff, and decreases groundwater replenishment which further reduces the already scarce water resources in Gaza. Although average precipitation is expected to decrease, high intensity precipitation events (HPEs) are expected to be more frequent leading to more damaging flash floods. These projections underline the need to achieve better water resources and wastewater management in Gaza to reduce contamination of the underlying aquifer, increase reuse of treated wastewater, and building resilient infrastructure to arrest the effects of climate change, such as droughts flash floods, and sea level rise.

The Proposed Project

12. **The proposed Gaza Wastewater Management Sustainability (WMS) Project has been designed to finance efficient O&M for the NGWMF for four years and build conditions for sustainable wastewater treatment services.** The proposed Gaza WMS project will provide technical and financial resources to

²² The TPS is currently being operated under the responsibility of the North Gaza municipalities with ad-hoc support from the CMWU and in coordination with PWA.

²³ Between July and August 2019, the plant operated at an average capacity of 20,000m³/day in order to reduce costs (reduced use of polymers, reduced production of sludge and less transportation costs, etc). Once AFD funds became available in September, the WWTP still did not operate at full capacity due to the breakdown of four of five of the TPS pumps. The remaining wastewater inflow during that time was discharged without treatment to the Random Lakes or North Lakes. Since January 2020, PWA has managed to repair four of the pumps and is providing treatment at the WWTPs capacity level.

²⁴ Salinity and nitrate concentration are 6 times higher than the World Health Organization standards. Due primarily to its permeable sandy cover, the aquifer itself is vulnerable to pollution from the surface.

²⁵ The Gaza strip is largely a flat terrain characterized by a coastal climate and receives around 200 to 400 mm/year rainfall. In the north, Beit Lahia, the average seasonal rainfall is 522 mm.

²⁶ Ministry of Foreign Affairs of the Netherlands. (2018). *Climate Change Profile: Palestinian Territories*



prevent the collapse of the NGWMF and continue the operation of the facilities at design capacity, while building a long-term technical, institutional and financial capacity to operate and maintain wastewater services in northern Gaza. For this purpose, the project will finance efficient O&M expenses for four years excluding electricity which will be financed by the Palestinian Authority, minor rehabilitation of equipment and civil works at the NGWMF to guarantee performance at design capacity.²⁷ In addition, the project will finance activities to enhance the sustainability of the O&M of wastewater treatment services in Gaza over the medium to long term. It includes upgrading the NGWMF to gain efficiency, resiliency and flexibility of operations to respond to man-made hazards, climate change and political conflicts. On the institutional side, it would finance technical assistance to build capacity for sustainability as well as for designing proper institutional and financial arrangements for the O&M of the NGWMF in conjunction with the PWA, the four municipalities in North Gaza, and the CMWU. By the end of the project, cost recovery situation would have improved, and less O&M support will be needed.

C. Proposed Development Objective(s)

Development Objective(s) (From PAD)

The Project Development Objective (PDO) is to: (i) support the continuation of wastewater treatment services in North Gaza; and (ii) strengthen the capacity of the water institutions to efficiently manage wastewater services.

Key Results

13. The achievement of the PDO will be assessed against the following indicators:
 - a. Number of total people benefiting from the project (disaggregated by gender);
 - b. Percentage of quality control tests performed annually to NG WWTP effluent discharges that meet applicable discharge standards;
 - c. Percentage of the monthly volume of wastewater arriving at the TPS that is treated;
 - d. NGWMF O&M function integrated (or mainstreamed) into the CMWU;
 - e. Percentage of the O&M costs that are covered by municipal transfers;
 - f. Average O&M costs of the NGWMF per month in USD.

D. Project Description

14. **Component 1: Support the continued operation of the NGWMF (US\$7.1 million).**²⁸ This component is designed to meet the first part of the project's development objective by supporting the urgent need for continuous operation of the NGWMF to avoid its operational collapse, and by protecting the positive impacts of the NGEST project on the environment and health of the population in the surrounding communities. The component will finance a team to operate and maintain the NGWMF and associated costs through the duration of the project, polymers, tools and consumables. It will also finance

²⁷ The project will also retroactively finance the O&M costs from March until project effectiveness (expected in September 2020). O&M costs include staff, office supplies, maintenance, sludge treatment and disposal, chemicals and laboratory costs.

²⁸ The scope and priority of rehabilitation needed has been assessed through the preparation of a rigorous and independent performance and technical audit.



the costs to dispose sludge. The electricity costs for the operation of the NGWMF will be financed by the Palestinian Authority under agreed standards and protocols.

15. **Component 2: Rehabilitation and upgrade of the NGWMF to improve efficiency, build resiliency and address emergencies (US\$3.4 million).** This component addresses part of the second part of the PDO on improving technical efficiency and aims at gaining efficiency, resiliency and flexibility of operations of the NGWMF to be able to respond to fluctuating sewage flows on a daily and weekly cycles, increased sewage flows in the wet season, unexpected operational failure, man-made hazards, climate change-related risks and political conflicts. It will also improve the operational performance of the NGWMF and indirectly enable reuse of treated wastewater for agriculture, making operations more efficient and services more reliable, thereby enhancing resilience of drought-prone areas. The component will specifically finance activities in three sub-components: (i) Rehabilitation and retrofitting of underperforming equipment at the NGWMF, including the reparation of a biogas balloon, installation of a new voltage regulation system, and an integrated SCADA system for the TPS and NGWWTP; (ii) Improve the efficiency of operations by upgrading a section of the pond #7 into a lined and aerated Equalization (EQ) basin to enable operations under consistent flow 24 hours per day by storing excess wastewater during peak flows and pumping them back to the TPS during low flows; and (iii) Improve resilience of the system to high precipitation events, unexpected malfunctions of the facilities or damages caused by potential political conflicts by constructing an emergency reservoir on a section of pond #7 and the Random Lakes, allowing for full retention of about six days of wastewater inflows, which will be then gradually pumped back into the equalizer pond and ultimately into the TPS. These investments will increase the overall resilience of the system to the effects of climate change, in particular, the expected increase in the intensity and frequency of precipitation events, in this way allowing for flood management prevention upstream and downstream of the TPS.

16. **Component 3: Capacity building for sustainability of wastewater services in northern Gaza (US\$ 2.2 million).** This component is designed to create the capacity for sustainable O&M of wastewater services in North Gaza. As such it also directly addresses the second part of the project's development objective by financing technical assistance to build capacity for sustainability by implementing efficient institutional arrangements for O&M of the NGWMF in conjunction with the PWA, the four municipalities in north Gaza, and the CMWU. The proposed model for the institutional arrangements in north Gaza will lay a sound foundation for a sustainable O&M of the different WWTPs in Gaza. It will specifically finance four sub-components: (i) fiduciary actions for the CMWU that include the preparation along with established mechanisms for implementing of a unified procurement plan, warehouse management and a financial and technical audit of CMWU operations; (ii) support institutional efforts at the national and local levels to reorganize the CMWU into a RWU. These efforts include (a) relevant internal by-law to reorganize the CMWU as a RWU; (b) development of a business plan for the CMWU and implementation of key priorities based on the CMWU's compliance with their fiduciary action (under sub-component 3.i); (c) and facilitation of the establishment of service contracts between the municipalities and the CMWU specifying agreed-upon financial transfers towards the O&M costs of the NGWMF;²⁹ (iii) capacity building for the operation of the NGWMF through a twinning (peer-to-peer water operator partnership) arrangement between an international experienced utility and the team operating the NGWMF³⁰. This

²⁹ The guarantor of the service contracts will be the Ministry of Local Governments with the backing of the Ministry of Finance.

³⁰ The operational team of the NGWMF will initially be staff hired by the PWA during the lifetime of the project. The project will support a gradual transition of the O&M team to CMWU as it is expected that at the end of the project this team, would be



could include assessments for revenue generation and cost saving options for the CMWU, such as energy audit to identify high-return energy efficiency measures for the CMWU's WSS services; and facilitate knowledge exchange between wastewater operators in West Bank and Gaza; and (iv) support the building blocks for the financial sustainability of the NGWMF through: (a) a detailed assessment of revenue flows and cost recovery limits in Gaza with a focus on the four north municipalities; (b) supporting arrangements to ensure that the salaries of the NGWMF O&M team can be covered by the CMWU after project closing by assessing different options, *including* opening an escrow account for the municipal contributions to O&M costs and possible PA matching funds, in kind contributions from the municipalities of personnel to the O&M team, and/or government contribution to cover salaries as a result of potential energy savings; and (c) outreach and communications efforts as part of the project's citizen engagement strategy with a particular focus on raising awareness about the importance of wastewater services and increasing willingness to pay for the services.

17. **Component 4: Project management and implementation support (US\$1.0 million).** This component seeks to support overall project management, including ensuring compliance with environmental and social safeguards as well as the preparation of engineering designs and tender documents for future investments needed to further enhance the O&M sustainability of the NGWMF. It would specifically finance: (i) the Project Management Unit's core staff in charge of overall project supervision management; (ii) specific activities needed for compliance with environmental and social safeguards (environmental and social audit, awareness campaign regarding environmental and social safeguards with communities nearby the location of the TPS and WWTP, satisfaction survey, among others); (iii) a financial auditing firm; (iv) specific engineering services for the development of technical designs balancing complexity versus life cycle costing, and preparation of the tender documents for the expansion of the NGWMF to a capacity of 64,000 m³/day which is needed to meet wastewater treatment demand in north Gaza after 2025, (v) a detailed study for sludge management options including reuse and cost optimization, and (vi) independent Project Implementation Consultant (PIC) who will provide technical assistance on the technical design and procurement process and will supervise the implementation of construction contracts.

18. **Component 5: Contingency Emergency Response Component (US\$ 0.0 million).** Should a natural event, conflict or health emergency precipitate a major disaster affecting the livelihoods of people living in the WB&G, the government may request the World Bank to reallocate project funds to cover some costs of emergency response and recovery. The operational guidelines for implementing the project Contingency Emergency Response Component (CERC) will be laid out in the CERC annex of the Project Implementation Manual (PIM), specifying procurement, safeguard and financial management arrangements, and training of different stakeholders. Disbursements will be made against an approved list of goods, works, and services required to support crisis mitigation, response, recovery, and reconstruction.

19. **The project is financing adaptation measures to cope with the effects of climate change.** Gaza is particularly vulnerable to climate change effects which include higher temperatures and lower precipitation rates which increases the stress on already scarce water resources and raises the risk of flash floods. Adapting to climate change is paramount for the project, therefore it is supporting the following

absorbed by the CMWU, in this way institutionalizing this capacity.



adaptation measures: (i) replenishing the coastal aquifer with good quality water in infiltration ponds (components 1&2); (ii) enabling reuse of recovered water in agriculture (components 1&2),³¹ and (iii) increased resilience to stormwater flood risks and sewage overflows (Component 2).

Legal Operational Policies

| | Triggered? |
|---|------------|
| Projects on International Waterways OP 7.50 | No |
| Projects in Disputed Areas OP 7.60 | No |

Summary of Assessment of Environmental and Social Risks and Impacts

20. **Environmental & Social.** The project is expected to have overall positive environmental and social impacts as it prevents the collapse of the NGWMF. The Project, however, entails substantial risks including risk to ground water pollution from infiltration of non-compliant effluent to the underlying aquifer, risks to occupational health and safety during construction and operation of plant, risks associated with random lakes and handling and disposal of sludge. There are also legacy issues related to the breach of the big lake before the construction of the NGWMF, flooding the communities downstream of the lake. Under component 2, the project will finance upgrading of the existing pond #7 into an EQ basin, to among other things, reinforce its embankment. Before the construction and operationalization of the NGWMF untreated wastewater pooled into lakes over an area of more than 30ha due to a lack of natural drainage and prohibitions to discharge the wastewater to the sea. The lakes were dried up when the NGWMF became operational; however, a number of random lakes, including pond 7, started to receive wastewater due to disruptions in the operation of the NGWWTP. This will be addressed under the project.

21. The project will enable the protection from contamination of soil and groundwater and hence municipal groundwater wells, protect the public health, especially in the area around Pond 7, and enable the utilization of recovered water in irrigation. There are some environmental risks/impacts related to the upgrade and operation of the TPS and NGWWTP and upgrade of Pond 7 and adjacent lakes mainly related to the risk of generating non-compliant effluent or sludge, generating odors, uncontrolled dewatering of Pond 7 and adjacent ponds, health and safety risks to the Bedouin community adjacent to the random lake including spread of skin diseases, spread of mosquitos, flies, and other pests, flooding risk to the surrounding communities especially in the downstream of the lagoons causing fatalities in the communities downstream, noise and inadequate management of waste. Even though the project environmental and social risk is substantial, the project is not likely to cause significant environmental impacts as none of the environmental risks/impacts are long term, irreversible, cumulative with other existing or foreseen impacts or could impact a sensitive environment. Furthermore, Component 4 of the Project includes preparing a strategic study for sludge management, feasibility study & preliminary design of a long-term emergency disposal and the designs and tender documents for NGWWTP expansion, which will strategically address future aspects of wastewater and sludge generation. There are some substantial

³¹ The actual reuse infrastructure is being financed by AFD.



social risks, partially due to the legacy issues related to previous incidents around the random lakes near the TPS. Before the NGWMF were put into operation and the random lakes had been drained, the embankment of one of the ponds was breached, causing several fatalities in the communities downstream, mainly poor and vulnerable. The risk will be mitigated through the measures already included in the Project design (fencing and improving the embankments of the pond number 7 and the construction of the emergency reservoir under component 2). Other legacy issues are related to an instance of illegal farming in one of the Random Lakes which has since been resolved and the lack of an emergency preparedness plan for the communities around the lakes, which will now be prepared under the project. Other environmental and social risks are described in section VI.

22. **ESF instruments.** PWA has prepared an Environmental and Social Audit (ESA) for the existing assets of the NGWMF and an Environmental and Social Management Plan (ESMP) for the planned civil works and equipment installations under components 1 and 2. The ESMP addresses some new equipment that would be installed in the existing facilities (the TPS and the WWTP) to replace/repair damaged equipment, as well as some civil works needed in an existing sewage pond (pond #7) to make it function as an equalization basin and emergency reservoir. No works will be carried out in greenfield areas or outside the footprint of existing facilities (no land acquisition or horizontal expansion of existing facilities will be carried out). The instruments found that most of the NGWMF ESMP measures were complied with, especially the environmental controls of the WWTP (operation of the infiltration basins, control of neighboring recovery wells, noise and odor control systems). However, there were some areas where partial compliances / non compliances were found, due to the lack of funds, including conducting the monitoring program not at the required frequencies, malfunctioning of the odor control system at the TPS, staff training for handling oils, polymers and lubricants, some OHS issues and absence of emergency repose plan. Both instruments recommended certain measures to improve E&S performance and fulfill the requirement of the ESF, which will be included in the procurement/bidding documents for equipment and civil works. PWA prepared a Labor Management Plan (LMP) which includes measures to comply with ESS2 requirements, a Stakeholder Engagement Plan (SEP) and an Environmental and Social Commitment Plan (ESCP).

E. Implementation

Institutional and Implementation Arrangements

23. The Ministry of Finance and Planning (MOFP), representing the Palestinian Liberation Organization (PLO), will sign Grant Agreements (GAs) with the Trust Fund for Gaza and the West Bank (TFGWB) and with the Partnership for Infrastructure Development Multi-Donor Trust Fund (PID MDTF) for the benefit of the Palestinian Authority. The PA will implement the project through the PWA for the benefit of the people of Gaza in accordance with the legal agreements between the Bank and the Recipient.

24. **A Project Management Support Unit (PMSU) is being set up within PWA, with key staff experienced in Bank projects.** The PMSU will be responsible for project oversight, monitoring, reporting, facilitation, hiring of consultants, contract awards and contract management, financial management, implementation of environmental and social safeguards and coordination with stakeholders. The proposed PMSU staffing include a full-time project manager, a full-time procurement specialist and a full-time financial specialist. It will also include part time environmental and social & gender specialists as well



as a part time monitoring and evaluation officer which will be shared with other projects being implemented by the PMSU.³² The PMSU will also hire an independent site engineer to supervise the implementation of civil works under component 1 and 2 during the duration of contract length as well as an administration & financial control officer with their TORs acceptable to the Bank.

25. **The proposed institutional arrangements for the operation of the NGWMF are designed to ensure its continued operation in an efficient manner while incorporating lessons learned from the implementation of previous projects.** Taking into consideration the different challenges in attracting private sector companies in a Gaza context, the NGWMF will be operated during the project’s lifetime by a local team of engineers, technicians, operators, and administrative support staff (the NGWMF O&M team) that will be directly contracted by the PWA PMSU with component 1 financing. The O&M team will benefit from the capacity building activities planned under a twinning arrangement within component 3. At the end of the project, the O&M team is expected to be incorporated into the CMWU’s organization, thus institutionalizing the technical capacity to operate the NGWMF. The project will support arrangements to ensure that the salaries of the O&M team could be covered by the CMWU after project closing, through different options including (a) funds at the escrow account from municipal contribution and possible PA matching funds (b) in kind contribution from the municipalities of personnel to the O&M team, and (c) government contribution to cover salaries as a result of potential energy saving.

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³² The same PMSU is implementing the Central Gaza Desalination Associated Works Project and the Hebron Wastewater Management Project.



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