

**PROJECT INFORMATION DOCUMENT (PID)
APPRAISAL STAGE**

Report No.: AB7495

Project Name	North Gaza Emergency Sewage Treatment Project - Third Additional Financing
Region	MIDDLE EAST AND NORTH AFRICA
Country	West Bank and Gaza
Sector	Wastewater Treatment and Disposal (90%);Irrigation and drainage (10%)
Project ID	P146065
Parent Project ID	P074595
Borrower(s)	PALESTINIAN AUTHORITY – MINISTRY OF FINANCE
Implementing Agency	
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Environment Category	<input checked="" type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> FI <input type="checkbox"/> TBD (to be determined)
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Country and Sector Background

1. Israel and the Palestinian Authority re-initiated peace negotiations in mid-2013 following a three-year hiatus aimed at reaching agreement on “Final Status” issues, but there has been no substantive progress as yet. Civil unrest to demonstrate against the rising cost of living and repeated civil service strikes to protest against frequent delays in salary payments have recently added to the complex Palestinian political situation. After growing at an annual rate of 11 percent during 2010–2011, the Palestinian economy has recently slowed down significantly. According to the Palestinian Central Bureau of Statistics (PCBS), the real Gross Domestic Product (GDP) growth rate in the West Bank and Gaza has declined to 6 percent in 2012, as growth dropped both in Gaza and the West Bank. The economic situation has further deteriorated in 2013 with the PCBS reporting that growth during the first quarter of the year declined to 2.7 percent. Recent growth trends in the West Bank and Gaza underscore the importance of aid in driving the economy; most of the growth witnessed over the last several years was in the public and non-tradable sectors and was driven by donor-supported PA expenditures. The restriction system put in place by the Government of Israel continues to stand in the way of potential private investment that could reduce dependence on donor aid. The recent slowdown in economic growth has also been reflected in higher unemployment levels, especially among the youth. When compared to the fourth quarter (Q4) of 2011, the overall unemployment rate in the West Bank and Gaza increased by 1.4 percentage points to reach 22.3 percent in Q2 2013. In the West Bank, unemployment increased to 18.6 percent between Q4 2011 and Q4 2012. Gaza’s unemployment rate continues to be among the highest in the world at around 29.5 percent in Q2 2013. Youth unemployment continues to be a serious concern. In the West Bank, 28.6 percent of young Palestinians aged 15–29 were unemployed; in Gaza,

the youth unemployment rate was 46.6 percent. The persistence of high unemployment reflects the skewed nature of growth with the expansion of the labor intensive sectors constrained, in particular the manufacturing sector, by Israeli trade restrictions. Palestinian youth are discouraged from joining the labor force because of the lack of opportunities.

2. In spite of the PA's reform efforts, lower than expected foreign aid is both hindering growth and putting significant stress on the PA's fiscal situation. Donor aid for recurrent spending and development projects has declined from \$1.98 billion in 2008 to \$930 million in 2012. This has been compounded by shortfalls in revenue as well as higher than expected expenditures—particularly pension payments. The PA has had to compensate for the lower than expected level of donor aid with domestic sources. This has been causing frequent delays in salary payments to public employees, accumulation of arrears to the private sector, as well as increased borrowing from local commercial banks.

3. Water is a key economic development and humanitarian issue in West Bank and Gaza. Palestinian water outcomes and rights to water are linked to the Oslo process and to Final Status negotiations. As a result of restrictions accompanying Israeli occupation of the West Bank and the 1995 Oslo II interim accord water provisions, Palestinians cope with one of the lowest levels of per capita water resource availability in MNA.¹ In the West Bank, development of water resources and infrastructure is subject to Israeli veto power under the Joint Water Committee (JWC). In Gaza, it is curtailed by a security blockade. These restrictions, along with weak Palestinian institutions and operators² and fast demographic growth, perpetuate Water Supply and Sanitation (WSS) infrastructure and service deficits as well as operational inefficiencies.³ They result in heavy reliance on water trucking, makeshift desalination, and non-potable water supplies, while also increasing dependence on the Israeli bulk water utility Mekorot. The pervasive impacts of this situation are strongest in Gaza, in Area C⁴, and on the poor. The lack of wastewater treatment contributes to widespread contamination of aquifers that are for the most part shared between Israel, the West Bank, and Gaza. All the while, planning and regulation of water resources is very weak, and the potential of the irrigation sector remains largely underdeveloped. Key sector issues can be summarized as:

- a) *Lack of sovereign control over West Bank and Gaza water resources and water infrastructure development*, leading to: (i) highly restricted access to water resources (and potential erosion of *Final Status* water rights); (ii) perpetuation of ad-hoc emergency planning as opposed to strategic planning, and (iii) uncertainty and delays in infrastructure project authorization and implementation;
- b) *Major WSS infrastructure deficits and inefficiencies in the West Bank and in Gaza*, with (i) inadequate and unreliable access to potable water, particularly in Gaza and Area C, (ii) lack of wastewater treatment and reuse, and (iii) uneven reliability, performance and sustainability of WSS operations;

¹ 75 m³/per capita (pc)/year in the West Bank and 125 m³/pc/yr in Gaza (<500m³/pc/yr defines “water stress”).

² World Bank (2009) *Assessment of Restrictions on Palestinian Water Sector Development*, Report 47567-GZ (aka *Water Restrictions Study*).

³ Although 90% of the population and 64% of communities have access to a water network, service discontinuity results in average consumptions as low as 50 l/pc/day, dropping to a crippling 15 l/pc/day in some areas. All the while, water loss and bill collection rates hover around 35% and 50%, respectively.

⁴ The West Bank is divided per Oslo Accords into 3 areas: 2 areas are under Palestinian control and correspond to all major population centers (Area A) and most rural communities (Area B). The third area, Area C, is under Israeli control both for security and for civilian affairs related to territory, including land administration and planning.

- c) *Pending environmental and public-health collapse in Gaza*, with 95% of water resources unfit for potable treatment for 1.5m inhabitants, due to saline intrusions and untreated sewage infiltrations; and
- d) *Governance and capacity weaknesses in the Palestinian water sector*, including Palestinian Water Authority (PWA) and municipal service providers, in need of institutional reform, towards clearer roles and accountability, reorganization and capacity building.

4. A pressing environmental and public health issue is that most of the sewage from the main Palestinian centers of population currently runs untreated through populated areas and environmentally sensitive zones. In a context of harsh water scarcity, now exacerbated by climate change, it is important for Palestinians to make the most of wastewater as a recycled water resource, and to avoid losing usage rights to this resource in Final Status negotiations. In the West Bank and Gaza, the use of reclaimed water to meet increasing agricultural water demands has been identified as one of the main objectives for the Palestinian water sector in the water sector strategies of the last decade. The total volume of treated wastewater from the main Palestinian cities is around 12.1 million cubic meters (M³) per year, but with the exception of the treatment facilities at Al-Bireh, east of Ramallah, the existing treatment facilities of the main Palestinian cities are overloaded, rendering the treated water unsuitable for sustainable agricultural reuse. A key policy of the sector in order to make reclaimed water available for agricultural reuse is to concentrate wastewater treatment and collection in regional WWTPs that are located adjacent to agricultural areas.

Objectives

5. The objectives of the overall project are to: (i) mitigate the immediate health and environmental safety threats to the communities surrounding the effluent lake at BLWWTP; and (ii) provide a satisfactory long-term solution to the treatment of wastewater for the northern governorate in Gaza.

Rationale for Bank Involvement

6. The existing Beit Lahiya Wastewater Treatment Plant (BLWWTP), constructed in 1976, is located in the northern part of Gaza, at the outskirts of the town of Beit Lahiya. It was designed to serve a population of 50,000, with a capacity to treat 5,000 cubic meters per day of wastewater to secondary treatment levels. During the 1990s and early 2000s, neighboring communities were provided with sewerage networks and were subsequently connected to the BLWWTP, which now serves a population of about 250,000 people from the municipalities of Jabalya (including the refugee camp), Beit Lahiya, Beit Hanoun, and Um Al Nasser. The current volume of sewage inflows to the BLWWTP is estimated at about 21,000m³/d, more than four times the plant's original design capacity. At the outset of the project, excess flows of partially treated effluent were being channeled to emergency holding ponds adjacent to residential areas.

7. An emergency grant of US\$7.8 million was approved by the Board on September 7, 2004 to finance the NGEST Project. The objectives of the overall project are to mitigate the immediate health and environmental safety threats to the communities surrounding the effluent lake at BLWWTP and provide a satisfactory long-term solution to the treatment of wastewater for the northern governorate in Gaza. These objectives are being pursued through the implementation of the two-part NGEST program (Part A and B), designed to deal with both impending threats and long-term needs:

Part A was designed to drain the effluent lake to alleviate the environmental and health threats associated with the existing BLWWTP. The effluent has been transferred to

another site where new infiltration basins have been built, thus eliminating the immediate threat of flooding and backflows of raw sewage; and

Part B will provide a long-term solution to the wastewater treatment issue for northern Gaza area by constructing a new wastewater treatment plant (WWTP) with improved effluent quality standards and developing the institutional capacity to operate and maintain the plant. It will also encompass wastewater recovery and reuse along with remediation measures at the BLWWTP to mitigate impacts on groundwater resources.

Description

8. Delays in implementation caused by the political and security situation, the global increase in energy prices and raw materials costs, as well as the weakening of the US dollar in relation to the Euro, have significantly impeded implementation and increased the costs for all aspects of the project. In particular, the prevailing security situation in Gaza with frequent closures and restrictions on movement and access (access to the project sites that are adjacent to the border with Israel and restrictive controls on the entrance to Gaza of construction material, technical staff, etc.) has been, and continues to be, a significant cause of delays and cost overruns.

9. Furthermore, since the NGEST Project was an emergency response to a wastewater management crisis, an Environmental Assessment (EA) was carried out and an Environmental Management Plan (EMP) was prepared during project implementation. The precise nature of investments that would be required to ensure the long term sustainability and effectiveness of wastewater treatment for Northern Gaza was therefore not known at the outset of the project. The EA and EMP were completed in 2006. They identified the need to protect the Coastal Aquifer through an effluent recovery and reuse scheme.

10. A first additional financing grant of US\$12 million from the TFGWB (AF1, P091314) was approved by the Board in 2008 with a closing date of June 30, 2012 to cover the cost overrun of part A and for a portion of the costs of the effluent recovery and reuse scheme that is in Part B. The recovery and reuse scheme is essential to ensure the environmental sustainability of the project. It will also entail additional economic benefits by providing a valuable source of reclaimed water for irrigation.

11. Part A of the Project (construction of terminal pumping station, installation of a pressure pipeline, and construction of nine infiltration ponds at the site for Part B) was completed in 2010, and the new ponds have been in use since April 2009. The unstable emergency sludge holding ponds at Beit Lahiya were drained and the immediate danger and environmental threat posed by them was eliminated, effectively achieving the Project's first Development Objective.

12. ***Second additional financing:*** Implementation of Part B – in particular construction of the WWTP - was delayed and costs increased due to uncertainties about sources of funds, conflict between Israel and Gaza that resulted in significant damage to the infrastructure that was constructed through the project, and continued restrictions on entry of goods and services to Gaza. The second additional financing grant of US\$7.0 million was provided to help fill the funding gap. AFD also provided an additional grant of 5 million Euros in 2010 for this purpose.

13. ***Proposed Third additional financing and extension of closing date:*** The costs of the NGEST Project have continued to rise due to a number of factors, principally the continued restrictions on entry of goods and services to Gaza, ongoing periodic conflict with Israel, and a

need to redesign some parts of the NGWWTP. In addition, damage to the Gaza power system has resulted in costs for providing electricity for the NGWWTP that were unforeseen when the project was designed, and deteriorating water services in Gaza overall has caused increased costs for providing water for the plant. A financing gap of US\$5.5 million now exists to make the remaining payments for the NGWWTP civil works contract. US\$ 6.9 million is needed to operate and maintain the plant and build the institutional capacity for sustained operation over a period of three years. US\$ 3.6 million is required to construct phase 1 of effluent recovery and reuse scheme.

Financing

Source:	(US\$ Millions)
Borrower	0
BELGIUM: MOFA-Directorate-General for Int. Coop.(DGIC)	2.57
Partnership for Water and Urban Development in the West Bank	5
Special Financing	3
Total	10.57

Implementation

14. Part A of the NGEST Project is now completed. The immediate objective to mitigate the health and environmental safety threats to communities surrounding the effluent lake at Beit Lahiya has been largely achieved. The lake is drained and since December 2010 most effluent from the old treatment plant is being pumped to the new infiltration ponds at the site for Part B. Remedial work on the dried ponds at Beit Lahiya is also planned. All Part A facilities are now managed by the Coastal Municipalities Water Utility (CMWU). Technical assistance is ongoing for the implementation of Part B activities including support for the operation of the PMU and implementation of the environmental monitoring plan.

15. In addition, the construction of five groundwater monitoring wells has been completed and a groundwater base line survey has been completed. The water quality monitoring contract at both Beit Lahiya and at the new site has been awarded and groundwater monitoring is ongoing. The groundwater model has been revised to produce meaningful baseline data for the well field test rounds.

16. The civil works contract for Part B commenced in early September 2010. However, close coordination with the Israeli Defense Force's (IDF's) Coordinator of Government Activities in the Territories (COGAT), along with other donors, remains critical to ensure predictable and timely delivery of goods, materials, and consultants across the Israeli border. The delays and cost overruns that plagued implementation of Part A because of restrictions and access issues have continued to affect the project. The contractor responsible for the construction of the new WWTP has been granted a 128 day extension to complete construction. Reasons for this extension include, in addition to security and import restrictions, modifications to the original engineering designs which have been required for technical reasons. The ponds will also need some rehabilitation to regain infiltration efficiency following completion of the WWTP. Overall, however, the project remains on track to meet its development objectives. A new resident supervising engineer was appointed in November 2012 and supervision quality has improved as a result. Construction of the WWTP is nearing completion and commissioning is beginning in December 2013. Some additional investment is required for the electricity supply to the

WWTP. In addition, the costs for securing water from municipal suppliers has increased. Finally, additional investment is required to repair damages to the entrance road and electro-mechanical works at the plant that resulted from the December 2013 winter storm. These additional investments notwithstanding, the plant is expected to be fully operational in early 2014.

17. A detailed design study for effluent recovery and reuse, which will provide long-term protection for the underlying aquifer as well as irrigation water for about 1500 hectares of agricultural land, has been completed. The total cost for fully implementing the scheme is estimated at \$28 million. The first phase of the reuse scheme, which is expected to cost \$12 million, must be completed in 2015 to minimize long-term impacts on aquifer water quality. The first and third additional financing and contributions from AFD are expected to cover the cost for the first phase of the reuse scheme.

Sustainability

18. The Third Additional Financing (AF3) would help ensure completion of all project activities and achievement of the original development objectives for NGEST. The longer term sustainability of the project outcomes depends to a large extent on the effective operation of the infiltration basins completed under part A to ensure that treated effluent is properly and safely reused for groundwater recharge and irrigation as planned. This will depend on completion and sustainable operation of the wastewater treatment plant, effluent recovery and reuse, and related monitoring systems under Part B, which would be financed by the proposed third additional financing grant.

19. The principal outcome of the additional financing will be timely completion of Part B of the NGEST project resulting in commissioning of the wastewater treatment plant and operation of the facilities by the CMWU as well as completion of the effluent recovery and reuse scheme and related monitoring systems. The financing will also ensure the long term sustainability of the facilities and achievement of the project's second Development Objective by investing in institutional capacity building and supporting operation and maintenance costs for a limited period of time.

20. There are no new activities or changes to the original project objectives, design and components envisaged under AF3. The PDO continue to be strategically aligned with the current ISN for Gaza and the West Bank. The Results Framework for the Additional Financing is summarized in Annex 1.

21. The additional financing will be implemented using the same institutional framework, procurement, and disbursement arrangements currently employed under the NGEST Project since these systems are performing well, remain appropriate, and have the capacity to absorb the additional funds. The additional financing will be used for the following Part B activities under the original project design:

- a) Completion of phase one of the North Gaza Wastewater Treatment Plant (NGWWTP) with a capacity of 35,000 M3/day, comprising three treatment modules for secondary biological treatment with nitrogen removal, as well as sludge treatment, digestion, electricity generation, dewatering, drying and storage, and effluent recovery and reuse including: (i) implementation of remedial works; (ii) acquisition of equipment and materials; (iii) operation and maintenance of the NGWWTP for

- two years after the commissioning of the wastewater treatment plant, and (iv) provision of the utility services (water supply and electricity) that are required to commission and operate the WWTP; and
- b) Supervision of construction works as described in (a) above and implementation of the environmental monitoring plan for the construction works, including provision of necessary consulting services.

Lessons Learned from Past Operations in the Country/Sector

22. There are only a few wastewater treatment plants currently constructed or operating in the West Bank and Gaza and only one operating wastewater reuse system. Therefore, lessons learned from the design, construction and operation of these facilities is limited. Nevertheless, some lessons have been learned and are reflected in the current design. In the case of the Al Bireh WWTP, the facility was originally designed to function with minimal staff in attendance with the plant generally unattended at nights, and it is functioning satisfactorily. Therefore, the proposed plant will be similarly designed to be manned during the daytime only and with minimal operating staff during night time periods.

23. Another major lesson learned from other water/wastewater projects in the West Bank and Gaza is that there are inadequate numbers of properly trained personnel or institutional arrangements to immediately assume responsibility for management, operation and maintenance of the completed systems.

24. In addition, few municipalities have established tariff structures that are adequate to ensure the financial sustainability of utility services. This project includes financing for technical assistance to strengthen the municipal wastewater utility and its capacity to provide wastewater management services and operate the WWTP, and to cover operation and maintenance costs on a declining basis over the three year period during which a financial sustainability action plan will be implemented.

Safeguard Policies (including public consultation)

25. *Environmental Aspects:* Due to its size and environmental relevance, the NGEST project has been classified as Category A according to the Bank's Operational Policy on Environmental Assessment (Operational Policy 4.01). Therefore, a full Environmental Assessment (EA) was prepared for the project by an independent third party consultant. The EA was disclosed in Country and at the World Bank's Info shop in April 2006.

26. A comprehensive public participation program was conducted during the process of EA preparation. Governmental agencies, NGOs, community representatives, neighboring landowners, and other stakeholders were involved in the process. The consultation process was performed by direct interviews, questionnaires, and public meetings. Most of the environmental issues, including wastewater reuse, sludge reuse, socioeconomics, and aquifer water quality, were discussed in great detail. The results and findings of the EA study were presented through a public hearing workshop that involved the different stakeholders. All relevant comments and concerns were considered during the preparation of the final report.

27. A Supplementary Environmental and Social Impact Assessment (SESIA) was prepared following completion of the detailed design for the effluent recovery and reuse component. The SESIA was reviewed, discussed during public consultations with relevant stakeholders that were as comprehensive as those held for the original EA. The last consultation was held on October 22, 2012. The findings and recommendations were approved by the World Bank per the safeguards policies and the ISDS has been updated.

28. Environmental Management Plans (EMPs) were developed as integral parts of both the original EA and the SESIA. They include mitigation measures, monitoring plans, and capacity building activities. In 2009, a baseline groundwater quality survey was completed to monitor the impacts of the operation of Part A infrastructure on groundwater at Beit Lahiya, and future impacts at the new infiltration ponds.

29. A qualified environmental and social specialist was hired within the PMU and is responsible for supervising the mitigation and monitoring program, and for discussing any issue in coordination with the relevant local governmental entities. The last World Bank mission has rated the environmental safeguards performance as satisfactory in terms of monitoring, mitigation, and reporting.

30. Energy and water supply needs for the operations phase of NGEST may benefit from a supplemental and more reliable supply than is in use for the construction phase of NGEST. Any such provisioning will be considered an associated work to NGEST. At the time at which such details are known, the client will be responsible for preparing the requisite environmental and social safeguards documents to support such interventions.

31. *Social Development Aspects:* While the direct social benefits of the additional financing are self-evident in terms of water resource protection and provision of treated wastewater for irrigation, the project will continue to address the need for ongoing public consultation and information dissemination. Project implementation will therefore include regular communication with all partners to get early warning of any public concerns, and to consider the most effective way to provide accurate public information and maintain public confidence in the work. A Resettlement Action Plan (RAP) has been prepared that identifies the adverse impacts of project activities. These are minimal in scale and the RAP has specific mitigation measures for implementation.

List of Factual Technical Documents

- a) Project Paper
- b) Supplementary Environmental and Social Impact Assessment
- c) Resettlement Action Plan

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