



## Northern Gaza Emergency Sewage Treatment (NGEST) Project (P074595)

MIDDLE EAST AND NORTH AFRICA | West Bank and Gaza | Water Global Practice |  
Special Financing | Emergency Recovery Loan | FY 2005 | Seq No: 26 | ARCHIVED on 24-May-2016 | ISR23293 |

Implementing Agencies:

## Key Dates

## Key Project Dates

Bank Approval Date:07-Sep-2004

Effectiveness Date:17-Nov-2004

Planned Mid Term Review Date:17-Nov-2006

Actual Mid-Term Review Date:29-Nov-2006

Original Closing Date:31-Dec-2017

Revised Closing Date:31-Dec-2017

## Project Development Objectives

Project Development Objective (from Project Appraisal Document)

The project objectives are to: (i) mitigate the immediate gathering health and environmental safety threats to the communities surrounding the effluent lake at BLWTP; and (ii) Provide a satisfactory long-term solution to the treatment of wastewater for the Northern Government in Gaza.

Has the Project Development Objective been changed since Board Approval of the Project Objective?

No

## Components

Name

EFFLUENT TRANSFER:(Cost \$21.46 M)

TECHNICAL ASSISTANCE TO EFFLUENT TRANSFER COMPONENT:(Cost \$3.37 M)

CONSTRUCTION OF TREATMENT PLANT:(Cost \$45.98 M)

TECHNICAL ASSISTANCE TO CONSTRUCTION OF TREATMENT PLANT:(Cost \$3.71 M)

## Overall Ratings

Name	Previous Rating	Current Rating
Progress towards achievement of PDO	● Moderately Unsatisfactory	● Unsatisfactory
Overall Implementation Progress (IP)	● Moderately Unsatisfactory	● Unsatisfactory
Overall Risk Rating	● High	● High



## Implementation Status and Key Decisions

NGEST was originally prepared as an emergency response to health and flood risks associated with a 1.5 million CM lake of untreated wastewater, which had formed over an area of 300 dunum (30 ha) north of Beit Lahia as a result of prohibitions to discharge the wastewater to the sea and the lack of an adequate wastewater treatment plant (WWTP). The untreated wastewater seeped into the groundwater and served as a breeding ground for water-borne diseases. Tragically, breach of sand embankments containing the lake had occurred on three occasions in the period 1989-2007, flooding houses in areas of Beit Lahia and causing multiple casualties through drowning in the raw sewage. The NGEST project, approved in 2004, has the objectives to: (i) mitigate the immediate gathering health and environmental safety threats to the communities surrounding the effluent lake at Beit Lahia; and (ii) Provide a satisfactory long-term solution to the treatment of wastewater for the Northern Government in Gaza. Under this project, the health and flood problems are addressed through construction of an integrated wastewater treatment recovery and reuse scheme. This scheme consists of the following elements: (i) construction of a pumping station and evacuation of the raw sewage lake to a new NGEST site; (ii) a wastewater treatment plant with a capacity of 35,000 CM/day; (iii) aquifer recharge with the treated wastewater through 8 ha of infiltration basins; (iv) recovery of the recharged aquifer through a series of recovery wells; and (v) reuse of the, by now, highly treated effluent, in irrigated agriculture. In the first stage, the recovery and reuse scheme would have a capacity for an irrigation command area of around 500 ha, and the recovery and reuse scheme would have a capacity of around 1500 ha. Also, as NGEST is built in a modular design, so modules can be added and the capacity increased to 69,000 CM/day.

The project is currently not satisfactory, since works at the wastewater treatment plant have been halted now since 1.5 years. As a result an effluent lake that was drained initially and no longer formed a threat to communities in Beit Lahia is currently forming again, as the WWTP is not operational, the infiltration basins have become clogged by years of infiltrating untreated wastewater, and the excess effluent is transferred again to the area north of Beit Lahia. Also, there is currently no financing available to for constructing all the required facilities and arrangements for sustainable operation and maintenance of the plant have not been made.

The main reason for not achieving the PDO, and even reversing on some of the outcome indicators (evacuation of the sewage from Beit Lahia) that had been previously achieved, is that NGEST took significantly longer than originally anticipated to complete, primarily as a result of external factors. (i) restrictions on the entry of critical construction materials and equipment; (ii) hostilities resulting in suspended works and damages to already completed infrastructure; and (iii) insolvency of the international partner in the Joint Venture (JV) for construction and commissioning of the WWTP, leading to cancellation of the contract with the international partner and temporary suspension of the work. The delays also triggered costs exceeding appraisal estimates, and several tranches of additional financing have been added to the original project to cover these cost overruns, but still a significant sum of is required to finance essential outstanding activities and address additional issues which have arisen due to the clogging of the infiltration basins and the re-disposal of effluent in Beit Lahia.

The relevant Palestinian agencies in cooperation with the international partners are working on resolving these issues.



## Risks

### Systematic Operations Risk-rating Tool

Risk Category	Rating at Approval	Previous Rating	Current Rating
Political and Governance	--	● High	● High
Macroeconomic	--	● High	● High
Sector Strategies and Policies	--	● Moderate	● Substantial
Technical Design of Project or Program	--	● Moderate	● Substantial
Institutional Capacity for Implementation and Sustainability	--	● Substantial	● High
Fiduciary	--	● Low	● Low
Environment and Social	--	● Moderate	● High
Stakeholders	--	● Low	● High
Other	--	--	● High
Overall	--	● High	● High

## Results

### Project Development Objective Indicators

- Effluent lake is drained and no longer a threat to the surrounding communities at Beit-Lahia WWTP (Yes/No, Custom)

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	N	Y	N	Y
Date	29-Oct-2004	02-Apr-2015	17-May-2016	06-Nov-2008

#### Comments

Although initially achieved, this indicator is currently not fully achieved as effluent again is disposed in the north Beit Lahia area.

- Wastewater collected and treated in accordance with Palestinian environmental standards suitable for groundwater infiltration and reuse (M3/day) (Number, Custom)

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.00	0.00	0.00	25000.00
Date	17-Mar-2014	17-Dec-2015	17-May-2016	31-Dec-2017



► Less than 5% increase in salinity and nitrate levels at monitoring wells within project site compared to before commissioning the plant (Yes/No, Custom)

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	N	Y	N	Y
Date	17-Mar-2014	02-Apr-2015	17-May-2016	31-Dec-2017

Comments

Indicator is related to plant commission, and plant is not commissioned yet.

► Maintenance and operational costs of the NGWTP fully financed by PWA, Ministry of Local Government and Municipalities (Yes/No, Custom)

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	N	N	N	Y
Date	17-Mar-2014	02-Apr-2015	17-May-2016	31-Dec-2017

Comments

It is highly unlikely that this indicator will be met by project closing, and therefore it will need to be restructured.

► CMWU manages plant so that effluent standards are met at all times (Yes/No, Custom)

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	N	N	N	Y
Date	17-Mar-2014	17-Dec-2015	17-May-2016	31-Dec-2017

► Direct project beneficiaries (Number, Core)

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	200000.00	520000.00	520000.00	550000.00



Date	17-Mar-2014	17-Dec-2015	17-May-2016	31-Dec-2017
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#### ▲ Female beneficiaries (Percentage, Core Supplement)

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	50.00	50.00	50.00	50.00

#### Overall Comments

#### Intermediate Results Indicators

##### ▶ EIA, EMP and supplementary ESIA and remedial works studies are completed and their implementation is monitored (Yes/No, Custom)

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	Y	Y	N	Y
Date	29-Oct-2004	17-Dec-2015	17-May-2016	31-Dec-2017

#### Comments

Since effluent again was disposed to Beit Lahia, remedial works will again need to be done.

##### ▶ North Gaza WWTP with a capacity of 35,000 cubic meters per days is constructed and operational (Yes/No, Custom)

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	N	N	N	Y
Date	29-Oct-2004	17-Dec-2015	17-May-2016	31-Dec-2017



► Risk Management Facilities is constructed and operational (Yes/No, Custom)

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	N	N	N	Y
Date	29-Oct-2004	17-Dec-2015	17-May-2016	31-Dec-2017

Comments

Since no financing is available for the risk management facilities (recovery and reuse), it is unlikely that this indicator will be achieved, unless financing is obtained.

► Volume(mass) of BOD pollution load removed by treatment plant under the project (Tones/year, Core)

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	1000.00	0.00	0.00	7000.00
Date	29-Oct-2004	17-Dec-2015	17-May-2016	31-Dec-2017

► One and a half million M3 of effluent drained from the lake to the proposed NGWTP site (Yes/No, Custom)

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	N	Y	Y	Y
Date	29-Sep-2004	17-Dec-2015	17-May-2016	31-Dec-2017

Comments

The wastewater was evacuated, but currently wastewater again is disposed in Beit Lahia.

► Wastewater pipeline installed (8 km), terminal pump station and infiltration basins are constructed (Yes/No, Custom)

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	N	Y	Y	Y
Date	30-Sep-2010	17-Dec-2015	17-May-2016	31-Dec-2017



► Operation and maintenance of the infiltration basins are adequately supervised (Yes/No, Custom)

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	N	Y	N	Y
Date	17-Mar-2014	17-Dec-2015	17-May-2016	31-Dec-2017

Comments

The infiltration basins became clogged and need to be rehabilitated. The PWA is preparing a TOR for this feasibility study.

► The NGWWTP is operated and maintained according to industry standards (Yes/No, Custom)

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	N	N	N	Y
Date	17-Mar-2014	17-Dec-2015	17-May-2016	31-Dec-2017

► Remedial works are completed (Yes/No, Custom)

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	N	Y	N	Y
Date	17-Mar-2014	17-Dec-2015	17-May-2016	31-Dec-2017

Comments

Remedial works were completed, but more remedial works are now required since effluent again was disposed in Beit Lahia.

► Identified packages are tendered and completed satisfactorily in accordance with the project plan (Yes/No, Custom)

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	Y	Y	Y	Y
Date	31-Dec-2013	17-Dec-2015	17-May-2016	31-Dec-2017



## ▶ A construction manager to supervise the NGWWTP civil works is hired and adequately supervises the work (Yes/No, Custom)

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	N	Y	Y	Y
Date	17-Mar-2014	17-Dec-2015	17-May-2016	31-Dec-2017

## ▶ EA, EMP and supplementary ESIA implementation (for effluent recovery and reuse component) are adequately supervised (Yes/No, Custom)

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	Y	Y	Y	Y
Date	17-Mar-2014	02-Apr-2015	17-May-2016	31-Dec-2017

## ▶ Risk Management Facilities are constructed and operational (Yes/No, Custom)

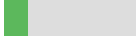

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	N	N	N	Y
Date	30-Sep-2004	17-Dec-2015	17-May-2016	31-Dec-2017

## Comments

Currently no financing is available for fully constructing these facilities.

## Overall Comments

**Data on Financial Performance****Disbursements (by loan)**

Project	Loan/Credit/TF	Status	Currency	Original	Revised	Cancelled	Disbursed	Undisbursed	Disbursed
P074595	TF-16501	Effective	USD	5.00	5.00	0.00	0.90	4.10	 18%
P146065	TF-16844	Effective	USD	3.00	3.00	0.00	0.66	2.34	 22%



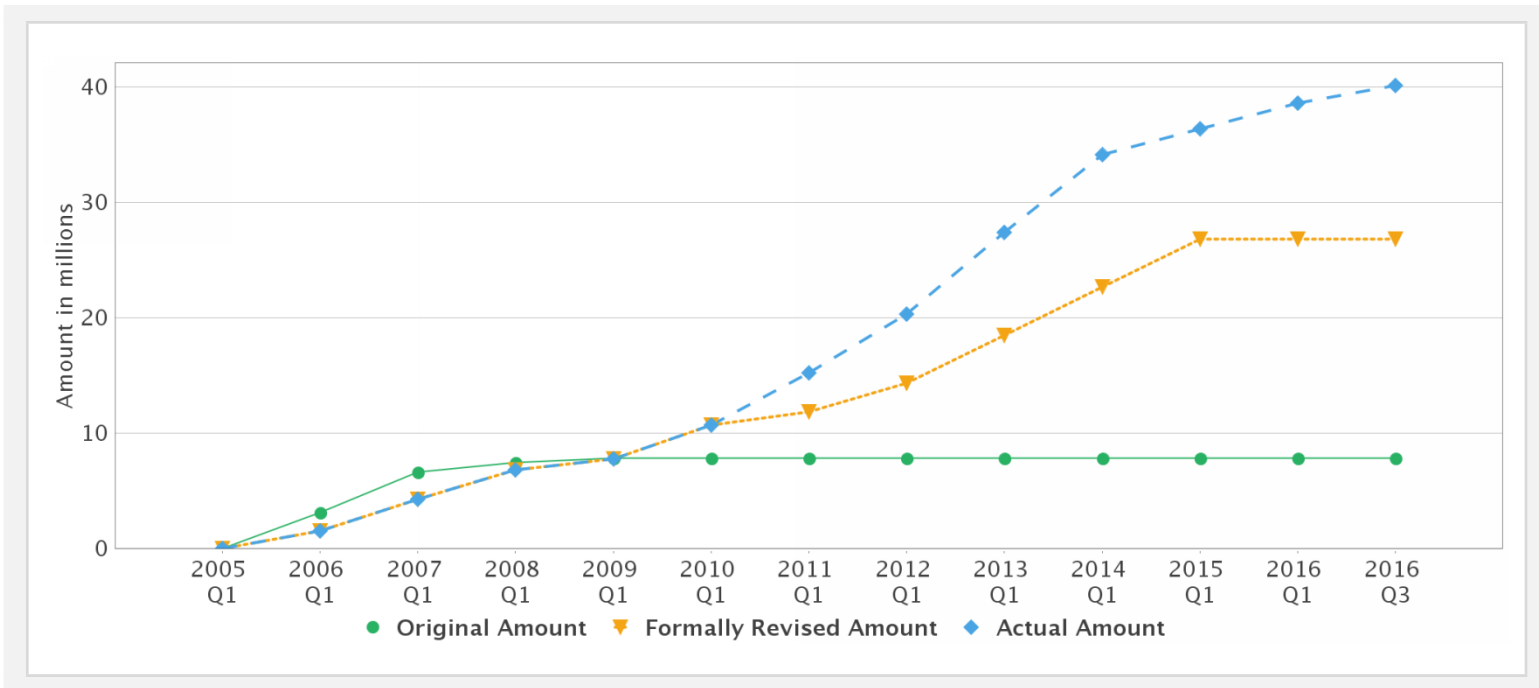


P074595	TF-54208	Closed	USD	7.80	7.80	0.00	7.80	0.00		100%
P074595	TF-56186	Closed	USD	6.85	6.85	0.00	6.42	0.00		94%
P074595	TF-57109	Effective	USD	6.42	6.42	0.00	5.62	1.70		88%
P074595	TF-57595	Closed	USD	6.53	6.53	0.00	7.68	0.00		118%
P074595	TF-92196	Effective	USD	12.00	12.00	0.00	4.42	7.58		37%
P074595	TF-97081	Effective	USD	7.00	7.00	0.00	6.62	0.38		95%

**Key Dates (by loan)**

Project	Loan/Credit/TF	Status	Approval Date	Signing Date	Effectiveness Date	Orig. Closing Date	Rev. Closing Date
P074595	TF-16501	Effective	08-May-2014	08-May-2014	18-Nov-2014	31-Dec-2017	31-Dec-2017
P146065	TF-16844	Effective	17-Jun-2014	17-Jun-2014	01-Oct-2014	31-Dec-2017	31-Dec-2017
P074595	TF-54208	Closed	27-Oct-2004	27-Oct-2004	17-Nov-2004	30-Jun-2010	30-Jun-2014
P074595	TF-56186	Closed	18-Jan-2006	18-Jan-2006	18-Jan-2006	31-Dec-2009	31-Dec-2013
P074595	TF-57109	Effective	02-Oct-2006	02-Oct-2006	02-Oct-2006	31-Dec-2013	31-Dec-2017
P074595	TF-57595	Closed	07-Dec-2006	07-Dec-2006	07-Dec-2006	31-Dec-2009	31-Aug-2015
P074595	TF-92196	Effective	30-Jun-2008	30-Jun-2008	30-Jun-2008	30-Jun-2012	31-Dec-2017
P074595	TF-97081	Effective	25-Oct-2010	25-Oct-2010	10-Nov-2010	30-Jun-2013	31-Dec-2017

**Cumulative Disbursements**



### Restructuring History

Level 1 Approved on 29-Jun-2012 ,Level 2 Approved on 24-Dec-2013

### Related Project(s)

P091314-GZ-NORTH GAZA SEWERAGE TREATMENT PLANT ADDITIONAL FINANCING ,P117446-GZ-North Gaza Emergency Sewage Treatment Project Additional Financing 2 ,P146037-North Gaza Emergency Sewage Treatment (NGEST) Project - Belgian Additional Financing ,P146065-North Gaza Emergency Sewage Treatment Project - Third Additional Financing