



AfDB

Water & Sanitation Department

Sanitation and climate mitigation

Reduction of Greenhouse Gas Emissions Waste Water Treatment Plant Egypt



Durban South Africa
28 November - 9 December
2011

Gabal el Asfar Wastewater Treatment Plant Project Stage II Phase II

The Egyptian government is partnering with the African Development Bank to improve public health and protect the environment by expanding the wastewater treatment capacity of the Gabal el Asfar Wastewater Treatment Plant in Egypt. Located in East Cairo, Gabal el Asfar is the main wastewater treatment plant for greater Cairo, reaching around 8 million people. Phase II of this project entails the construction of the next phase of the Plant's capacity extension meant to provide an additional wastewater treatment capacity of 500,000 m³/d.

One particular aspect of this plant, aside from its contributions to public health and sanitation, is its contribution to tackling climate change through the



reduction of greenhouse gas emissions, typically high at wastewater treatment plants. Methane, a by-product of wastewater treatment, is more than 20 times more effective in trapping heat in the atmosphere than carbon dioxide. Rather than being released into the environment where it would contribute to climate change, the methane gas will be captured and used to supply about 60-70 percent of the plant's energy requirements.

The extension will bring the total treatment capacity at Gabal El Asfar plant to 2.50 M m³/d that will serve about 2.5 million more people, a necessary upgrade of Cairo's sewage treatment master plan, originally designed in 1978 for a population of 20 million people living in an area of over 1100 km². Ca-

capacity building is also to be provided within the responsible institutions to operate the plant as well as to fulfill their socio-environmental responsibilities, for example the promotion sanitation and hygiene.

The project is expected to solve the issue of wastewater discharge into irrigation and drainage canals, polluting Egypt's limited water resources, the Nile and Lake Manzala, and creating an environment where water-borne diseases flourish.

Executed by the Construction Authority for Potable Water and Wastewater, the project launched in 2009 is expected to be completed by 2014. The total cost of Stage II Phase II of GAWWTP is estimated at Euro 233.5 million. The project will be jointly financed by the African Development Bank – 23 percent from the Agence française de développement, and 21 percent from the African Development Fund- and the Government of the Arab Republic of Egypt, which will cover 55 percent.



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Flood management and climate adaptation

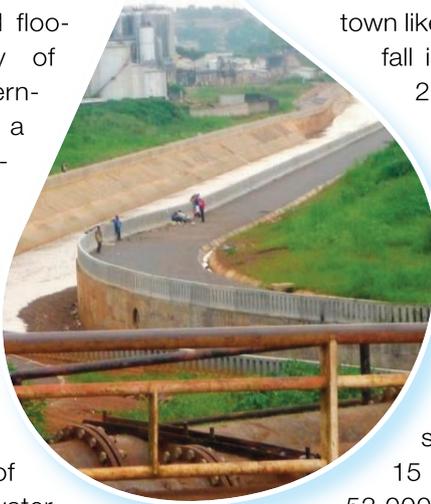
Controlled flooding Yaounde Cameroon

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In order to control increasing and repeated flooding in the city of Yaoundé, the Government prepared a Yaoundé City Sanitation Master Plan, which was financed by the AfDB and completed in July 1996. It served as the basis for preparing a project to conduct works on the emergency phase of Yaoundé City Rainwater Drainage, which mainly comprises the re-calibration of the Mfoundi and the cleaning of the collectors.

The overall objective of the Yaoundé Sanitation Project is to contribute to health and poverty reduction in the urban areas, by adapting the drainage system to unfavorable and worsening climate conditions causing the flooding. Its specific goals are to help limit the effects of floods that disrupt the city's socio-economic activities and more so of the poor squatter areas that cover about 62.4 percent of the area of Yaoundé City.



The lack of rainwater drainage in a town like Yaoundé, where rainfall is considerable, nearly 2000 mm a year, has far-reaching impacts on the population. The main rainwater drainage systems are regularly blocked by all types of solid waste. As a result, during the rainy season floods, estimated at 15 to 20 per year, about 53,000 people are regularly flooded and an additional 243,000 persons occasionally. Dwellers sometimes move away temporarily or continue to live in the humid, filthy and unhygienic surroundings.

In addition to the discomfort caused by these floods, their effects on health, the environment and the economy are significant. Floods cause latrines to overflow, polluting drinking water wells that become breeding sites for larvae form and waste carried by the rain water, subsequently increasing the spread of waterborne diseases. They also pol-

lute the water treatment station of Akomnyanda, which supplies the town of Yaoundé with drinking water. Furthermore, floods cause the destruction of houses and businesses as well as loss of incomes for traders.

The project will have a direct and immediate impact on poverty reduction by improving the health of the people, creating about 1350 direct jobs and 2350 indirect jobs during the 4-year implementation phase and reducing the unemployment rate, especially among youths. The actions planned within the project context will also bring about increased empowerment of the most vulnerable population groups, including women and youths, a better organization of urban communities as well as the promotion of small operators such as jobbers, craftsmen, day laborers, SMEs and NGOs.

Increasing the performance of the drainage system constitute Yaoundé's response to a changing climate, through preventive, far-sighted planning.

The AfDB contributed about 40 million USD to this project.