

## CLIMATE CHANGE SUCCESS STORIES

### ADAPTING YAOUNDE'S DRAINAGE SYSTEM TO IMPROVE CLIMATE RESILIENCE, HEALTH AND CREATE JOBS

#### PROJECT SNAPSHOT

**Country:** Cameroon

**Sector:** Water and sanitation

**AfDB and related financing:**

ADF grant USD 36.4 million (Phase I); ADF loan USD 30 million

GEF grant of USD 4 million (Phase II)

**Outputs:**

- Construction of a 3.5 kilometre canal on the Mfoundi river bed (Phase 1)
- Construction of a 6-km long drainage canal along the Mfoundi river's main bed, two towpaths and crossings, four 8-km long drainage canals along the tributaries (Phase 2 expected output)
- Domestic waste sludge disposal and treatment plant, landscaping around the main canal, enhancing vector control capacity of area health centers, capacity building for the Yaoundé City Council and seven District councils. (Phase 2 expected output)

**Impacts:**

- Reduction in annual frequency of floods caused by the Mfoundi from 15 to three times between 2006 and 2011 (Phase 1)
- Reduction in prevalence of water-borne diseases caused by frequent floods (malaria, typhoid and diarrhea) by 47%, 47% and 36%, respectively, during the period 2007-2011 (Phase 1)
- Decrease in prevalence of waterborne diseases in proportions estimated as follows: from 11.84% to 5% for malaria; from 2.7% to 1.05% for diarrhea; from 3.06% to 0.5% for typhoid fever (Phase 2 expected impact)
- Creation of almost 2,500 jobs (2,130 temporary and 370 long-term jobs) (Phase 2 expected impact)
- One section of the Mfoundi River Canal, before in 2009 and after completion in 2010

#### Situation

Today, nearly 2.5 million of the country's 23 million inhabitants reside in the Cameroonian capital of Yaoundé – over 60% of which is covered by low income settlement housing. The Mfoundi Canal, the city's main drainage system, has with time become a receptacle for household refuse, industrial waste, domestic and industrial sewage and excreta from uncontrolled housing areas. This waste accumulates at the top end of the underground canals and its effluents, obstructing the normal flow of runoff water.

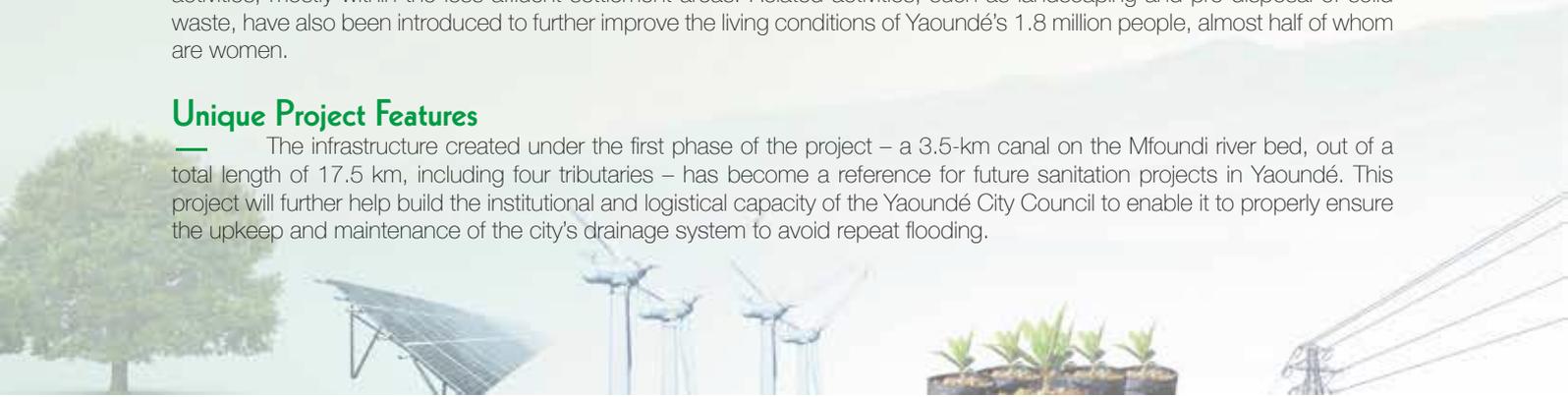
As a result, the nearly 2,000 millimetres of water which falls annually during the rainy season causes severe flooding, leading to loss in income-generating activities, the destruction of homes and businesses, an increase in waterborne diseases, and environmental degradation such as soil erosion.

#### Objectives

Since 2005, the AfDB, in partnership with the Government of Cameroon, the French Agency for Development and the Global Environment Facility, has been working to limit the effects of floods that disrupt the capital's socio-economic activities, mostly within the less-affluent settlement areas. Related activities, such as landscaping and pre-disposal of solid waste, have also been introduced to further improve the living conditions of Yaoundé's 1.8 million people, almost half of whom are women.

#### Unique Project Features

The infrastructure created under the first phase of the project – a 3.5-km canal on the Mfoundi river bed, out of a total length of 17.5 km, including four tributaries – has become a reference for future sanitation projects in Yaoundé. This project will further help build the institutional and logistical capacity of the Yaoundé City Council to enable it to properly ensure the upkeep and maintenance of the city's drainage system to avoid repeat flooding.



## Lessons learned

Four major lessons were learned following completion of the first phase of the project, which were in turn taken into consideration during phase two of the project.

First, enhancing public awareness in addition to the capacity of various stakeholders was critical to the success of the first phase to halt the significant quantities of waste and debris, which were being transported by stormwater drainage channels due to flooding and poor waste management practices. Raising public awareness on solid waste management and neighbourhood association intervention in sanitation and solid waste pre-collection reduced the dumping of waste in stormwater drainage channels, and thus improve water quality Mfoundi and its tributaries.

Second, implementation of a solid waste collection strategy is indispensable to the realization of a sanitation master plan. Failure to update a stormwater component, for example, is likely to result in suboptimal success of such a master plan and dampen the vision of the sanitation subsector.

Project quality at project inception is also key because without investigations into local company capacities some activities like paved walking trails, planted trees, and landscaped gardens become difficult to implement.

Lastly, it is imperative to build the capacity of project implementing structures, especially those related to procurement. If this is not done, the project implementation schedule will not be respected because of delays in procurements activities.

## Testimonials

“At the beginning of the '90s, we began to witness the flooding phenomena from the overflow of the Mfoundi. During every rain, our houses were flooded with rainwater. We suffered for years from the floods which destroyed our houses, took human lives, and attracted snakes and insects. ... Today, since project completion, the dream has become a reality. The floods, the unpleasant environment, all has been forgotten.”

**Ayissi Ntsama Jean Baptiste, A traditional chief**

“Before the works, Yaoundé resembled an abandoned village. The city was dirty, muddy and had a foul odor and many traffic jams from the floods. Afterwards, the city is cleaner, welcoming, and there was less flooding allowing the improvement of businesses along the river Mfoundi, and less traffic.”

**Djouonkou Sime, Yaoundé businessperson**

“It is undeniable that before the work ... the zone downstream of the Mfoundi was constantly flooded during the rainy season, and spit out snakes, lizards and many insects largely invisible to the detriment of residents' health. Today, the work of PADY positively transformed the zone allowing the smooth flow of river water ... allowing clean and proper urbanization in a modern environment. In addition, the canal bridges and roads allow for proper movement of goods and people.”

**Amba Atangana Joseph Gerard, landowner on the river**

“Before the project, every time we had moderate to heavy rain, the roundabout at the Central Post Office and elsewhere in the neighborhood flooded. A lot of garbage also flowed down the rivers. After the project, there is almost no flooding at the roundabout, however the surrounding neighborhoods still experiences flooding, albeit a bit less. Garbage flows less down the river, however trash still continues to float down the canal... Many expectations for PADY2.”

**Secretary General, Yaoundé Town Hall, Roger Etoua Eve'E**

### Technical contact

Amadou Mbaye EL HADJI, AfDB Principal Water and Sanitation Engineer,  
e.mbaye@afdb.org

### Communication Contact

Penelope PONTET DE FOUQUIERES, AfDB Energy, Environment and Climate Change Department,  
p.pontetdefouquieres@afdb.org