

# Project to Improve Facilities for Rainwater Drainage in Cotonou



Project Sites Cotonou

## 1. Background of Project

Cotonou, the largest city in Benin, is the economic and commercial center of the country; however, as urbanization is rapidly progressing, the maintenance of the infrastructure that is necessary for civic life is delayed remarkably. In particular, the rainwater drainage facilities of this city have degraded considerably, and accumulations of soil and garbage are hindering the water flow. As a result, in the rainy season, rainwater overflows everywhere including the central part of the city. The daily life and the traffic of the citizens are interfered, and the environmental hygiene of the city is worsened significantly. Furthermore, malaria-carrying mosquitoes breed in the stagnant rainwater, negatively affecting people's health.

In order to improve such conditions, the Government of Benin decided upon a plan for repairing of the rainwater drainage facilities for two areas, Area A and Area B, in which floods occur frequently, and requested Grant Aid from Japan for the expansion and repairs to the drainage network, and procurement of equipment.

## 2. Project Overview

### (1) Period of Cooperation

FY1997 – FY1999

### (2) Type of Cooperation

Grant Aid

### (3) Partner Country's Implementing Organization

Bureau of City Planning and Sanitation, Ministry of Environment, Housing and City Planning

### (4) Narrative Summary

#### 1) Overall Goal

- Flood damage is reduced in the targeted areas.
- The city sanitation condition of the targeted areas is improved.

#### 2) Project Purpose

Rainwater comes to be drained rapidly in the two areas of Cotonou.

### 3) Outputs

- Rainwater drainage facilities are repaired or established (the first, second drainage ditch, a drainage ditch crossing road, and a roadway, sidewalk).
- Equipment for the improvement and establishment of the rainwater drainage facilities is provided.

### 4) Inputs

#### Japanese Side

Grant	1,886 million yen (E/N amount)
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#### Beninese Side

Transfer of the building of the facilities construction ground.

## 3. Members of Evaluation Team

### Team Leader:

Yoshiki OMURA, Senior Advisor, JICA

### Administration Investigation:

Tsutomu SUZUKI, Project Monitoring and Coordination Division, Grant Aid Management Department, JICA

### Facilities Condition Investigation:

Toru TAKAGI, Japan International Cooperation System

### Interpreter:

Masao MATSUBARA, Japan International Cooperation Center

## 4. Period of Evaluation

10 June 2000 – 21 June 2000

## 5. Results of Evaluation

### (1) Relevance

The Government of Benin places high priority on the improvement of rainwater drainage facilities and have been receiving assistance from other donors such as the

World Bank. The basic design study estimated rainwater overflow will be prevented by the execution of the project, as well as the occurrence of malaria caused by stagnant water in the drains. Approximately 20,000 people would benefit from such conditions. The sanitary condition of the area will be remarkably improved; the relevance of this project is recognized.

## (2) Effectiveness

The constructed facilities function properly, and swift drainage of the rainwater became possible. Every year, the inundations, which occurred in the rainy season, used to be 1m at maximum; however, it is now improved to the level of 10cm. The rainwater overflow used to continue for 2-3 weeks; it is now drained within several hours. As for the area in which the part of the flow of the first drainage way was poor, a new bypass drainage way was built. As a result of these improvements, the overflow of rainwater from the drainage ditch disappeared, even at the time of the rain, which is confirmed from interviews with residents of the area.

## (3) Efficiency

The construction was done smoothly and completed earlier than planned. The procurement and custom clearance of the equipment was carried out efficiently with delivery without delay within the term of the contract.

## (4) Impact

Prior to this project, flood damages occurred every rainy season. However, after the project, flood damages decreased, which made a great difference to life in local areas. The completion of the drainage supported the policy of the government to improve the urban environment, and it also revitalized the implementing organization. The impact of the activities as a result of the cooperation between the public and the private sectors is positively evaluated.

Regarding the occurrence of malaria, although impossible to confirm statistically, it has definitely decreased according to a report by MEHU.

## (5) Sustainability

In January 2000, the jurisdiction of operation and maintenance of the drainage ditch was transferred from MEHU to the City of Cotonou. In Cotonou, as a part of operation and maintenance, a private company is entrusted with dredging of the sand and mud at the bottom of the drainage twice a year. Also, cleaning around the drainage ditch is conducted and illegal disposal of garbage is controlled by a contracted private management company. As a result of campaign for the citizens of Cotonou through television, radio, area meetings, schools and NGOs, the citizens clean the drainage way voluntarily twice a month. From above, the operation and maintenance of the drainage ditch has been smoothly carried out.



Drainage ditch

## 6. Lessons Learned and Recommendations

### (1) Lessons Learned

Under the Grant Aid scheme, at the time of equipment delivery, guidance on the initial operation is given only in a short time. The counterpart, however, sometimes has difficulty in learning how to use it completely. If improper operation and insufficient maintenance continue, the operating rate and the life of the equipment will be greatly affected. Using soft-components in order to enable the counterpart to learn how to manipulate the equipment completely is one of the ways of enhancing the effects of the project.

Regarding the equipment manuals, all manuals except for one, were written in English, and it can be said the consideration was insufficient for Benin, which is in a French-speaking country. When a similar project is executed in the future, this point must be improved.

### (2) Recommendations

The project can be broadly divided into the construction of new facilities and the rehabilitation of existing ones, and the rehabilitation areas are largely deteriorated and immediate repair is needed. Currently, the City of Cotonou is checking the deterioration and the parts requiring repair, and preparation for the repair is in progress.

Moreover, the existing drainage ditches that branch off near the ward office of Area B, are not cleaned, and therefore water do not drain smoothly. At the same point, although a new drainage ditch was built by the project, in order to raise the efficiency of the drainage system, and also for reasons of sanitation, cleaning of the existent drainage way is necessary<sup>1)</sup>, and the improvement of the situation with the cooperation between the City of Cotonou and MEHU is required.

<sup>1)</sup> JICA local office confirmed in 2002 that the Benin side has been repairing and cleaning the drainage ditch.