

**Burkina Faso: Water Supply Bobo-Dioulasso**

**Ex-post evaluation**

<b>OECD sector</b>	<b>14012 / Social Infrastructure</b>	
<b>BMZ project ID</b>	1995 65 765 1995 70 433 (complementary measure)	
<b>Project-executing agency</b>	Office national de l'eau et de l'assainissement (ONEA)	
<b>Consultant</b>	IGIP	
<b>Year of ex-post evaluation</b>	<b>2005</b>	
	<b>Project appraisal (planned)</b>	<b>Ex-post evaluation (actual)</b>
<b>Start of implementation</b>	3rd quarter 1997	1st quarter 1998
<b>Period of implementation</b>	24 months	26 months
<b>Investment costs</b>	EUR 20.80 million	EUR 20.97 million
<b>Counterpart contribution</b>	EUR 0.15 million	EUR 0.31 million
<b>Financing, of which Financial Cooperation (FC) funds</b>	EUR 21.32 million	EUR 20.66 million
<b>Complementary measure</b>	EUR 0.66 million	EUR 0.66 million
<b>Other institutions/donors involved</b>	none	none
<b>Performance rating</b>	1	
• <b>Significance / relevance</b>	2	
• <b>Effectiveness</b>	1	
• <b>Efficiency</b>	1	

**Brief Description, Overall Objective and Programme Objectives with Indicators**

The project comprised the improvement and expansion of the existing centralized water supply systems (water collection, treatment, storage and distribution) and an accompanying sensitisation and hygiene campaign. The project aimed to contribute to reducing the potential health hazard in Bobo Dioulasso (overall objective) by ensuring an adequate water supply for the population through the year 2007 (project objective).

The following indicators were used to measure the achievement of the project objective:

- A supply rate of the urban population of 85% (an additional 100,000 persons) given a standard of 1,000 persons per standpipe and 12-15 persons per yard or house connection.
- Average consumption: 15-20 litres per capital and day at the standpipes and 50 litres per capita and day per house connection
- the water quality corresponds to the WHO standards for developing countries,
- continuity of supply (< 10 hours of downtime per month)

An indicator for the achievement of the overall objective was not defined. It was assumed that the overall objective has been achieved once the project objective was achieved.

The recipient of the financial contribution was the Republic of Burkina Faso, represented by the Ministry of Economics and Finance. The Office National de l'Eau et de l'Assainissement (ONEA) was the project-executing agency. The total investment costs of the project amounted to EUR 20.97 million. EUR 20.66 of this amount was provided from FC funds and EUR 0.31 million were counterpart funds provided by the Burkinabe government. The cost of the complementary measure amounted to EUR 0.66 million and was fully financed through FC.

### **Project Design / Major Deviations from the original Project Planning and their main Causes**

After a complete shift from surface water to groundwater certain changes in the original implementation concept were made with regard to water production. After these changes had been implemented the project comprised the following measures:

- Deepening and expansion of the Nasso I source (production capacity of 1,350 m<sup>3</sup>/h) and equipment with three pumps with a pumping capacity of 700 m<sup>3</sup>/h each
- New construction and equipment of two deep wells with a production capacity of 250 m<sup>3</sup>/h each
- New construction of a water treatment plant with a maximum pure water production capacity of 2,000 m<sup>3</sup> per hour
- New construction of a pure water pumping station with two sets of pumps, which supply the different water tanks (elevated and ground containers) assigned to the pressure zones of the city
- New construction of the BANA interim water tank with a capacity of 3,000 m<sup>3</sup> (elevated above-ground container)
- New construction of the KUA water tower with a capacity of 1,500 m<sup>3</sup>
- Rehabilitation of five existing tanks with a combined storage capacity of 6,000 m<sup>3</sup> (rehabilitation of the building and renewal of the hydraulic system)
- New construction of a pure water pumping station situated next to the BOLOMAKOTE ground tanks
- Complete renewal of the measuring and control technology with remote transmission of all data to the control unit of the waterworks
- New installation of 19.7 km of pressure pipes including equipment to absorb water hammers
- Extension and reinforcement of the mains and distribution network on a total length of 163 km and separation into 5 pressure zones including sewers and control equipment
- Delivery of material for 2,500 new house connections, installation of 66 additional public standpipes and 25 hydrants

As a result of the measures a modernised and extended supply infrastructure has been established, which constitutes the technical prerequisite for a continuous supply of the population with safe drinking water in sufficient quantities. The new conception and design of the measures were appropriate and adequate to solve the existing problems. Due to the large number of refugees from the neighbouring Côte d'Ivoire the population growth in Burkina Faso was higher than had been estimated. Thus, it would have been necessary to step up the

measures in order to achieve the targeted supply rate by the year 2007. The measures can be regarded as sufficient insofar as they have to date ensured the safe supply of the population with water and the shortfall of supply in comparison with the target parameters will be kept low in the next few years. In order to enable all inhabitants to have access to drinking water within acceptable walking distance additional house connections and standpipes were installed in some city districts (complementary measure).

The conception and design of the water treatment plant and the hydraulic components were adequate to answer the existing problems. The operating and control concepts chosen have a high degree of automation and allow an economical operation adjusted exactly to the demand prevailing from time to time. In the initial phase of the project it became obvious that the operating staff was not sufficiently trained to cope adequately with the control and maintenance of the system. For this reason additional training measures were implemented in order to improve the qualification and skills of the operating staff. At present no problems are apparent with regard to the proper operation of the facilities.

### **Key Results of the Impact Analysis and Performance Rating**

Given the supply rate of about 90%, the adequate average consumption, the good water quality and the continuous water supply it can be stated that the project objectives were achieved or even exceeded. Thus, the supply quality of the target group (the population of Bobo-Dioulassos) was substantially improved. The sustained operation of the facilities is ensured technically, financially and in terms of staffing. In view of the high level of achievement of project goals, the intense use of the established capacities, the extremely good outreach to the target groups and the fact that no risks to sustainable operation are to be expected, the programme's effectiveness is very high (sub-rating 1).

The production efficiency was generally very high. The specific costs per inhabitant are very low. The operating costs and the total costs of the Bobo-Dioulasso water supply systems are being covered. Moreover, the Bobo-Dioulasso operating unit produces surpluses every year, which are used for cross-subsidising other loss-making centres and, thus, contribute to maintaining the financial stability of ONEA. Thus, we rate the allocation efficiency as very high. Overall, we classify the project's efficiency as very high (sub-rating: 1).

The project targeted a clear supply bottleneck for the population. An additional 100,000 persons in the project region were connected to the water supply system and, thus, the supply in the region was significantly improved. The project's developmental relevance is thus established. Due to the decline in water-induced diseases the improvement of the health situation is a statistically proven fact. Since no impact analysis was made, however, it can only be assumed that this is also due to the impact of the project and the complementary measure. A negative aspect that has to be mentioned, however, is the fact that no sewage disposal system has been installed up to now and this might be a potential danger to the health of people living next to the sewers. Moreover, this poses a threat to the groundwater in the seeping areas of the sewers. Bearing these negative aspects in mind, the **efficiency of** the project can be classified as satisfactory overall (sub-rating 2).

After considering the above mentioned key criteria, we classify the project overall as having a high degree of developmental effectiveness (rating 1).

### **General Conclusions**

Contractual requirements governing the booking of assets are in principle justified and reasonable. However, as long as such requirements are not tied to "milestones" and/or

sanctions they only have the character of recommendations and their observance cannot be monitored. Due to their far-reaching consequences for the project-executing agency and the necessary related changes in the pertaining legal provisions, requirements of the type mentioned above should not be made at the project level but should be made an issue in the dialogue at the political level and have to be coordinated and agreed with the community of donors.

## Legend

<b>Developmentally successful: Ratings 1 to 3</b>	
<b>Rating 1</b>	<b>Very high or high degree of developmental effectiveness</b>
<b>Rating 2</b>	<b>Satisfactory developmental effectiveness</b>
<b>Rating 3</b>	<b>Overall sufficient degree of developmental effectiveness</b>
<b>Developmental failures: Ratings 4 to 6</b>	
<b>Rating 4</b>	<b>Overall slightly insufficient degree of developmental effectiveness</b>
<b>Rating 5</b>	<b>Clearly insufficient degree of developmental effectiveness</b>
<b>Rating 6</b>	<b>The project is a total failure</b>

## Criteria for the Evaluation of Project Success

The evaluation of the "developmental effectiveness" of a project and its classification during the ex-post evaluation into one of the various levels of success described in more detail below concentrate on the following fundamental questions:

- Are the **project objectives** reached to a sufficient degree (aspect of project **effectiveness**)?
- Does the project generate sufficient **significant developmental effects** (project **relevance** and **significance** measured by the achievement of the overall development-policy objective defined beforehand and its effects in political, institutional, socio-economic and socio-cultural as well as ecological terms)?
- Are the **funds/expenses** that were and are being employed/incurred to reach the objectives **appropriate** and how can the project's microeconomic and macroeconomic impact be measured (aspect of **efficiency** of the project conception)?
- To the extent that undesired **(side) effects** occur, are these tolerable?

We do not treat **sustainability**, a key aspect to consider for project evaluation, as a separate category of evaluation but instead as a cross-cutting element of all four fundamental questions on project success. A project is sustainable if the project-executing agency and/or the target group are able to continue to use the project facilities that have been built for a period of time that is, overall, adequate in economic terms, or to carry on with the project activities on their own and generate positive results after the financial, organisational and/or technical support has come to an end.