

Ex post evaluation – Burkina Faso

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Sector: Water, sanitation and waste water management - large systems (CRS Code 14020)
Programme/Project: Water supply Ouagadougou-Ziga - BMZ No.: 1996 65 779*
Implementing agency: Office national de l'eau et de l'assainissement (ONEA)



Ex post evaluation report: 2016

		Project (Planned)	Project (Actual)
Investment costs (total)	EUR million	174.0	228.2
Counterpart contribution	EUR million	7.4	17.0
Funding	EUR million	166.6	211.2
of which BMZ budget funds	EUR million	19.4	19.4

*) Random sample 2014

Summary: This project comprised parallel financing led by the World Bank Group with twelve international donors, involving the construction of a drinking water dam north-east of Ouagadougou and the expansion of key water supply facilities. German FC largely funded the construction of the long-distance pipeline and used residual funds to finance the expansion of the drinking water supply in poorer urban areas. The dam was funded by a consortium of four donors and preceded the implementation of the other measures (1998-2000). The overall project was carried out with extensive studies and complementary measures, including a comprehensive environmental and social impact assessment, compensatory measures for the resettled population and health measures to avoid an increase in schistosomiasis.

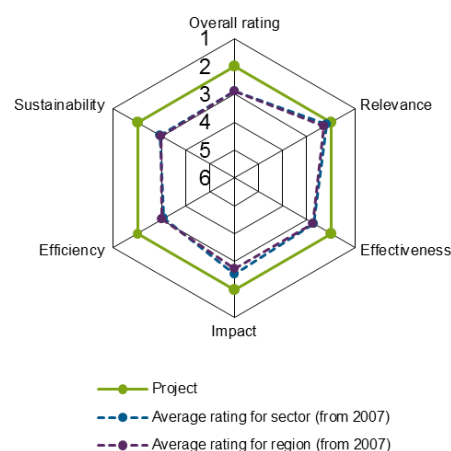
Objectives: The FC measure was designed to help reduce drinking water-related health hazards in Ouagadougou (development objective). The project objective was to give the population of Ouagadougou a continuous and needs-based supply of safe drinking water by raising production, transport and distribution capacities (by 2007).

Target group: The target group was the population of Ouagadougou (roughly 1.6 million people in 2007 and 2.3 million in 2015) and the residents of villages affected by the resettlement (roughly 38,000 people, of which roughly 8,500 were resettled).

Overall rating: 2

Rationale: The project significantly broadened Ouagadougou's capacities for water production, transport and distribution (additional production and distribution of 3,000 m³/h) and improved the supply quality. Among other things, the number of people supplied with clean drinking water doubled to 1.5 million, and today's supply is largely constant. The efficiency of the national water supply company ONEA was raised significantly as well.

Highlights: ./.



Rating according to DAC criteria

Overall rating: 2

Overall context

In an integrated approach, substantial investments were financed, extensive sector reforms were implemented, and the urban water utility company ONEA was strengthened. To reduce the social and environmental risks associated with the construction of the dam, the donor consortium also funded extensive compensatory and complementary measures. A separate project coordination and monitoring structure was created for the large-scale project. The experience gained here has been used in the design of subsequent investments. According to the World Bank's Final Report, the complementary measures were carried out in compliance with the World Bank standards for large-scale projects and dams as applicable at the time. The project is the largest individual investment in Burkina Faso with total costs of EUR 228 million.

The Ziga Dam project component – which was financed by a consortium of four international donors and which had already been implemented before the FC measures – falls into the large dam category, with a volume of about 200 million m³, a dam height of 18 m and a length of around 3 km (dam wall: 50 m).

Relevance

The restricted volume of water available (water production, pumping and distribution) to supply the population of Ouagadougou with safe drinking water (core problem 1) was correctly recognised at the appraisal. The second core problem – insufficient knowledge amongst the population with regard to individual hygiene measures (handling of water, construction of modern toilets) – was also deemed urgent from an ex-post perspective. The project measures offered suitable solutions to these issues.

The strong population growth in Ouagadougou and the influx of new residents have led to a rapid rise in demand for drinking water, with the result that the facilities are overloaded, despite the implementation of additional expansion measures in the meantime. Nevertheless, given the uncertainties that come with estimating population growth, we consider the original design to be sustainable. In addition to the capacity expansion, measures were implemented to increase efficiency in line with the Water Sector Concept of the BMZ; these included measures to reduce water losses and increase the collection rate, for example. Overall, the approach is in line with the sector concept.

The project was a very high priority for the Burkinabe government. The donor coordination was successful overall, but was associated with high transaction costs for the implementing agency, which had to satisfy different reporting requirements.

Relevance rating: 2

Effectiveness

The attainment of the project objectives defined at the project appraisal can be summarised as follows:

Indicator	Status at project appraisal	Objective (planned) in 2007	Ex post evaluation 2015
(1) Population supplied with clean drinking water ¹ .	1999: approximately 703,000 (connection rate: 78.2%).	1.0 million ²	Achieved. Connection rate: 96% ³ (2008); 95% ⁴ (2014) with a total population of approximately 1.6 million residents (2007).
(2) Average consumption from house connections.	35-40 litres (l) per resident (R) per day (d) (l/Rd).	60 l/Rd	Not achieved. 47 l/Rd (2007) 48 l/Rd (2014)
(3) Average consumption from standpipes and autonomous water points.	5-15 l/Rd	20 l/Rd	Achieved. 20-25 l/Rd (2007)
(4) The water quality meets the WHO standards.	This fluctuates from region to region and on a seasonal basis.	The water quality complies with WHO standards at a rate of 96%.	Achieved. Values 2014: physical and chemical: 94.1% bacteriological: 99.9%.
(5) Technical water losses.	12% ⁵	< 20%	Achieved. 18% 2007, 17.5% 2014.
(6) The duration of supply is adequate.	Rationing and frequent outages.	24/7 hours/day water supply.	Achieved. 2007: 24/7 hours/day 2014: 21.6/7 hours/day
(7) No significant increase in water-borne diseases among the population living in the area around the reservoir.	Not relevant		Measures for the prevention of schistosomiasis and for the general expansion of health infrastructure were financed as part of the complementary and compensatory measures.
(8) NEW: water volume produced and prepared (Ziga Dam) for the water supply of the greater Ouagadougou area.	13.7 million m ³ in 1997	24 million m ³ /year	Nearly achieved in 2007 (including a number of maintenance days throughout the year) 2007: 20.5 million m ³ /year, 2011: 26.8 million m ³ /year, 2014: 35.8 million m ³ /year.

1 Assumptions: Max. 10 residents (R)/house and yard connection, 1,000 R/standpipe, and 2,500 R/autonomous water point.

2 Estimated total population of Ouagadougou: around 1.4 million inhabitants in 2006.

3 Assumptions: Max. 10 R/house connection, 300 R/standpipe.

4 Assumptions: Max. 8 R/house connection, 250 R/standpipe.

5 Although the losses were 12% at the appraisal and were thus lower than the target value of 20%, they were expected to increase as a result of the expansion of the supply network and the increase in water pressure in the network.

To the extent that extra water is being brought into the city, the volume of wastewater to be disposed of is also increasing. Part of the newly supplied water went towards replacing consumption at presently contaminated sources. Both decentralised and centralised sewage disposal in Ouagadougou have been expanded as part of the project as well as by follow-up measures implemented by other donors. At just 40%, however, the connection rate for basic sanitation services is still low. Open sewers and the practice of pouring grey water out onto the streets – as is common in most Sub-Saharan African countries – continue to lead to hygiene problems. We do not consider these to be serious, however.

In the course of the dam construction, 8,500 people had to be relocated. Another 1,400 people were affected by the work in the urban area. These people were successfully compensated via compensatory measures. Measures relating to income generation and the provision of infrastructure were implemented for the relocated population, for example. According to the World Bank and the French Agence Française de Développement (AfD), which financed this component, the income generation measures included, among other things, the improvement of rainfed agriculture, the development of irrigated gardens and the introduction of fish farming in the newly-created villages. In addition, the villages were equipped with six new schools, twenty health centres – including monitoring centres for malaria and schistosomiasis – drinking water and sanitation facilities, and rural roads. Income opportunities were also opened up to the other people affected in the urban area. The catalogue of measures was planned and implemented with the full participation of the population.

Effectiveness rating: 2

Efficiency

Average per capita investment costs of around EUR 174 were expected at the project appraisal. In reality, the specific investment costs of the project were lower in relation to the population, and came in at a reasonable EUR 152.

The installed facilities are used at full capacity. In the long term, more remote reservoirs will have to be developed in order to supply Ouagadougou with drinking water. ONEA's water and wastewater infrastructure measures are in line with the extensive urban development of Ouagadougou. The low urban density leads to high development costs, which are not passed on as clear price signals. The spatial development of the city is largely uncontrolled.

The fee for the use of raw water is very low and does not reflect the scarcity of water. This, combined with the low collection rate of the fee for raw water, is inappropriate in a project region where water resources are scarce, and furthermore lead to under-financing of the Agence de Nakambé, which is responsible for integrated water resource management. However, at 48 l/Rd in 2014, per capita consumption is relatively low.

According to the tariff study from 2013, the water fees in Ouagadougou cover costs fully. The water supply and sewage disposal in smaller cities are subsidised using the profits generated by ONEAs in the capital, while large consumers subsidise standpipe customers. This is appropriate taking poverty factors into consideration. The fee system, however, does not provide enough of an incentive to avoid wastewater. The polluter-pays principle is not implemented in a direct and transparent way via wastewater charges.

Efficiency rating: 2

Impact

As far as the health risks for the population living in the catchment area around the dam are concerned, the health measures mentioned above should counteract these. Unfortunately neither the World Bank nor the AfD have collected health data, so it can only be hypothesised that there has been no significant increase in schistosomiasis rates as a result of the expansion of health units and pharmacies.

Data from a national health study suggest that the number of diarrhoeal diseases fell slightly between 1999 and 2010. However, this decline could also be attributed to differences in the survey; as a result, there is insufficient evidence of the project's impact. The last major cholera epidemic in Ouagadougou oc-

curred in 2005, which was after the start of operation of the treatment plant and long-distance pipeline, but before completion of the inner-city distribution plants (2007).

The water quality analyses presented by the implementing agency indicate good water quality for customers with house connections (see section entitled “Effectiveness”). In the case of standpipe customers, improper water transport and storage represents a risk of re-contamination. However, since the residual chlorine content according to ONEA is at a high 1-2.5 mg/l, it can be strongly assumed that the chlorine content is sufficient for transport and storage and that re-contamination will be largely avoided.

Overall, it can be concluded that the project has contributed to the achievement of the development objective of reducing drinking water-related health hazards in Ouagadougou thanks to the significant improvement of the water supply. In addition, the water supply in the capital city is now significantly less affected by droughts.

The project has had a widespread impact because of its large direct target group. Furthermore, extensive sector and implementing agency reforms were initiated in connection with the project. These considerably strengthened the urban water supplier ONEA and also permanently improved its services throughout the country.

The improved water supply is also an important factor for the economic growth of the city, as well as for the growth of Burkina Faso as a whole. The reduction in groundwater extraction at the Nioko and Pissy wells, which were heavily utilised before the project began, helps contribute to resource conservation. However, groundwater extraction is currently being increased temporarily due to the water shortage in Ouagadougou, which reduces this impact. This situation likely cannot be expected to improve until after the plants are put into operation as part of the further expansion in 2017.

Impact rating: 2

Sustainability

Ouagadougou continues to grow rapidly; the water supply capacities were once again inadequate in 2015, and their further expansion is underway. Supply bottlenecks are to be expected – particularly in the dry season – until the new plants are put into operation in 2017.

The country-wide coverage of costs from the implementing agency’s fee revenues was determined in a static calculation: According to the 2014 annual account report, ONEA was able to cover 122% of operating costs (including financing costs) and 91% of total costs. It can be assumed here, however, that ONEA does not account for sufficient depreciation, with the result that the full cost coverage rate is actually lower. ONEA continues to receive state operating subsidies. In addition to this, the international donor community also finances larger investments. The sector reforms targeted, among other things, increasing ONEA’s performance. These reforms have resulted in a high collection rate (over 95%), declining personnel costs and low unaccounted-for water. However, an analysis of the annual accounts shows that the liquidity situation is tense.

ONEA operates the drinking water reservoir within the framework of a 40-year licence, and is responsible for municipal water supply throughout the country. The public’s acceptance of ONEA and the political support for the sector policy have not diminished, even following the change of government in 2014, which saw the dismissal of the government that had been ruling for 27 years. The further political development of the country entails high risks for the progress of sector reforms as well as for ONEA’s performance capacity. ONEA has been a strong implementing agency and partner in several past FC projects.

The operation of the reservoir requires continuous protection against pollution, mainly through the agricultural use of the shore. In the course of the power vacuum caused by the change of government in 2014, land use on the reservoir shore increased. In December 2014, the police intervened to keep the shore free. The responsible water catchment area organisation supports ONEA in protecting drinking water resources.

Sediment flows into the reservoir, where it is silted up. Studies in preparation for the further expansion of water production capacities have detected minor unexpected changes in the reservoir floor after 13 years of operation. Once a year, the water is drained and parts of the reservoir are cleaned.

Sustainability rating:2

Notes on the methods used to evaluate project success (project rating)

Projects (and programmes) are evaluated on a six-point scale, the criteria being **relevance**, **effectiveness**, **efficiency** and **overarching developmental impact**. The ratings are also used to arrive at a **final assessment** of a project's development effectiveness. The scale is as follows:

Level 1	Very good result that clearly exceeds expectations
Level 2	Good result, fully in line with expectations and without any significant shortcomings
Level 3	Satisfactory result – project falls short of expectations but the positive results dominate
Level 4	Unsatisfactory result – significantly below expectations, with negative results dominating despite discernible positive results
Level 5	Clearly inadequate result – despite some positive partial results, the negative results clearly dominate
Level 6	The project has no impact or the situation has actually deteriorated

Rating levels 1-3 denote a positive assessment or successful project, while rating levels 4-6 denote a negative assessment.

Sustainability is evaluated according to the following four-point scale:

Sustainability level 1 (very good sustainability): The development effectiveness of the project (positive to date) is very likely to continue undiminished or even increase.

Sustainability level 2 (good sustainability): The development effectiveness of the project (positive to date) is very likely to decline only minimally but remain positive overall (this is what can normally be expected).

Sustainability level 3 (satisfactory sustainability): The development effectiveness of the project (positive to date) is very likely to decline significantly but remain positive overall. This rating is also assigned if the sustainability of a project is considered inadequate up to the time of the ex post evaluation but is very likely to evolve positively so that the project will ultimately achieve positive development effectiveness.

Sustainability level 4 (inadequate sustainability): The development effectiveness of the project is inadequate up to the time of the ex post evaluation and is very unlikely to improve. This rating is also assigned if the sustainability that has been positively evaluated to date is very likely to deteriorate severely and no longer meet the level 3 criteria.

The **overall rating** on the six-point scale is compiled from a weighting of all five individual criteria as appropriate to the project in question. Rating levels 1-3 of the overall rating denote a “successful” project while rating levels 4-6 denote an “unsuccessful” project. It should be noted that a project can generally be considered developmentally “successful” only if the achievement of the project objective (“effectiveness”), the impact on the development objective (“impact”) **and** the sustainability are rated at least “satisfactory” (level 3).