

**Mali: Water Supply in Rural Towns, 2nd Region**

**Ex-post evaluation**

<b>OECD sector</b>	14030/Water supply and sanitation – small systems	
<b>BMZ project ID</b>	1997 65 264	
<b>Project-executing agency</b>	Direction Nationale de l'Hydraulique, Independent user groups	
<b>Consultant</b>	Gauff Ingenieure	
<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>	4th quarter 1997	4th quarter 1997
<b>Period of implementation</b>	2 years	2.4 years
<b>Investment costs</b>	EUR 4.9 million	EUR 4.6 million
<b>Counterpart contribution</b>	EUR 0.04 million	EUR 0.04 million
<b>Financing, of which Financial Cooperation (FC) funds</b>	EUR 4.6 million	EUR 4.6 million
<b>Other institutions/donors involved</b>	<>	<>
<b>Performance (overall rating)</b>	2	
• <b>Significance/Relevance (subrating)</b>	1	
• <b>Effectiveness (subrating)</b>	2	
• <b>Efficiency (subrating)</b>	2	

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

The project objective was to supply the population at the project locations with enough safe drinking water to meet basic needs all year round via self-administered central systems. The overall objective was improving the conditions of life for the residents of rural towns.

The indicators for project objectives achievement were:

- Mean consumption (related to 100% of the population) amounts to at least 12 l/cd and at least 8 l/cd in the rainy season, within 4 years after start of operation.
- The coverage index (basic drinking water needs via taps) amounts to at least 90% of the population.
- The water provided meets Malian health quality standards.
- Service disruptions are rectified after 5 days at most.
- Collection efficiency is > 85% for tariffs that recover operating costs and replacement investments for system parts with a lifespan of up to 10 years.

## **Conceptual design of project**

The project comprised the expansion of 10 central water supply systems in smaller rural towns in Mali's 2<sup>nd</sup> Region with 2,000 - 10,000 inhabitants. For this, production wells were dug and equipped and water containers, grids, public taps and public and private service connections installed. A complementary measure was also carried out (BMZ No. 1996 70 132) to provide organizational, technical and legal support for the users in setting up and running the self-administered capacities and raising the awareness of the population for the proper use of and payment for safe water.

## **Key Findings of Impact Analysis and Performance Rating**

As to project objectives achievement, 6 out of 10 of the supply systems achieved the anticipated average per capita consumption of 10 l/cd. The projects' outreach encompasses about 68% of the target population. With one exception, the coverage index via taps and household connections ranges between 88% and 100% and has reached the target of 90% in 8 systems. With one exception, the target of limiting downtime to 5 days at most has been met. Although only 1 out of the 10 systems attained a collection efficiency of more than 85%, this does not pose a general liquidity risk for the user group thanks to the ample financial reserves. No regular water analyses are carried out to check health parameters to WHO quality standards. In its project checks, the project executing agency partly measures the chlorine content at the taps, however. Due to the application of chlorine, the water quality at offtake points can be assumed to be relatively hygienic. Due, however, to the sometimes unhygienic drinking water transport and storage, contamination cannot be ruled out completely. Based on the coverage index attained, we nevertheless assess project objectives achievement as altogether satisfactory.

The overall objective of the project was to contribute to improving the conditions of life. As poverty cannot be seen solely as income poverty but also as lack of access to social infrastructure, due to the coverage index achieved, the project has also made a contribution to poverty reduction and to improving the conditions of life, even though this cannot be quantified in a direct way. Cases of diarrhoea amongst children up to 5 years of age (most vulnerable group) are on the decline in rural areas of Mali. Improved access to safe drinking water ought to have made a major contribution to this.

The scheme to shift operational responsibility for water supply systems from central government authorities to autonomous user groups also made an important contribution to achieving the overall objective. State abstention from interfering in operational issues has alleviated the latent conflict usually entailed in relations between government authorities and private user interests, as the users can gear general utility measures, such as water supply in this case, to their immediate needs.

The target group of the projects was the entire population of the towns and their catchment areas. The main target group problems are income poverty and lack of access to economic and social infrastructure.

The supply systems are generally organized as follows: The owner of the facilities is the Republic of Mali, represented by the Ministère des Mines et de l'Energie. These property rights are assigned to the municipalities founded in 1997 on the basis of a list of specifications (Cahier des Charges). This includes the requirement that the municipalities do not operate the water supply on their own but entrust operational responsibility, also for smaller investments, to an operator (déléataire). Sectoral responsibility for handing over management to the déléataire lies with the Direction Nationale de l'Hydraulique (DNH) or its regional offices. This scheme has been implemented in all rural towns. The user groups set up for the tasks of a déléataire, which has a similar legal status to that of a registered society, are effectively responsible for operations. One uncertainty factor on the legal side is that the municipalities have not officially transferred operational responsibility in all cases yet.

The user groups are supported in technical and economic-financial questions by the private enterprise, Groupe de Conseil et de Suivi des Adductions d'Eau Potable (GCSAEP).

This operating plan (cooperation between the private user group and the private enterprise GCSAEP) has proved to be a viable arrangement. Efficient user groups operate at all localities. This is evidenced by the good technical condition of the individual components of the systems, the documented regular daily recording of operating statistics, the ability of individual groups to finance requisite replacement and extension investments on their own, since the tariffs cover operating overheads and part of the full costs in most of the systems, and the adequate collection efficiency.

We have calculated real dynamic prime costs for the individual projects. We found that apart from two sites operating overheads are met. There is a clear trend towards full-cost recovery (> 30%) at 5 sites. The cost recovery requirements of the sectoral policy on watershed management of the Federal Ministry for Economic Cooperation and Development have thus been met. In almost all systems, the requisite future replacement investments can be financed from income. The income situation can be improved still further if for example the public institutions also pay their water bill in full and on time.

The project makes a contribution to improving the conditions of life for about 69,000 people through drinking water supply to local standards up to 2017. The beneficiaries of the projects are the poor sections of the population. The predominant part of the population (more than 50%) in the project regions can be classified as poor. The project has improved the conditions of life for the poor and actively involved them in project implementation and operation. The operating scheme based on autonomous user groups allows the group members to gain experience and competencies in managing infrastructure investments. By shifting responsibility for securing drinking water supply, the projects promote the explicit policy of decentralization and deconcentration of central government purviews. At the same time, the user groups afford women many ways of asserting their interests in water supply. Due the low per capita consumption, there was no need for separate sanitation measures for sewage disposal. There was also no need to gear the project to environmental protection

In summary, the developmental performance of the project is assessed as follows:

- In view of the reasonable specific investment costs, the allocation of funds (production efficiency) can be rated as good. Even through the capacity utilization of the production plants is rather low at present, this situation can change by season in dry periods so that it can be assessed as sufficient altogether. Collection efficiency tends on average for all facilities to be rather low. Only 2 out of the 10 urban supply systems have failed to meet the criterion of operating cost recovery. Apart from these few exceptions, we judge the results of the business calculations as basically positive, since in 5 out of the 10 systems there is a clear trend toward full-cost recovery. Altogether, we assess the results of the microeconomic calculations as largely positive (Subrating for efficiency: 2).
- Project objectives achievement differs in particular for consumption rates in the subsystems, but must be gauged as satisfactory overall. The rather low water consumption from the production plants and the simultaneous use of alternative water resources, whose quality is not monitored, perpetuate health hazards, though to a lesser extent. (Subrating for effectiveness: 2).
- In conjunction with other FC projects, such as the project for water supply in the North, the project has also made a tangible contribution to improving the conditions of life for the poor population. Owing to the successful cooperation between private autonomous user associations with a public utility mandate and a private-sector organisation (GCSAEP) for advice in technical and economic-financial issues, both projects, which also have considerable structural impacts on the water sector

(decentralization, private sponsorship, multiplication effects) can serve as a prototype for other regions. Furthermore, we can infer beneficial health impacts for most of the target group. By virtue of the outstanding capacity-building impacts, we assess the relevance and significance of the projects as good altogether. (Subrating for significance/relevance: 1).

Considering the very pronounced capacity effects, which are crucial for the future organization of the drinking water sector, and weighing up the other partial results as well as the politically manageable risks we attest the projects overall a very high degree of developmental efficacy due to the long-term impacts (Rating 2).

### **Conclusions and recommendations**

The following lessons can be learnt from the project:

- Experience gained with the concurrent use of different water resources of different quality for different water needs indicates that the 'common sense' benchmarks for water consumption (e.g. up to 20 l/cd at taps) need to be subjected to a critical appraisal. Consequently the level of anticipated and hoped-for health impacts in water supply projects must be reappraised and appropriate adjustments made in the sector papers. When resetting benchmarks, consideration should be given to regional experience and sociocultural conditions as well as the intended health impacts.
- A devolution of responsibility for the sustainable operation of investments in social infrastructure from central government institutions to private organisations (user groups) or private enterprises calls for a fundamental substantive realignment of government activities towards creating/strengthening an adequate framework for the private sector. This means that central government institutions should also be consistently involved in measures to support deconcentration.
- The poor payment discipline of public institutions in developing and transition countries is a known risk for operators of infrastructure facilities such as drinking water supply. To limit this risk, we recommend arranging for legally secure and practicable mechanisms for settling receivables of operators from the outset in project design (such as direct remittance of the scheduled budget funds to the operator, legal provisions on shutting down connections).
- With adequate collection efficiency, tariffs that cover far more than the operating costs and a considerable part of the full costs can build up temporary financial reserves. This can have a counterproductive effect on collection efficiency if consumers take it as a pretext for not paying their invoices. It can also tempt political interests to put the available reserves to a different use than originally intended. There are several ways to avoid this kind of thing. The surpluses can be kept as financial reserves for replacement investments, they can be continually invested in system extension or they can be allocated for contracting a private enterprise that guarantees the operational effectiveness of the water supply systems at a contractually agreed standard.

## Key

<b>Developmentally successful: Ratings 1 to 3</b>	
<b>Rating 1</b>	<b>Very high or high degree of developmental efficacy</b>
<b>Rating 2</b>	<b>Satisfactory developmental efficacy</b>
<b>Rating 3</b>	<b>Overall sufficient degree of developmental efficacy</b>
<b>Developmental failures: Ratings 4 to 6</b>	
<b>Rating 4</b>	<b>Overall slightly insufficient degree of developmental efficacy</b>
<b>Rating 5</b>	<b>Clearly insufficient degree of developmental efficacy</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 efficacy" 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.