

Uganda: Water Supply and Sanitation Fort Portal and Kasese

Ex-post evaluation

OECD sector	14030 - Water supply and sanitation – small systems	
BMZ project ID	1988 65 685 Investment 1989 70 394 Complementary measure	
Project-executing agency	<u>For implementation:</u> Directorate of Water Development (DWD) -Ministry of Natural Resources <u>For operation:</u> National Water and Sewerage Corporation (NWSC)	
Consultant	GITEC Consult, Düsseldorf	
Year of ex-post evaluation	2004	
	Project appraisal (planned)	Ex-post evaluation (actual)
Start of implementation	Q 1 1990	Q 2 1991
Period of implementation	approx. 2.5 years	6 years
Investment costs	EUR 6.8 million	EUR 9.9 million
Counterpart contribution	EUR 0.7 million	EUR 0.2 million
Financing, of which Financial Cooperation (FC) funds	EUR 6.1 million	EUR 9.7 million
Other institutions/donors involved	none	none
Performance rating	3	
• Significance / relevance	3	
• Effectiveness	2	
• Efficiency	3	

Brief Description, Overall Objective and Project Purposes with Indicators

According to the project concept which was modified in 1995 (see below) the project comprised the rehabilitation of the water supply in Fort Portal and Kasese and sewage disposal in Fort Portal. The overall objective of the project was to reduce the health risks to which the population was exposed due to water-related diseases. The project objectives were to supply the population of Fort Portal and Kasese with sufficient quantities of hygienically safe drinking water and to improve sewage disposal. The following indicators were to measure the achievement of the project objectives:

- Drinking water supply rate of at least 80% starting from the year 2000,
- Per-capita water consumption: 20 l/cd for standpipes and 50 l/cd for house connections,

- water quality meets WHO standards,
- Continuous supply of water,
- Users accept water meters and pay their bills, proper operation of water supply facilities,
- Sewage disposal in Fort Portal: Adequate treatment of sewage collected in the central sewerage network and by the cesspool cleaners (60 m³/d) and proper operation of the sewage facility.

After the project was redesigned (1995), the target group comprised the population of Fort Portal, amounting to 37,000 inhabitants, and the population of Kasese, which counted 20,000 inhabitants at the time. By 2003 the population had grown to 41,500 in Fort Portal and 54,000 in Kasese. The average family income (an average household counting 5.7 family members) is currently estimated at about 142,000 USH per month (or the equivalent of about 75 USD). In the city centres there is an urban community structure, but the urban peripheral zones of the two cities have a rural character with about three inhabitants per hectare. Consequently, the marginal generation cost of water connections for the inhabitants of the urban peripheral zones is much higher.

Project Design / Principal Deviations from the original Project Planning and their main Causes

At the time of project appraisal in 1989 the initial aim of the project was to improve the water supply and sewage disposal in six cities in western Uganda (Fort Portal, Hoima, Kabale, Kasese, Masindi and Mubende). Due to the war damage it seemed sensible at the time to implement mainly emergency measures and to limit the project exclusively to the rehabilitation of existing facilities without taking into account aspects of sustainability. In light of the stabilization of the political and economic situation in Uganda in the mid 1990s, a new project concept was proposed in 1995 according to which the project was to be limited to Fort Portal and Kasese. The new project concept included the rehabilitation of the rudimentary and completely degraded water supply systems in Fort Portal and Kasese as well as the waste water treatment plant in Fort Portal. When the water supply systems went into operation an information campaign was carried out to inform the population of the advantages of consuming clean water with regard to the prevention of diseases. In the further course of the operation phase the staff of the operating company (NWSC) was trained in the technical operation of the facilities and supported in the improvement of its accounting and billing system. In this connection the introduction of an electronic billing system, which significantly contributed to improving coverage of costs of the water supply systems, was of particular importance.

Key Results of the Impact Analysis and Performance Rating

Achievement of objectives:

In 2003, 60-70% of the total population of Fort Portal and 70-80% of the total population of Kasese, i.e. between 62,000 and 72,000 inhabitants of both cities, were supplied with clean drinking water compared with 20,000 inhabitants altogether in 1995. It is assumed that water consumption will increase by a further 5% p.a. in the future. Average water consumption is 44 l/cd in Fort Portal and 26 l/cd in Kasese. Most private and commercial connections are yard connections which are not only used by the household or enterprise itself but also by the neighbours and other persons who buy the water from the owner of the yard connection similarly as with standpipes. In addition, water is also sold at public standpipes. Per capita consumption of water tends to be higher among persons who are directly supplied via yard connections (about 60 l/cd in Fort Portal and about 45 l/cd in Kasese) than among people who procure their water from standpipes or indirectly via distant yard connections (10-15 l/cd). The latter group of persons generally needs to carry the water a long way in containers. In Fort

Portal about two thirds and in Kasese about 40% of the supplied population have access to an adequate amount of water. The actual rate nearly corresponds to the assumption at the time of project appraisal (50 l/cd). Approximately one third of the population supplied with water in Fort Portal and about 60% of the population supplied with water in Kasese have only limited access to drinking water (10-15 l/cd). Water from NWSC is mainly used for drinking and cooking, while water used for personal hygiene and washing purposes is procured from alternative sources (e.g. dug wells, watercourses, rain water) – in particular by the population supplied via standpipes and indirectly via yard connections.

The quality of the water provided by NWSC is regularly checked and meets WHO standards. So far, the water supply facilities have operated without major disruptions. Water meters have been installed at all connections and water is metered once a month. The collection efficiency (in terms of volume the share of bills paid) is 96% and 97% respectively in Fort Portal and Kasese, which illustrates the good payment morale of the consumers and also the consequent collection system of NWSC. The operation of the water supply and wastewater disposal facilities gives no cause for complaint.

Currently, 60 parcels of land in the densely populated centre of Fort Portal (or 0.2% of the population) are connected to the central sewerage network rehabilitated in the course of the project. The estimated daily amount of waste water of up to 50 m³ (target indicator: 60 m³/d) covers approximately 50% of the capacity of the sewage treatment plant. Latrines are used by about 78% of the population in Fort Portal, but it is likely that the use of latrines is higher in the more densely populated quarters of the city (in urban areas of the central and western region of Uganda more than 95% of people use latrines). Altogether, the population's hygiene awareness and behaviour seem adequate.

Thus the project objectives have been largely reached overall. Disease statistics regarding water-related diseases were available only for Fort Portal. These demonstrate a significant reduction of water-related diseases since 1997. Altogether it is plausible to deduce that the water-related health risks to the population have decreased.

Operation of the water supply systems

Upon completion of the construction work the operation of the water supply facilities was transferred from the project-executing agency (DWD) to NWSC, as planned. At the beginning of the operation phase NWSC had considerable difficulties to recruit suitable staff, but later hired too much personnel in both cities. However, in the following years the operating staff was drastically reduced from respectively 59 and 53 employees at the start of operation to currently 25 in Fort Portal and 20 in Kasese. In the course of an extensive restructuring of the company, Area Performance Contracts were concluded between the management of NWSC and the local managements in both cities from the year 2000 with the aim to improve their performance and efficiency in the long term. These contracts were converted into internal management agreements in 2004 (comparable to profit centres), decision-making competences and responsibility for results being delegated to the local managements which in turn were given clear monetary incentives to achieve the agreed performance goals. Altogether the company culture changed considerably due to a greater sense of ownership among staff, performance-based salaries, less bureaucracy, the simplification and acceleration of organizational procedures, the improvement of communication within the company (own company intranet, employee newsletter: "The Water Herald") and with the public (Internet site: www.nwsc.co.ug) and the improvement of controlling via a management information system.

In both water supply systems operating results have improved remarkably, which is reflected in practically all performance indicators. Since 1998, productivity of staff, measured by the number of staff per 1,000 connections, has increased significantly from 59 to 16 (Fort Portal) and from 56 to 14.5 (Kasese). In the same period water losses decreased from 25% to 11% (Fort Portal) and from 47 to 24% (Kasese). Thanks to the introduction of an electronic billing system and the

networking of data with the head office in Kampala in 2002 within the framework of the complementary measure, it was possible to ensure timely customer accounting and improve collection efficiency from 79% to 96% in Fort Portal and from 93% to 97% in Kasese. After an operating deficit was incurred in the fiscal year 2002/2003, an operating cost recovery rate of about 120% was achieved for the first time in the first quarter of 2004 in both water supply systems. In light of the measures taken to permanently reduce costs and increase revenues through additional water connections we consider that the profitability improvement will be long-lasting.

In summary it can be observed that the share of both water supply systems in the total turnover of NWSC is only 1.8% and that their operating costs are covered. The depreciations of both water supply systems are compensated by the operating surpluses of the overall company. Therefore it seems that the project's sustainability is generally ensured from an economic point of view.

With a specific water consumption of 15 l/cd a household of 6 spends about 7,000 USH per month for water or 5% of its total available monetary and non-monetary revenues (based on the average income of the region). For the absolute poor whose available income is below the average income, expenses for water could reach or exceed the limit of their financial capability.

Overall, we assess the impacts of the project as follows:

- Regarding the supply rate, the project objectives were not fully but still adequately met. It can be assumed that the target indicator (supply rate of 80%) was almost achieved. The aspects of quality and sustainability, which were defined in the further target indicators, (continuity of water supply, water quality, adequate operation and payment morale of the users) are adequately satisfied. They result from the reforms that have been conducted by NWSC in the last 2-3 years. It remains to be seen if the achieved level of quality and sustainability will be maintained in the future. The project objective of improving sewage disposal has also largely been achieved. Given that maintenance work is performed on a regular basis and that the project-executing agency has been economically consolidated we assume that the facilities will operate on a sustainable basis. We classify the project's effectiveness as sufficient (**Partial evaluation: Rating 3**).
- With the provision of drinking water in two cities where the water supply system had been rudimentary before the project, an essential obstacle to development has been eliminated and the health risks have been visibly reduced for the majority of the population. The observed per capital consumption (Fort Portal 44 l/cd, Kasese 26 l/cd) is sufficient to reduce diseases related to the use of water for drinking and cooking (e.g. diarrhoea). As some people still procure the water used for personal hygiene from alternative sources, the resulting water related diseases (such as skin and eye diseases) have only been reduced to some extent by the present project. The population's hygiene awareness, which has increased as a result of numerous information campaigns (of the government and other donors) in this region, has considerably contributed to the achievement of the overall objective. The combination of complementary measures and a cross-project sector reform conducted with the support of GTZ (which was however not a result of this project) have led to considerable efficiency improvements in the pilot regions which serve as examples for the other urban water supply systems. With regard to the coverage of the needs of the target groups and the significant improvement of the performance of the project-executing agency we classify the project's relevance and significance as satisfactory (**Partial evaluation: Rating 2**).

- The dynamic production costs, which amount to the equivalent of 0.60 EUR/m³ and also the operating costs of about 0.45 EUR/m³, are acceptable in international comparison. Specific investment costs are comparatively high, though. We rate the production efficiency as still sufficient. Although local running costs (without administrative costs of the head office) are currently covered by tariff revenues in both water supply systems, the cost coverage rate is only 93% (Fort Portal) and 88% (Kasese) in dynamic terms (that is in the long-term) and taking into account the costs of the head office. However the project-executing agency is willing and able to cover the deficits with the surpluses from other urban water supply systems in the long run. We rate allocation efficiency as adequate. Overall the efficiency of the project is adequate (**Partial evaluation: Rating 3**).

Taking into account the above mentioned partial aspects we rate the effectiveness of the project to be altogether adequate (**Overall rating: Rating 3**).

General Conclusions applicable to other Projects

The marginal production cost of connecting the population of sparsely populated urban peripheral zones to the central water supply is high and the economic result of the whole water supply system is disproportionately burdened as a consequence, in particular due to high depreciation costs. Therefore we recommend assessing, already in the study phase, the possibility of providing decentralized water supply systems (e.g. hand pumps) as an alternative supply concept for sparsely populated urban (peripheral) areas in the future.

Legend

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

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 mentioned above 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.