

**Rwanda: Water Supply in Bugesera-South**

**Ex-post Evaluation Report**

<b>OECD sector</b>	14030/Basic drinking water supply and basic sanitation	
<b>BMZ project number</b>	1989 65 493	
<b>Project executing agency</b>	Direction de l'Eau et de l'Assainissement (DEA) in the Ministère des Terres, de l'Environnement, des Forêts, de l'Eau et des Mines (MINITERE)	
<b>Consultant</b>	PÖYRY Environment GmbH	
<b>Year of ex-post evaluation</b>	<b>2008</b>	
	<b>Project appraisal (planned)</b>	<b>Ex-post evaluation (actual)</b>
<b>Start of implementation</b>	2nd quarter 1989	2nd quarter 1990
<b>Period of implementation</b>	46 months	EUR 96 months
<b>Investment costs</b>	EUR 15.3 million	EUR 14.9 million
<b>Counterpart contribution</b>	EUR 2.3 million	-
<b>Finance, of which FC funds</b>	EUR 13.0 million	EUR 14.9 million
<b>Other institutions/donors involved</b>	-	-
<b>Performance rating</b>	4	
• <b>Significance/Relevance</b>	3	
• <b>Effectiveness</b>	4	
• <b>Efficiency</b>	4	
• <b>Impact</b>	4	
• <b>Sustainability</b>	4	

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

The objective of the project was to supply the rural population living in the municipality of Ngenda in the Bugesera-South region (currently about 108,000 inhabitants) to meet basic needs in hygienically safe drinking water via taps from a central water supply facility. Indicators were the coverage index, continuous water supply, per capita consumption, water quality, changes in water use practices and proper tap operation. The project was intended to make a contribution to improving health by reducing related hazards (overall objective).

The investment measures carried out largely comprised installing an offtake facility, the construction of the requisite pumping, treatment, main and intermediate storage capacities and altogether approx. 150 km of supply pipelines with 67 taps. As part of the complementary measure, awareness campaigns were carried out for the target group and the project executing agency was prepared for future operational tasks. Initial support was also provided for operating the new facilities.

## **Project Design/Major Deviations from Original Planning and Main Causes**

As a result of the civil war, the genocide in 1994 and the ensuing amendment of the sectoral approach by the Rwandan government, the project had to be replanned in terms of scheduled capacities, project attachment to the executing agency and operational organization.

Primarily due to the hostilities and the unexpectedly low population growth, the number of inhabitants in the project region is considerably smaller than initially assumed. As a result, the capacities of the facilities had to be reduced in the course of implementation. Capacity utilization is nevertheless much lower than predicted (only 16%), which has increased specific costs per user. A limited improvement in the situation can be expected through the planned connection of larger parts of Bugesera to the grid.

As a result of the sweeping sectoral reforms carried out after the end of the civil war, the project executing agency changed repeatedly during implementation and was placed under the purview of different ministries.

The operation of the completed water supply facility envisaged at project appraisal could not be organized as intended, either, due to the sectoral reforms. From 1998 to 2007, the operation was carried out after a call to tender for a management contract by suitable commercial service providers. After a transitional phase of direct operation by the project executing agency, another call to tender is now being issued for an operator.

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

Major project objective indicators such as coverage index, water consumption and changed consumer practices were not met. Proper operation, water quality and continuous supply were, however. The overall objective could only be achieved for parts of the target group due to low water use.

Many expectations at project start were not fulfilled due to the social upheavals in the course of the civil war and the genocide. The limited success of the project was due in particular to low water use on account of high water charges. The expensive water rates are due to the high specific costs, due in turn to the smaller number of inhabitants than expected and the low use of drinking water as a result.

The prime risk of the insufficient acceptance of the system and/or the lack of readiness and ability on the part of the users to pay cost-effective water tariffs was already cited at project appraisal but its actual significance, greatly magnified by the political events, was underestimated.

Despite the relatively high water charges, only 30% of the operating costs are currently recovered. Without substantial subsidies for operation, the necessary upkeep measures and reinvestments are unlikely to be carried out and the current satisfactory operation will deteriorate.

The main impact of the project is securing the supply of hygienically safe drinking water for a part of the population in Bugesera-South. The measures in hygiene education contributed to reducing water-induced illnesses for the sections of the population (approx. 60%) served by the project facilities. The state of health of the remaining, poorer part of the population, who cannot afford the drinking water provided, however, has not presumably improved as a result of the project. Women benefit from the project more thanks to smaller fetching distances for drinking water and less nursing care at home.

The project is aligned with Rwanda's development priorities and German-Rwandan cooperation in the sector and complements other donor-financed projects in the region. It addressed a relevant, major supply constraint on the population in the project region. Despite a limited adjustment of the project design, since the end of the civil war it was no longer sufficiently aligned with the participatory, decentralised water supply policy now adopted in Rwanda. Even though more cost-effective water supply alternatives for the population reached and a sufficient quantity of water would also have posed problems, too little attention was paid to the sector policy reform after the end of the civil war. We classify **relevance** as sufficient (Rating 3) altogether.

Major project objective indicators such as coverage index, water consumption and changed consumer practices were not met. The aggregate result is that a large portion of the target group does not use or hardly uses the new water supply facility due to the prohibitive water charges, particularly the poorer part of the population. Despite the technically smooth operation with good water quality and acceptable supply times thanks to operating finance from FC funds up to 2007, the **effectiveness** of the project (measured in terms of the project objective of continuous sufficient drinking water supply to the target group) can therefore only rate as insufficient (Subrating 4).

The investment costs per supplied inhabitant are very high at EUR 230 (or EUR 262 including the complementary measure). Capacity utilization is very low (16%) and operating cost recovery is quite insufficient (30%). The connection of the EU-financed project in Bugesera-North will be able to raise efficiency to a certain extent in the near future. Altogether, we rate **efficiency** as insufficient (Subrating 4).

The **developmental impact** is assessed as insufficient (Subrating 4) since the health of approx. 40% of the target group has not improved due to the project and this applies in particular to the poorer part of the population, who cannot afford to pay for the water supplied. There are indications of certain improvements for the remaining 60%. Since their specific consumption from the new supply system is extremely low, the health impacts can only be limited as a whole.

The financial sustainability of the project is not assured as it depends on significant long-term operating subsidies, which are presently insufficient. We must therefore assume that the good technical operation so far will deteriorate with unforeseen and cost-intensive repairs, which will also jeopardize technical sustainability. The increased capacity utilization of the facilities after the complementary EU-financed measures are put into operation and the resulting slight improvement in the financial position of the executing institution will not be able to solve the sustainability problem. We therefore allot **sustainability** a Subrating of 4.

Weighing up the subratings under the above key categories, we gauge the project's developmental efficacy to be insufficient overall (Rating 4).

## **General Conclusions**

As evident in this project, the ability and willingness of prospective water users to pay rates plays a major role in rural water supply. These aspects ought to be subjected to a critical analysis at project appraisal. This question was examined in detail at project appraisal, but the results were interpreted too positively at ex-post evaluation. In the end, unexpected developments (decline in population and consequent higher specific costs) have aggravated the difficulties. When capacity limits have been exceeded, awareness measures can only make a limited contribution to changing practices in water hygiene.

Where demand is very uncertain, we recommend technically more versatile, modular solutions

that allow for capacity adjustments. This can reduce the fixed cost ratio, which places a heavy burden on households when demand is low.

When the start of implementation is delayed by civil wars or other political upheavals and the attendant crises of legitimacy for state institutions and executing agencies, consideration should generally be given to replanning Financial Cooperation projects to adjust to the new sectoral setup, where this still seems expedient and feasible based on progress to date.