

Ex post evaluation – Kenya

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Sector: 14030, Drinking water, sanitation, sewage/waste
Project: Joint Programme for the Development of the Water Sector
 (A) Phase II, Stage 1, investment – 2006 65 083
 (B) Phase II, Stage 1, accompanying measure – 2006 70 067
 (C) Phase II, Stage 2, investment – 2007 65 149*
 (D) Phase II, Stage 2, accompanying measure – 2007 70 131
Implementing agency: Lake Victoria North Water Services Board



Ex-post evaluation report: 2017

		Projects A and C (Planned)	Projects A and C (Actual)	Projects B and D (Planned)	Projects B and D (Actual)
Investment costs (total)	EUR million	40.46	37.11	1.00	0.94
Counterpart contribution	EUR million	3.00	2.38	0.00	0.00
Financing	EUR million	37.46	34.73	1.00	0.94
of which BMZ budget funds	EUR million	37.46	34.73	1.00	0.94

* Random sample 2016

Summary: The programme was an integrated component of the nationwide reform of the sector, in which numerous donors are involved (including the World Bank, France, Sweden, Denmark). It was implemented as a joint programme with the Reform of the Water Sector Technical Cooperation project along with the Deutscher Entwicklungsdienst (DED) InWEnt (now GIZ). Planned as an open programme, it encompassed a total of three phases, each with its own rehabilitation stage for the water supply (WS) and wastewater disposal (WD) systems at the locations (see below), as well as an expansion phase for need-based expansion of the distribution networks, particularly covering impoverished areas with yard connections and public taps (kiosks). The first stage of the Phase II programme measures included the rehabilitation of the WS/WD systems (waterworks, storage capacities, distribution networks, sewage plants, and so on) in the three towns of Kakamega, Busia and Nambale, as well as supporting the partner in developing a commercial utility company covering these towns. The second stage included the expansion of the selected towns' water distribution and sewage collection networks.

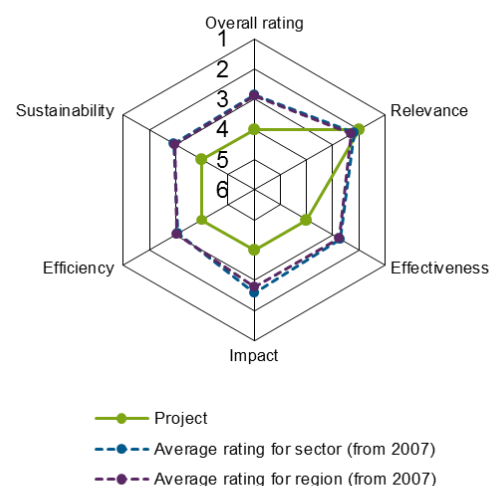
Development objectives: The programme objective was to ensure adequate water supply and wastewater disposal (WS/WD) for the population in 12 towns within the administrative area of the Lake Victoria North Water Services Board (LVNWSB), as the regional water authority. This was intended to contribute to improving the health situation of the residents within the programme area and to economic development (overall objective).

Target group: Approx. 173,000 people lived in the three selected towns for Phase II (Kakamega, Busia, Nambale) in 2005 (273,000 by 2014).

Overall rating: 4 (Stage 1), 4 (Stage 2)

Rationale: The objectives of the projects were largely not achieved. The operator's technical and economic performance capacity is inadequate. The developmental impact of the project has been inadequate as of the evaluation and is very unlikely to improve. From today's perspective, sustainable operation is not guaranteed under the current circumstances.

Highlights: The container volumes that are present and in use limit water production to a level far below the water production capacity limit. This means that the investments in water supply cannot be put to full use, in spite of the significantly higher demand.



Rating according to DAC criteria

Overall rating: 4

General conditions and classification of the project

The measures encompassed the second phase of a programme spanning a total of three phases. Phase II consists of two stages, Stage 1 aiming to rehabilitate and Stage 2 to expand and extend the water and sewage infrastructure. Each stage was complemented by an accompanying measure. The two stages were virtually implemented in parallel; they technically formed one entity and were accordingly managed and run by one operator. The Financial Cooperation (FC) financed both the programme’s initial phases and the study for Phase III. The investment finance for Phase III was provided by the World Bank (currently still being implemented). The two evaluated measures are formally assigned individual ratings based on separate Federal Ministry for Economic Cooperation and Development (BMZ) project numbers. The impacts of Phase I (rehabilitation) cannot be separated from those of Phase II (expansion investments), since both rehabilitation and expansion measures were carried out at all the locations, often at the same time and sometimes within the scope of a single contract. The two measures are therefore given the same rating below.

Relevance

The overall objective of the measure was to contribute to improving the health situation of the population, to economic development and thus ultimately to improving the living conditions of the population in the programme area. The programme objective for the overall programme’s three phases was to ensure adequate, fully hygienic, ecologically and economically viable water supply and sewage disposal for the population in 12 towns within the administrative area of the Lake Victoria North Water Services Board (LVNWSB). In this respect, Phase II covers the three towns of Kakamega, Busia and Nambale. Both the overall objective and the project objective retain their relevance, from today’s perspective.

The target group was the urban population in the towns of Kakamega, Busia and Nambale (2005: 173,000 inhabitants). Since population growth was higher than expected and the supply area for Phase II was extended, the population in the supply area was around 273,000 in 2014, which is around 50,000 more than the 220,000 estimated at the programme appraisal (PA). The measures were fundamentally suited to reducing the health risks stemming from the population’s poor supply and disposal situation. In that sense, the chains of effects are plausible from today’s perspective.

The area of water and sanitation has been and continues to this day to be the key sector for German-Kenyan development cooperation. The programme was a consistent part of this and was coordinated with Technical Cooperation measures and other donors’ measures. It was in accordance with the Kenyan Government’s objectives for the sector.

Relevance rating: 2 (Stage 1), 2 (Stage 2)

Effectiveness

Attainment of the programme objectives for Stages 1 and 2, implicitly along with the overall objective, is to be measured using the following indicators:

Indicator	PA status and target value	Ex-post evaluation
(1) The installed and rehabilitated drinking water production capacities are working at a 100% utilisation level and completely meet the demand of the	PA status: 50% PA target value: 100%*	Kakamega: target value is not reached; the water treatment plant runs at a utilisation level of 70%. Busia: a precise figure for needs being met cannot be provided for

existing water connections.		<p>reasons including rationing and frequent service interruptions (up to a week in length)</p> <p>Nambale: no information (affects only approx. 4% of the target group).</p>
(2) Population's connection rate to drinking water in Phase II programme area	<p>PA status: 54%</p> <p>PA target value: 90%</p>	<p>Target value is not reached</p> <p>Supply area Phase II: 73%</p> <p>Kakamega: 81%</p> <p>Busia: 58%</p> <p>Nambale: 64%</p>
(3) New indicator: population (absolute) in Phase II programme area that the utility supplies with water	<p>Supply area Phase II PA status: 98,000</p> <p>Supply area Phase II PA target value: 200,520</p> <p>Kakamega PA status: 64,000</p> <p>Kakamega PA target value: 110,520</p> <p>Busia PA status: 23,000</p> <p>Busia PA target value: 60,390</p> <p>Nambale PA status: 11,000</p> <p>Nambale target value 26,610</p>	<p>Target value is reached overall</p> <p>Supply area Phase II overall: 200,300</p> <p>Kakamega: 146,933</p> <p>Busia: 45,800</p> <p>Nambale: 7,576</p> <p>(The target in line with the plan, to additionally supply 100,000 people, was met)</p>
(4) Overall losses in the water supply system	<p>PA status: 55-77%</p> <p>PA target value: 30%</p>	<p>Target value is not reached</p> <p>Supply area Phase II: 56%</p> <p>Kakamega: 54%</p> <p>Busia: 66%</p> <p>Nambale: 26%</p>
(5) Coverage rate of households connected to the sewerage system and with disposal via latrines	<p>PA status: N/A</p> <p>PA target value: 75%</p>	<p>Target value cannot be measured</p> <p>Supply area (information for sewerage system only)</p> <p>Phase II: 4%</p> <p>Kakamega: 5%</p> <p>Busia: 3%</p> <p>Nambale: 0%</p>
(6) Collection rate	<p>PA status: 50%</p> <p>PA target value: 90%</p>	<p>Target value is (almost) reached</p> <p>Operator: 83%</p> <p>Supply area Phase II: 91%</p> <p>Kakamega: 86%</p> <p>Busia: 117%</p> <p>Nambale: 84%</p>
(7) Water quality complies with WHO standards	<p>PA status: no</p> <p>PA target value: yes</p>	<p>The results of the water analyses presented confirm broad compliance with the limits (for two chosen parameters)</p>
(8) Coverage of operating	<p>PA status: 50%</p>	<p>Target value is reached, although</p>

costs	PA target value: 100%	the expenses for maintenance are insufficient Supply area Phase II: 119% Kakamega: 201% Busia: 46% Nambale: 57%
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* The target value of a 100% utilisation level is appropriate insofar as a value of 100% corresponds to full utilisation of the **production systems** in the calculation used, taking account of the technically necessary downtime.

The drinking water production capacity can only be partially utilised due to the insufficient storage volumes (elevated reservoirs and/or ground reservoirs) in Kakamega and Busia. In Busia, water is not extracted, treated or pumped into the supply area during the power cuts that often occur and last for several hours. As a result, the customers' demand is not adequately met in the programme area.

The 90% connection rate intended in the programme appraisal has not been achieved (actual value: 73%). This is linked to the underestimated population growth in the programme area, as the originally planned number of residents to be supplied (around 200,000) has been achieved. Around 50% of supplied residents are supplied via service connections, 50% receive their water via water kiosks or shared taps. However, the programme measures could not prevent the target group from still having to meet their needs for water by means of their own temporary storage units, private vendors, surface water or their own wells.

On average, according to official statistics, the share of technically and administratively unaccounted for water (UfW) is 56% and the target value of 30% is only achieved in Nambale.

The intended number of households connected to the sewerage system and with disposal via latrines was 75%. However, no data regarding decentralised sanitation systems were available during the PA, final review and ex-post evaluation. Only 4% of the households in the supply area are connected to a central sewage collection network.

Conflicting data is present for the collection rate. This is 83% based on the operator's audited annual accounts, whereas the data presented by the operator implies this figure to be above 90%. Accordingly, the indicator can be considered to have been achieved.

The two parameters of residual chlorine concentration and fecal coliform germs are relevant in the evaluation of water samples, which were exclusively extracted from the water treatment plants. The analytical records prove general compliance with the WHO-compliant limits (95%). Test results are unavailable for water quality at the level of consumer households.

The objective of covering operating costs is achieved with a coverage rate of 119%. However, the expenses are inadequate for the operation, since the plants are not adequately maintained and the emergency power generators in Busia (pump system) go unused during power cuts to save on operating costs. A range of other units are not used properly, because they are not ready for operation (blower in Busia treatment) or in order to avoid costs for electrical energy (sand filter washing, use of pumps). We can assume that the receipts are insufficient for proper operation and are the ultimate cause of the limited operation.

Effectiveness rating: 4 (Stage 1), 4 (Stage 2)

Efficiency

The programme funds provided for the water supply (around €31.9 million; not including sewage disposal) were not used efficiently. The specific investment costs, across 200,000 residents supplied with water, are comparatively high at €160 per person. Around 100,000 residents can be additionally supplied with water as a result of the programme. The rationed water supply and the tightly limited volume of water supplied to people (less than 30 L per person per day) are significantly below expectations. The low connection rate results in high specific costs of around €275 per person for the sewage collection and treatment

measures, although the contractual prices of the supply and services agreements were comparable with similar projects in Kenya.

The execution of the project over 62 months was only slightly delayed; 51 months were assumed in the programme appraisal.

Pieces of the financed infrastructure (i) cannot be used, for example, because individual parts are missing in the sewage collection pipes, (ii) are not used in accordance with their design, such as the treatment ponds which only hold a fraction of the sewage volume possible by their design, or (iii) are out of order due to damage, such as a turbine for power generation, water pumps and the precipitant dosing at the water treatment plant in Busia.

The storage volumes that are present and in use limit water production to a level far below the treatment plants' capacity limit. This means that the investments in water supply cannot be put to full use, in spite of the significantly higher demand. Water is only supplied a few days a week and on an hourly basis in many areas partly supplied. The high UfW levels (56% in the project area) have a negative effect on efficiency.

The accompanying measure was already finished before the plants were commissioned. This prevented the personnel from being trained in proper operation; support with operation optimisation was not possible. In addition, there was high personnel turnover, which has meant that the benefits of the accompanying measure are no longer available.

The accompanying measure did not contribute to improving the operator's personnel performance capacity in terms of operational, organisational and financial management in the programme area.

Efficiency rating: 4 (Stage 1), 4 (Stage 2)

Impact

No indicators were set during the PA for measuring attainment of the overall objective; the overall objective is to be regarded as achieved once the programme objectives are achieved.

Although around 100,000 residents in the programme area can additionally be supplied with water, substantial rationing causes the residents in the programme area to continue to rely on water not supplied by the operator, whose quality cannot be checked. In particular, poor households that do not own any water storage units continue to be exposed to an increased health risk. The delegation has not found any evidence of the programme contributing to improving the population's health situation. Furthermore, there are no signs of the programme having contributed to economic development. The noticeable improvement of living conditions for the population is mostly limited to the decreased time and work required to obtain water, thereby primarily benefiting women and children.

Impact rating: 4 (Stage 1), 4 (Stage 2)

Sustainability

The operator currently shows 56% UfW in the programme area. Despite the substantial investments and the accompanying measure, the operator is neither technically nor administratively capable of reducing the losses. The FC-financed machinery to detect leakages in the water distribution network is unused due to a lack of knowledge regarding its operation. The site inspections revealed that the most basic maintenance and upkeep work on the systems is lacking, even though this would have been possible with the existing personnel and without major financial expenses. A number of units are defective and no longer used.

The operator is in a difficult financial situation. Following two years with negative operating income, it generated an operating surplus of KES 45 million in 2014, albeit with an annual deficit of KES 81 million once debt service is taken into account. Its equity is completely consumed due to the losses carried forward from the preceding years. The requested rate increase will not be nearly sufficient to bring about a substantial improvement. Ultimately, the debt service cannot be generated as agreed by the fees for water and sewage. The project cash flow, including debt service, will remain negative for the foreseeable future. The operator's financial sustainability is not guaranteed, so nor is the operation of the financed systems. Government subsidies are being directed to the executing agency in the form of investment grants, yet

these are not large enough to cover the deficits that have accumulated. A debt moratorium and debt restructuring are a pre-requisite for the economic viability of the operator and the executing agency, LVNWSB.

The local executing agency structures have been used sensibly, although the Western Water Services Company dissolved as the original operator in 2011 and has not been adequately replaced to date. The current executing agency and operator structure will not endure, because of far-reaching reforms to the sector and the transformation phase for transferring water and sewage infrastructure to the counties. The split into two subunits based on Kakamega and Busia counties' jurisdictions threatens the operator. The assets of the FC-financed facilities are due to be transferred to the county governments within the scope of the ongoing reforms to the sector, with the transfer of obligations to be negotiated. The influence of the counties as shareholders in the operations is difficult to assess.

The developmental efficacy of the measure has been inadequate as of the evaluation and is very unlikely to improve. From today's perspective, sustainable operation is not guaranteed under current circumstances.

Sustainability rating: 4 (Stage 1), 4 (Stage 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 overall developmental efficacy. 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 developmental efficacy of the project (positive to date) is very likely to continue undiminished or even increase.

Sustainability level 2 (good sustainability): The developmental efficacy 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 developmental efficacy 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 developmental efficacy.

Sustainability level 4 (inadequate sustainability): The developmental efficacy 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 overall objective ("overarching developmental impact") and the sustainability are rated at least "satisfactory" (level 3).