Ex Post-Evaluation Brief
Zambia: Water Supply (WS) Southern Province

Programme/Client	I) WS Southern Province (KV), BMZ-Nr. 1997 65 728* II) WV Livingstone (KV), BMZ-Nr. 1999 65 294	
Programme executing agency	Ministry for Local Government and Housing (MLGH)	
Year of sample/ex post evaluation report: 2012/2013		
	Appraisal (planned)	**Ex post-evaluation (actual)**
Investment costs (total)	I) EUR 14.52 million II) EUR 7.00 million	I) EUR 20.05 million II) EUR 9.11 million
Counterpart contribution (company)	I) EUR 0.72 million II) EUR 0.35 million	I) EUR 1.26 million II) EUR 0.32 million
Funding, of which budget funds (BMZ)	I) EUR 13.80 million II) EUR 6.65 million	I) EUR 18.79 million II) EUR 8.79 million

* random sample

Project description: The new Water Law, which came into effect in Zambia in September 1997 stipulated the creation of new, independent and commercially-oriented water companies. In order to stabilise the water supplier in the Southern Province, Southern Water and Sewerage Company Limited (SWSC), and provide support for its creation, Financial Cooperation (FC) funds were made available for the purpose of rehabilitating and extending the pipeline network and the production facilities. These measures were supported by training and organisation advice provided by Technical Cooperation (TC). This was intended to secure and extend access to clean drinking water in 8 towns in the Southern Province (BMZ-Nr. 1997 65 728) and in its capital, Livingstone (BMZ-Nr. 1999 65 294), on a sustainable basis. At the same time the projects were conducted together with SWSC.

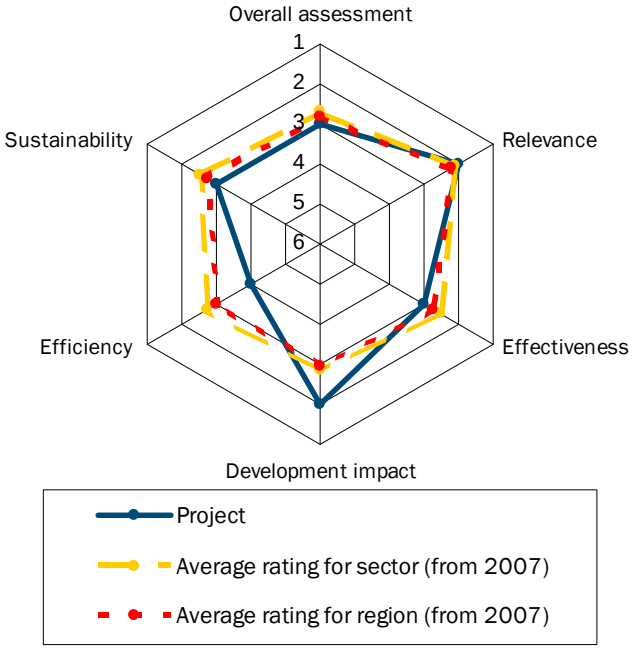
Objective: Overall objective: reduction of health risks by means of improved water supply and disposal and general improvement of the living conditions of the target group. Project objective: Continuous demand-based supply of both the population and institutions, trade and commerce in the selected areas with hygienically clean drinking water. **Target group:** Most of the inhabitants of the Southern Province as well as the inhabitants, institutions, trade and commerce in 8 district towns in the Southern Province and Livingstone (totalling approx. 200,000 persons).

Overall rating (I: WS Southern Province, II: WS Livingstone): 3

The most important objectives of the projects were achieved although the economic efficiency of the water supplier (low meter ratio, overall operating costs not covered by ongoing operations) fell short of expectations. Furthermore, last year there was a slight deterioration in water quality – an impression that was confirmed by the random water tests conducted.

Points to note: A pilot study was conducted to determine the extent to which parallel microbiological water tests carried out at the point-of-sale and point-of-use might constitute a useful addition to selected standard ex post evaluations in the water sector (cf. Annex 14). For this purpose water samples, supplemented by qualitative interviews, were taken for the indicators E.coli and streptococci in 48 households (Sample provides indications, but is not representative.).

Rating by DAC criteria



EVALUATION SUMMARY

Overall rating: Project I: *Water Supply Southern Province* and Project II: *Water Supply Livingstone* is rated as satisfactory (**rating 3**).

Relevance: Over the past 15 years the Zambian government has undertaken a number of efforts at reform with a view to improving the supply of clean drinking water to the population. In 1997 the *Water Supply and Sanitation Act* was passed by parliament. This law provided for the conversion of the water authorities owned by municipalities into independent, commercially oriented water companies, so-called "*Commercial Units"* (CU). In addition to this, a higher-level regulator, the *National Water Supply and Sanitation Council* (NWASCO), was created to monitor the water companies to be newly established. However, it took a further three years for the first CUs to be founded: in 2000 SWSC, the water supplier for the Southern Province was one of the first municipal water companies to be created.

The two projects were intended to help SWSC rehabilitate and strengthen its infrastructure in the first years of operation. At this time the towns in the Southern Province reported a higher percentage of water losses (more than 50%) in the pipelines. These losses jeopardised the efficiency of the water company and thus also their ability to extend the water supply to areas previously without such a supply.

However, the project was only implemented in 6 project towns due to cost increases. No work was done in the two towns of Siavonga and Gwembe, and in Mazabuka the measures originally planned were only partially realised.

The projects were conducted in close collaboration with TC. TC was to focus on strengthening the water company's institutions (accounting, management, information system, etc.), while FC was to be used to finance urgently needed maintenance work in the pipeline and production system and extension of the existing water supply and sewage systems.

Also seen from today's point of view, the problem analysis and design chosen are correct and coherent. All in all, the two projects were optimally embedded in the Zambian government's overall strategy of supporting the efficiency of the water sector by creating independent water companies.

This integration can still be observed today: not only German Development Cooperation, but also a number of other donors are active in the Zambian water sector, each supporting a limited number of CUs. This work is coordinated in a sector work group with the aim of ensuring optimal coordination. Today the water sector continues to be a focus of German Development Cooperation (DC) in Zambia. **Sub-ratings: Project I: 2, Project II: 2.**

Effectiveness: The objective of the FZ measures comprised the continuous and adequate supply over the whole year of the majority of the population as well as institutions, trade and commerce in the eight program locations and Livingstone with drinking water in perfect hygienic condition and adequate waste water and sewage disposal in those locations provided with sewage systems.

Seven indicators were defined in each case to measure achievement of the project objectives. However, for a number of project objectives the limits to be met differed from each other in the two projects. For this reason these were standardised for the ex post evaluation. The project objective indicators were (1) the availability of water for 24 hours a day, (2) the reduction of water losses to 30% of the quantity produced and a meter ratio of 100%, (3) the increase in the level of supply to 80%, (4) fulfilment of the WHO standards for water quality, (5) cover of ongoing operating costs, including adequate maintenance and repair, (6) collection of charges for at least 85% of the water invoiced (7) the functioning of the repaired sewage systems.

Unfortunately, the availability of water only improved slightly from 15 hours to 17-19 hours (in Livingstone from 20 to approx. 22 hours a day). The reason for this, apart from the partially insufficient production capacity in the towns, is the increased number of outages in the electricity supply in recent years. Water losses were reduced although at 53% they are still very high. Unfortunately, no exact figures are available on how water losses have improved since commencement of the project. Interviews conducted locally show that there is a marked trend toward improvement although the indicator was not met. This is particularly the case for the meter ratio, which over the past few years has decreased due, among other factors, to the rapid growth of Livingstone and the strong demand for house connections, to 55% in Livingstone and 72% in the Southern Province (81% in the remaining programme towns). Conversely, the level of supply has shown a gratifying development and at 94% is above the required target levels. In contrast to 2011, when samples taken by NAWASCO met WHO standards in 97% of cases, putting them above the important national benchmark of 95%, the figure in 2012 is only 91%. This trend was also indicated by the water tests conducted locally during the ex post evaluation, which in 3 out of 6 randomly selected kiosks found light contamination with E.coli bacteria (sample not representative). The water quality has thus achieved a high level (e.g. all the house connections tested showed no contamination) although in some cases there is still room for improvement. The operating costs as stated by SWSC are covered although the reserves formed for repair and maintenance do not comply with international standards and must be classified as too low. By contrast, collection of charges showed a pleasing trend, standing at 94% in 2012, which comfortably meets the targets. The final indicator is difficult to assess as no sewage systems were rehabilitated due to cost increases. Only one sludge vacuum tanker was acquired. This is still in operation and is even being used profitably for the disposal of waste water, mainly for commercial customers.

Summing up, it can be said that only three of the seven indicators were met without shortcomings. However, the indicators for water losses and meter ratio as well as covering operating costs constitute three indicators that are important precisely from an economic point of view that have not been met. This results in an overall satisfactory assessment of effectiveness. **Subratings: Project I: 3, Project II: 3.**

Efficiency: The project was intended to improve the physical infrastructure in 9 project towns (including Livingstone).

The project appraisal for the WS Southern Province (WS Livingstone) project was conducted in 1997 (1999). Implementation began in 2000 and work could not be finally completed until 2009. The reason for the long period between the project appraisal and commencement of the measures was the delay in the coming into effect of the Water Law and problems with the establishment of the new water companies; among other things there were problems transferring property rights to the infrastructure (for instance, today SWSC still does not have a complete list of the value of all the facilities, which would make it possible to calculate maintenance costs in future). This also delayed the planning process as the feasibility study conducted before 1997 was already out of date when work began. Subsequently various problems arose within the SWSC management, as a result of which CF suspended funding of the water company for 12 months. Work was then recommenced under new management as of 2004 and ultimately brought to a more or less successful conclusion. The production efficiency of the overall project is thus deemed not satisfactory, above all due to negative exogenous factors.

Regarding allocative efficiency, above all the low meter ratio must be viewed critically – a circumstance that might have been avoided had specific focuses been set in project planning or on the basis of an updated feasibility study in 2000. As insufficient water meters were installed, the CU was not able to generate the income that would have been necessary for constant extension and improvement of supply. This problem has been named by the regulatory authority and is being proactively tackled although it will take some time before the meter ratio has reached a satisfactory level.

In spite of these problems it must be pointed out that in a comparison by the regulatory authority with all other companies across Zambia SWSC numbered among the best companies, although it slipped to third place in 2012.

Overall, however, due to the long duration of the project and the low meter ratio we can only rate the efficiency as no longer satisfactory. **Sub-ratings: Project I: 4, Project II: 4.**

Impact: The overall developmental objective was to reduce health risks by means of improved water supply and waste water disposal. During evaluation the objective of improving the living situation of the target group was added to this objective.

The project measures were clearly necessary to ensure and extend the water supply in the project towns. This meant that many people had direct access to clean drinking water via a house connection for the first time. The kiosk system implemented wherever no house connections could be financed for the time being was fundamentally successful. However, in the rapidly growing town of Livingstone the kiosks were replaced by house connections almost everywhere. This should not imply, however, that these kiosks were not effective; after all, many households only became aware of how important access to clean water is thanks to the kiosks. This is shown by the fact that after the construction of a kiosk the demand for house connections increased sharply amongst the population. In Monze and Choma nearly all the kiosks are still working.

However, water tests showed that in many cases the clean water from the kiosks is contaminated again during storage and transport from the kiosk to the home. On the one hand this is unsatisfactory, but on the other hand in spite of potential subsequent contamination in the household the quality of the water from a kiosk is still much better than water from informal wells, where the water is highly contaminated, as analysis results showed. The impact of kiosks on health is thus plausible although in some cases this is reduced due to secondary contamination.

Finally, it must be underlined that the construction of new house connections, but also the setting up of a kiosk, constitutes a considerable improvement in living conditions for the people. The distance to be covered to get water is shorter and the water is cleaner, at least when it is collected.

At the institutional level it must be pointed out that after some initial problems SWSC has turned into a competent water supplier, which in spite of the aforementioned problems numbers among the best in the country. There is a progressive tariff system, which increases in line with the quantity consumed and thus favours poorer households. In addition to this, the regulatory authority exerts pressure to make further improvements. The impact is thus rated as good. **Sub-ratings: Project I: 2, Project II: 2.**

Sustainability: The monitoring systems and the management information system were improved and SWSC has become steadily more professional over the years. Examples of this are plans to finally draw up an *Asset Register* on the value of all the facilities and to create a long-term *Business Plan* (5 years). The problem of the low meter ratio has been recognised and various solutions are currently being discussed. The regulatory authority is monitoring fulfilment of these plans, which can be considered exemplary by international standards.

However, SWSC faces some significant challenges in the coming years: a 100% meter ratio must finally be achieved as well as adequate cover for the maintenance costs incurred in future. Only then can funds be generated that can also be used to extend the existing systems. Political influence also makes work difficult in some cases. If no further finance is

found in the coming years or no additional funds are provided by the government, the capacity of the water supply system in Livingstone will soon reach its limits. Sewage disposal must also be extended. The clarification ponds in Livingstone are outdated and leak, with the result that sewage flows directly into the Victoria National Park. Overall, we arrive at a still satisfactory assessment of sustainability. **Sub-ratings: Project I: 3, Project II: 3.**

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:

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

Ratings 1-3 denote a positive or successful assessment while ratings 4-6 denote a not positive or unsuccessful 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. Ratings 1-3 of the overall rating denote a "successful" project while ratings 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" (rating 3).