Ex post evaluation – Tanzania

Sector: Basic drinking water supply and basic sanitation (CRS Code 14030)
Programme/Project: A) Rural Water Supply Hai District, IV-II, Inv. BMZ no. 2006 65 125*; B) Rural Water Supply Hai District, IV-II, CM - BMZ no. 2006 70 075
Implementing agency: Steering Committee Hai District Water Supply Project

Ex post evaluation report: 2017

		Inv. (Planned)	Inv. (Actual)	CM (Planned)	CM (Actual)
Investment costs (total)	EUR million	7.48	7.62	0.74	0.74
Counterpart contribution	EUR million	0.72	0.86	0.00	0.00
Funding	EUR million	6.76	6.76	0.74	0.74
of which BMZ budget funds	EUR mil.	3.01	3.01	0.74	0.74
of which EU co-financing	EUR million	3.75	3.75	-	-

*) Random sample 2016

Summary: The project represents the second stage of the fourth phase of the FC programme for rural water supply in the Hai district and continues on from completed projects I to IV-I. It comprises the rehabilitation and expansion of the Levishi, West Kilimanjaro and Northwest Kilimanjaro water supply systems, as well as the construction of new systems in Machame and Mkalama. As part of the complementary measure, two new village water committees have been established, for which employees have been trained in the operation of the water systems, and three committees which were established in predecessor phases have received further support. Furthermore, the Water Service Facility (WSF) has been established as a central service provider in order to advise and serve all the water companies. A further focal point of the complementary measure was the implementation of hygiene education measures.

Development objectives: The project's development objective was to contribute towards improving the health situation and the overall living conditions. The programme objective was defined as the increased use of a reliable, affordable, healthy, safe and sustainable water supply by the target group.

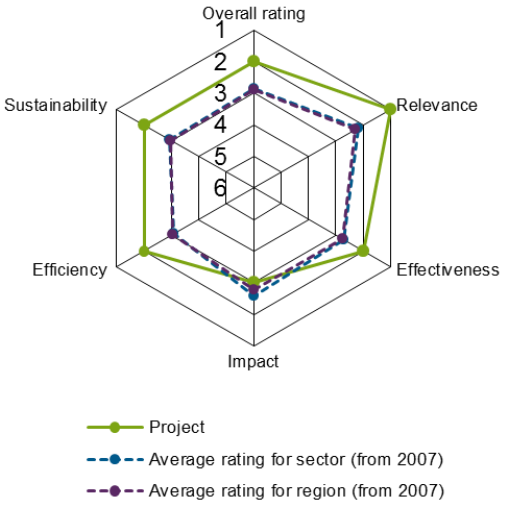
Target group: The target group was the entire population in the area supplied by the existing systems, as well as by the systems to be expanded and newly constructed. In this programme phase, the target group encompassed around 97,000 residents.

Overall rating: 2

Rationale: The objectives of the project were largely achieved and the technical and economic performance capacity of the water companies is extremely high. The programme was able to help make a significant improvement in living conditions in the Hai district. These benefits are currently limited by insufficient chlorination of the water, although this is due to be remedied.

One of the five rural water supply companies supported is not able to cover its costs. This shows that decentralisation is a fundamental problem in Tanzania, as potentially unprofitable rural companies such as this are not cross-subsidised by urban consumers. A solution to this problem should be sought on a national level.

Highlights: The project serves as a model project in Tanzania and the concept was incorporated into the national water strategy. The founding of the WSF, which provides the water companies with administrative and technical support and carries out performance monitoring on an annual basis, among other things, makes an important contribution towards ensuring the sustainability of the water committees which were established and supported as part of the project.



Rating according to DAC criteria

Overall rating: Rating 2

The project established and supported sustainable water utilities (special purpose associations or "trusts"), which, from a technological and economical point of view, operate in an exemplary manner in comparison to many other rural and urban water utilities in Tanzania. The support provided by the newly founded Water Service Facility (WSF) is having a positive impact on the sustainability of the trusts, which suggests that they will develop successfully in the future. The project contributed to improving the health situation of the target group and had a positive effect beyond the borders of the project region by setting an example for other regions in Tanzania.

Relevance

At the time of the programme appraisal in 2006, a third of the population in the project region were living in areas without clean drinking water which led to health problems and limited economic and social development opportunities. Poorer population groups were particularly affected, especially women and children who are traditionally responsible for fetching water. Continuing on from the successfully completed predecessor phases I to IV-I, a decision was made to expand the project to include two further systems and the rehabilitation and expansion of three existing systems. Due to the sparse concentration of water supply facilities and the prevailing poor condition of the existing systems at the time the project was planned, this appears to be appropriate from today's perspective.

The project was intended to reduce water supply shortages by building, expanding or rehabilitating water supply systems. The complementary measure enabled new water committees to be set up and existing committees to be supported. Furthermore, it allowed a central service company (WSF) to be established, which is designed to offer support and provide technical and administrative advice to the trusts. The establishment of independent water companies in rural areas is one of the main objectives of the Tanzania Water Sector Development Programme, which went into effect in 2007. In light of this, the water supply programme in the Hai district is a model project for rural areas and the concept was incorporated into the Tanzanian water strategy. Donors in the water sector coordinate between themselves extremely well and pursue harmonised approaches. Since the national programme has been supported by basket funding over the past few years, donors have most recently been returning their focus to individual projects.

The programme design corresponds to the Water Sector Concept of the BMZ and aligns with the DC strategy of the BMZ, which still has water supply and sanitation management as its priority areas.

The donor coordination outlined in the programme concept with co-financing from the EU was also suitable for solving the core problems.

Given the project's high degree of significance for the target group and the convincing programme design, we rate the project as having a very good relevance rating.

Relevance rating: 1

Effectiveness

The programme objective was defined as the increased use of a reliable, affordable, healthy, safe and sustainable water supply by the target group. The following indicators were defined for measuring the project objective:

Indicator of the FC measure objective	Initial values	Target values	Ex post evaluation
(1) Consumption per head at standpipes (lpc/d = litres per capita per day)	N/A	> 15 lpc/d	7-10 lpc/d Value is below expectations due to the high number of service

			connections; **meets acceptable requirements due to the reasons below**
(2) Correct operation of the standpipes	System not available or outdated	> 90%	93-95%; **met**
(3) Coverage of operating and maintenance costs as well as depreciation of revenue from water sales	N/A	100%	**Met in 4 out of 5 trusts.** In Mkalama, only 70% of the operating costs, and no depreciation, is covered.
(4) Fitting water meters to all water connections for consumption-based billing with progressive tariffs	N/A	100%	100%; **met**
(5) The water quality meets the Tanzanian standards (WHO quality)	N/A	Yes	**Met**, but with limitations (see below)
(6) Water availability at public standpipes	N/A	> 20 lpc/d	> 20 lpc/d; **met**
(7) Water committees are established and fully functioning	In newly established trusts: no; in existing trusts: yes	Yes	**Met**

Due to the target group's great willingness to help themselves, a large portion of the construction measures were able to be completed thanks to their personal contribution, with the support of consultants. The investment and complementary measures resulted in independent and sustainable water supply systems.

The indicator for consumption at the public standpipes has not been met, as a significantly increased number of service connections have been installed in the water systems in comparison to the original design. This means that families who have no service connection generally go to their nearest neighbour who does and stock up on water there in exchange for a contribution towards the water bill. The public standpipes are only used on days where there is no access to the service connections, which leads to low consumption values at the standpipes. However, as this does not limit the supply of water to the target group and the low consumption level also does not have an effect on the tariffs of the public standpipes, we consider this low value to be acceptable.

4 of out 5 supported trusts have achieved full cost coverage, i.e coverage of operating and maintenance costs as well as depreciation. However, the Mkalama Water Trust has only achieved 70% coverage of the operating and maintenance costs. The reasons for this are, on the one hand, that this is the weakest region in the project area from an economic point of view, and on the other hand, that there are alternative water sources available to the population (wells, streams, ditches) which can be used free of charge. The

results show that the target group primarily uses the free alternative water sources for everyday use and only obtains small amounts of water from the pipe network which leads to low revenue for the trust and also carries health risks for the user. However, the other trusts in the Hai district support Mkalama by covering the membership fees for the WSF, and the WSF itself provides the trust with free advanced training courses and technical assistance, as well as spare parts on credit. Mkalama will be expected to pay this back as soon as the economic situation of the trust has improved.

In some cases, supply units had to be created due to geographical, hydrological and even social characteristics which were so small that not all the units were able to cover their costs. A cross-subsidisation solution should be sought on a national level to solve this problem.

The water quality at all trusts will be measured once a quarter by analysing water samples at the Saint Luke's Foundation Laboratory in Moshi. The results of these measurements consistently show values of under 10 colonies of coliform bacteria per 100 ml of water, which is considered a "low risk" by Tanzanian standards. However, measurements of the residual chlorine content taken as part of the evaluation mission show values of under 0.1 mg per litre in all samples, which is too low for samples taken from near a water tank. Here, the water treatment practices of the trusts should be adjusted with the support of the WSF in order to ensure consistently high water quality.

The trusts established as part of the complementary measure and the WSF are operating very successfully in all areas, with the exception of Mkalama. We can assume that the management training programmes provided, which covered the correct installation of service connections and maintenance of the systems, and regular performance monitoring carried out by the WSF made a significant contribution to these target values being achieved.

In summary, we can conclude that 4 out of 7 target indicators have been met without making any compromises, and 3 out of 7 have been met with some minor compromises. We therefore rate the effectiveness of the project as good.

Effectiveness rating: 2

Efficiency

Due to the significant share of voluntary work carried out by the target group, a large number of the construction measures were able to be carried out thanks to the group's personal contribution, which made the implementation extremely efficient. The quality of the system installed is good. The production efficiency is rated as good.

With an estimated population of 97,000 in the programme region, the specific per capita investment costs amount to approx. EUR 85. This figure is relatively high in comparison to the predecessor phases (EUR 59/capita) and the per capita costs of similar water systems (mains-based or gravity-fed) due to the dispersed settlement structure and the resulting necessary network lengths, but this can still be rated as appropriate.

All connections were fitted with water meters and loss rates are extremely low, with values of 10-15%. The collection rates of between 90-95% (with the exception of Mkalama with a value of 89%) are very good and also show no signs of declining.

Furthermore, at 4 out of 5 trusts, revenue covers the full cost of operation, maintenance and short-term investments, meaning these trusts are breaking even. For a rural water supply system, this is remarkable. An alternative water supply system does not need to be considered thanks to the reliable supply provided by the trusts.

In summary, we rate the efficiency as good.

Efficiency rating: 2

Impact

The overall developmental objective of the project was to help improve the health situation and the overall living conditions of the target group.

Indicator	Ex post evaluation status
No indicators for the health situation of the target group were defined at the project appraisal.	Health statistics for the trusts show that the incidence of waterborne diseases in the project region has declined significantly since the implementation of the project.
The indicator "the average distance to the nearest public standpipe is less than 400 m" was defined at the project appraisal. This indicator was assessed to be the development objective as part of the ex post evaluation.	The average distance to the nearest public standpipe is 200-300 m. The indicator is therefore fulfilled.

Statistics from health units and hospitals in the region show that there have been no new cases of cholera since 2012. Furthermore, the prevalence of diarrhoeal diseases and typhus has been greatly reduced. However, there are still cases of amoebae and worm diseases, which can also be attributed to generally poor hygiene practices or food quality.

Thanks to the good performance capacity of the operation, a lower tariff at the public standpipes can be achieved using cross-subsidisation, which will reduce the financial burden on poorer population groups.

Since the water systems were commissioned, the region has recorded an economic upswing, which is demonstrated by an increased influx of people from other regions and strengthened business activity, leading to an improvement in the economic situation of the target group.

In summary, a clear improvement in living conditions can be determined. Because the hygiene practices of the population fall somewhat short of acceptable standards, the chlorination process has so far not been carried out as effectively as possible, and the population in Mkalama uses unclean, alternative water sources, we rate the impact as satisfactory.

Impact rating: 3

Sustainability

The current situation of the operator organisations suggests that this positive development will continue in future. All connections have functional water meters and the current management allows 4 out of 5 trusts to self-finance any necessary maintenance work or to use replacement investments. The operators work independently and are able to make efficient use of their revenue.

However, in Mkalama, the availability of free alternative water sources is leading to low revenues and therefore to a reduction in the trust's ability to cover their costs, as well as to health problems for the users. The support from the other trusts can be considered positive, but cannot be a long-term solution. One task of Mkalama is to work with the support of the WSF to formulate and implement a strategy for increasing use of the clean drinking water.

A sustainable operational organisation is particularly based on the ongoing acceptance and willingness of the population to pay the costs for the water supply and the ability of the trusts to manage their personnel and maintenance of the system efficiently. Thanks to the continued support of the WSF, no risks have been identified in relation to this.

In 4 out of 5 trusts, there are no problems with regard to water availability and expansion of the systems is possible in the medium term without limiting resources. However, there is a conflict of interest in the West Kilimanjaro Water Trust which may lead to sustainability problems. After separating the new Siha district from the Hai district, a new regional capital was established in Siha and connected to the system in 2015, even though the system is actually only designed for 5 villages. As the town is now growing rapidly and therefore has high water consumption rates, villages which were originally intended to be supplied are facing increased supply shortages. The responsible Regional Water Engineer has been informed and has

agreed to support the setting up of a separate water supply system for the town of Siha, which will certainly take some time. In the meantime, the usage quotas must be introduced, if necessary, in order to ensure that the villages are also supplied with enough water.

An appropriate wastewater and sewage disposal system is particularly important for service connections. The WSF operates a lorry which empties cesspits and transports the sanitary wastewater to the nearest treatment plant in Moshi. As the vehicle is in frequent use, we do not see any risks here.

In summary, the sustainability of the operation can be rated as positive overall, despite the problems presented regarding individual trusts.

Sustainability rating: 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).