Ex Post-Evaluation Brief
AFGHANISATAN: Water Supply Herat

Sector	14030 Basic drinking water supply and sanitation	
Project/Client	Water Supply Herat, BMZ No. 2002 65 637*	
Programme executing agency	Afghan. Urban Water Supply & Sewerage Corp. (AUWSSC)	
Year of sample/ex post evaluation report: 2012/2013		
	Appraisal (planned)	Ex post-evaluation (actual)
Investment costs (total)	EUR 6.0 million	EUR 8.1 million
Own contribution	./.	./.
Funding, of which budget funds (BMZ)	EUR 6.0 million	EUR 8.1 million**

* random sample 2012; ** incl. residual funds of "Water supply Kunduz"

Short description: The project comprised immediate and medium-term water supply measures to rapidly increase the availability of water resources and the security of supply for the Afghan city of Herat. Building on data and experiences from the immediate measures, a concept was developed to supply the city over the medium term (new well field, increase in storage capacity, design of a main distribution network and doubling the number of home connections). Operating costs were funded on a decreasing basis d and the institutional development support for the operator organisation initiated.

Objectives: The primary objective was, on the one hand, to improve living conditions and reduce health risks to the population of Herat; this was to be measured by the results of household surveys and, if available, by data on the occurrence of waterborne diseases. On the other hand (added ex post), the project was to contribute to stabilised public structures under (post-) conflict conditions. The project objective was to improve drinking water supply through a sufficiently competent local supply company (added ex post) with the indicators a) water quality, b) supply volumes, c) supply coverage, d) water losses and e) bill collection rate.

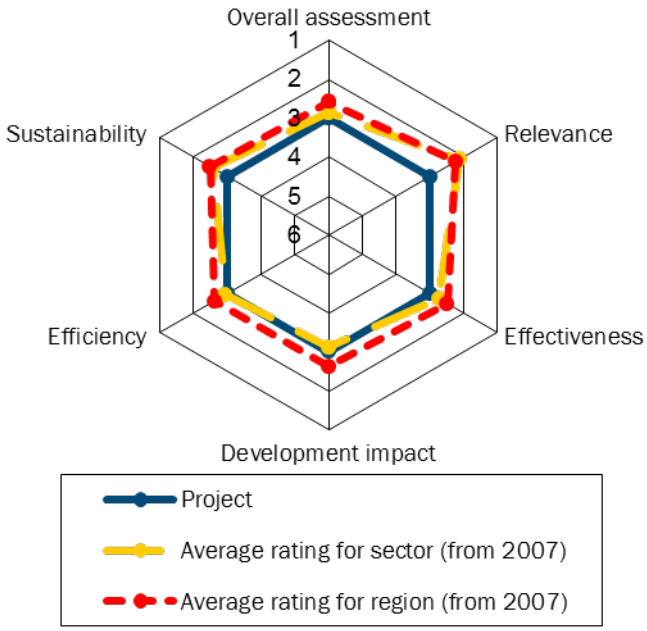
Target group: Approx. 800,000 inhabitants of the city of Herat (estimated at PP to be: approx. 450,000).

Overall rating: 3

It proved possible to improve the supply situation for the target number of inhabitants, and the operator's performance has greatly improved. However, due to the fragile context, the design horizon for the supply system was limited and the size of the population significantly underestimated; this was partly caused by the immigration of refugees into the supply area, leading to undersized system layout (e.g. pipelines are, in part, too small).

Of note: The Herat supply company's institutional performance substantially exceeds the national average. Herat has the potential to be a model for urban water supply in Afghanistan; however, no subsequent efforts have been made to correct the above-mentioned design deficiencies in with the aid of external support (and/or FC). Particularly in the case of a volatile environment and insufficient information base, the sequencing of (precursor) immediate measures and (subsequent) system expansion provided for in the concept can be regarded as appropriate.

Rating by DAC criteria



EVALUATION SUMMARY

Overall rating

Overall, the project is rated as satisfactory. This assessment is particularly grounded on the operator´s significantly advanced institutional stabilisation and, concerning the initial immediate measures, the relatively swift supply improvements (in absolute figures) for the originally intended number of inhabitants The institutional improvements achieved in a fragile setting deserve particular mentioning, as improved water supply can - in the eyes of the population – be clearly attributed to the local water utility, and not to a parallel, donor-induced structure

Rating: 3

Relevance

For centuries, Herat and the surrounding region have been regarded as one of the country' cultural centres. Site-specific factors such as the distance from Kabul, the cultural proximity to Iran and a social fabric that has remained more stable than other regions of Afghanistan throughout the years of conflict have resulted in a special status for Herat among the country's cities – in both political and administrative terms. This is also reflected in the water supply's relative operational independence, leading to generally favourable conditions for the success of a water supply project in the Afghan context. The unreliable and deficient provision of drinking water to the population of Herat was, in connection with the weak operator capacities, correctly assessed to be a central problem. Due to the urgency of the situation, the main focus was primarily on increasing the volume of water and reliability of supply, and on improved water quality only within the framework of longer-term measures. However, concept and design do show a number of shortcomings. As a result of the budget and the generally shorter planning periods in a fragile setting, the design´s time horizon was limited to seven years (normally 20); inadequate sizing, especially of the main pipeline, creates constraints for future expansions of the existing supply system – which are urgently needed in light of the population increase. At approx. 800,000, revised estimates of the actual number of inhabitants significantly exceed the figure initially projected (around 450,000); quite probably, immigration dynamics into this relatively stable area were underestimated. Water supply constitutes one of the most pressing issues both for the Afghan government and the city of Herat, and therefore logically a key factor for stabilising conditions in a volatile setting.

The intervention logic behind the project is essentially reasonable but, as was customary at that time, focused explicitly on the resultant infrastructure; with hindsight, equally relevant aspects of stabilisation under (post-) conflict conditions were not explicitly addressed ("dual system of objectives"). As regards the original hierarchy of objectives, a lack of reliable indicators can be identified on the one hand, which were added *ex post* (see below). On the other hand, the overall objective of the beneficiary population's "improved living conditions" should - in retrospect - be regarded as at least of equal importance as the then only objective of "improved health". A rehabilitation of urban water supply systems, with the large-scale retention of existing production centres, can normally only produce limited effects on health.

The reform of the institutional framework, which was in urgent need of adjustment, was well-covered by complementary interventions through Technical Cooperation (TC); their importance for the intervention´s sustainability is rated as high. Overall, the German development cooperation acts as the "*lead donor*" in the field of urban water supply, and its interventions are regarded as diligent and effective. In this regard, Herat is viewed as a country-wide model, which is partly due to a comparatively more stable environment (see above). It remains unclear why, precisely in light of such potential, no further, timely efforts were made to correct the design shortcomings in and resultant bottlenecks, which had become evident at the latest shortly before starting construction works. However, no further funds were mobilised to this end.

In its aims, the project conforms to the "*Afghan National Development Strategy*" adopted by the Afghan government. Coordination with other donors, above all the World Bank (within the framework of its 11 cities programme), is to be rated as good. Having only been published in 2013, the BMZ's concept for development cooperation in the fragile context of "Development for Peace and Security" could not yet be considered explicitly.

Sub-Rating: 3

Effectiveness

The project objective was to improve drinking water supply; as a contribution to meeting the population´s basic needs, the sector offered important potential for stabilisation. With view to the above-mentioned structural dimension, i.e. the institutional strengthening of sufficiently legitimised local structures, the project objective's (*outcome*) formulation is supplemented with the addition of "*by an effective operator*". The level of supply of 75% (indicator 1) aimed for initially was not achieved and currently stands at about 45%. This is, however, in relation to a far higher population than estimated when the project was first conceived (see above). Considering the fact that, in absolute terms, the number of people supplied should be almost 350,000, that same figure has actually been reached. Consequently, the target may be regarded as having been achieved. In retrospect, this indicator should have been adjusted in light of population dynamics, the development of costs and resultant budgetary bottlenecks.

Accordingly, more indicators have been included, with the key figures for water losses and the collection rate being used to appraise the institutional aspect (indicators 2 to 5).

- The increase in the available volume of water from 30 to 50 litres per capita per day.
- Water quality in accordance with WHO standards,
- Water losses totalling below 30% and
- A collection rate of above 70%.

The key results are depicted as follows:

Key figures	Unit	2002	2013	Difference
Storage capacity (thereof from FC)	m^3	3,200	7,800 (4,000)	144%
Water production (thereof from FC)	m^3/day	13,700	39,000 (25,000)	185%
Consumer connections (thereof from FC)	#	12,300	46,280 (6,800)	276%
Coverage of the population	%	30	45 %	15%
Collection rate	%	<40	75	+35%
Technical losses	%	50	30	-20%
Security of supply	Hrs/day	9	24	+15 hrs
Employees of SBU Herat	#	33	105	72 pers.

The indicator for the available water volume per inhabitant (indicator 2) was fully met (see the key figures for storage capacity and water production that, taking into account water losses, produce approx. 50 to 60 litres per capita for about 350,000 supplied inhabitants). As regards water quality (indicator 3), the project made a significant contribution, even though compliance with WHO standards is probably not guaranteed. As no *baseline* was established and there was/is also no large-scale water testing, the achievement must be assessed on the basis of qualitative surveys. It may be stated with sufficient certainty that the relocation of some deep wells to outside the city centre (about half the supply capacity) improves the water quality in part. Existing urban wells have, however, thus far continued to be used without regular water quality checks. An (unrepresentative) survey of water users consistently confirmed the improved water quality from "outside" sources. Nonetheless, there are also doubts regarding the continuous security of supply asserted by the operator, since interruptions to the supply and insufficient water pressure have repeatedly been reported. Data regarding rates of loss, i.e. the difference between the produced and billed water (indicator 4) fluctuate considerably and are consistent only in part. However, total losses must be around 40% to 45%. The indicator has thus not been met, even though improvements have occurred. The requirements for the collection rate, i.e. the proportion of invoiced amounts actually paid are, at 75%, fulfilled.

It should be viewed as positive that the initial immediate measures (repairs for reducing water losses) could, with an execution period of about 20 months, be implemented speedily. Consequently, the first visible results materialised relatively quickly. It has to be taken into account that targets benchmarks were based on water projects in stable settings. Considering their - at least - partial achievement as well as the local supplier´s significantly enhanced performance, the effectiveness of the project may still be rated satisfactory.

Sub-Rating: 3

Efficiency

As the new well field serves a high number of beneficiaries, the costs per inhabitant are uncommonly low (EUR 20). However, this is also a result of the reduced design horizon (only 7 years up to 2010), which led to a partial under sizing. Accordingly, a considerable need for

extension and expansion has not been met to date. The infrastructure provided has been built to a high standard, taking into account the limited implementation period. Considering this, the system is operated reasonably properly, although problems (in part caused by design) in terms of pipeline pressure as well as supply interruptions due to power shortages reportedly occur irregularly. No precise data to this respect is available.

The largely inevitable security problems and political tensions in the Afghanistan context have delayed execution of the main construction measures (not the above-mentioned immediate measures) by almost 36 months. Contributing factors were the premature termination of the agreement by the building contractor due to security considerations.

The water price in Afghanistan was raised by Presidential Decree of June 2012 from an average of EUR 0.09 to approx. EUR 0.36 per m^3. The tariff increase has been applied since November 2012 by the national supply agency AUWSSC, and theoretically is both socially acceptable and enables operations to cover costs. The water plant in Herat is the only supplier in Afghanistan to currently stand a real chance of achieving this goal and has, to some extent, already succeeded in doing so.

At over 50%, the share of water actually sold is, in terms of the production volume, low. However, the utility is aware of this issue and is working actively to find a solution. The costs including amortisation and depreciation (approx. EUR/ m 0.24^3) calculated for the water supply show that the current water tariffs (EUR 0.34) could cover the full costs (with a further reduction in water losses). This calculation, however, is based on the current infrastructure, which does not meet actual supply needs for (see above).

Even if the reduced planning period can mainly be explained by the fragile context, allocation efficiency is adversely affected by the technical structures, which can only be expanded to a certain extent due to the sizing of the main pipeline. With little additional effort, the investments could have created greater value over the long term. Their impact would then have extended over a longer period, and connectability to sustainable structures might have been better ensured.

Sub-Rating: 3

Impact

Data regarding the achievement of the original overall objective (primarily the health situation) is sparse, partly contradictory and reliable to only a limited extent. As an alternative, surveys have been conducted among the population locally. These produce indisputable, although qualitative indications of significant improvements in both areas of impact, i.e. improved living conditions and health. Health Effects caused by improved water supply infrastructure are particularly likely in those urban quarters that have been newly connected to the water supply, with their water obtained via the new wells. Reservations regarding hygiene have to be expressed in light of the fact that it has not yet proven possible to put ”downtown wells” out of

operation, which cover almost half of the area supplied; for the time being this is likely to remain so. Furthermore, waste water in the city is inadequately disposed of when large amounts accumulate.

As a result of higher service quality, the project in general has tended to improve the target group´s living conditions, and - for about half of them - their health situation. Moreover, the improved institutional performance of the local water supplier should be regarded as a contribution towards reinforcing public structures in a setting that, at least on the whole, remains conflict-ridden. The degree to which this effect contributes overall to an increased overall legitimacy of public institutions is, in light of the prevailing circumstances, uncertain. This reservation equally applies to the degree to which such a "reputational push" may, in view of the pronounced regional awareness in Herat, also be of benefit at a national level.

Sub-Rating: 3

Sustainability

With view to sustainability, various critical issues arise. Although the supply system has been continuously expanded physically and improved in quality since hand-over,, it is reaching its technical limits: it was only designed for the year 2010 and the - partly design-related - operation weaknesses (see above) will probably persist at least at the same scale. It remains to be seen whether the Herat water utility will enhance its technical capacity and raise the funds for the necessary system expansion. Institutionally, the company is currently only able to operate the supply system independently to a limited extent and continues to benefit from external support. At the same time, it should be noted that various improvements actually became apparent since handover. In light of the country's persistently high degree of fragility, overall sustainability can be regarded as only satisfactory at best – despite the relatively favourable conditions in Herat.

Sub-Rating: 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).