

Ex post evaluation – Northern Iraq



Sector: 14020 Water supply and sanitation - large systems
Programme/Project: Emergency measures for water supply and sewage disposal in Iraq (BMZ no. 2003 66 542*)
Implementing agency: General Directorate of Water and Sewerage (GDWS)



Ex post evaluation report: 2016

| | | Project (Planned) | Project (Actual) |
|--------------------------|-------------|-------------------|------------------|
| Investment costs (total) | EUR million | 3.00 | 3.25 |
| Counterpart contribution | EUR million | 0.00 | 0.00 |
| BMZ funds | EUR million | 3.00 | 3.25 |

*) Project in the 2016 random sample

Summary: The FC commitment was made in 2003 as an emergency measure to selectively maintain and rebuild the water supply network which had been neglected under the regime of Saddam Hussein in the areas of the disadvantaged Kurdish minority (particularly in the cities of Dohuk, Erbil and Sulaymaniyah). The measures were handled by a German engineering firm due to insufficient partner structures as a direct contribution of KfW. As a result of the strained security situation, the project was suspended in 2003 and - after a 7-year interruption - only resumed in 2010 with modified objectives. The project's classification as an emergency measure (limited sustainability according to sub-section 47 of the FC/TC guiding principles at the time of the project appraisal in 2003) is still justified by the continued instability in overall conditions which can be attributed to ethnic and religious tensions in Iraq and to the state structures in the new autonomous Kurdish regional government which are only partially stable. The project - which had been modified as a result of many investments from other donors in the meantime - included a high percentage (45%) of training measures compared to the original plan which aimed to establish capacities for management and maintenance in the water management. This was, in principle, complementary to the investments financed in the project which consisted of the acquisition of leak detector units, equipment of pilot zones with water meters, 5 km water pipes and two deep wells.

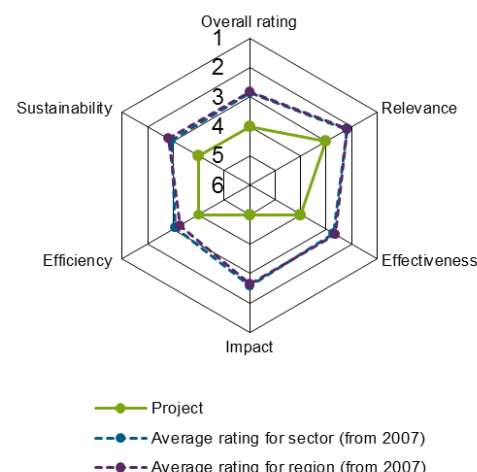
Development objectives: Overarching development objective (impact) was to contribute to reducing health risks caused by water rationing and uncontrolled disposal. Programme objective (outcome) was to make a selective contribution to a needs-driven, continuous and hygienically clean water supply. A second objective of achieving a stabilising impact in a fragile context was not yet added at the time of the project appraisal but ex post.

Target group: The target group was the population of the three cities of Dohuk, Erbil and Sulaymaniyah (estimated 2.6 million people in 2010) who suffered from an irregular and, in some cases, unsanitary water supply.

Overall rating: Rating 4

Rationale: Most of the financed system parts and equipment are no longer in use because, among other things, the high turnover in personnel means that there is only little knowledge about how to use them. The desired (selective) improvement of the operation of the three water supply systems is not visible. The high numbers of refugees from other regions of Iraq and domestic refugees who settle in the city districts has overloaded water networks and led to an irregular supply of water.

Highlights: In a fragile environment with limited operational and technical expertise, a not insignificant part of the measures (e.g. training on investment planning and finding leaks in the supply networks or installation of water meters in pilot zones) aimed to structurally strengthen the water operations of the three cities. Without a follow-up phase by German FC or other donors, there was a high risk that it would be impossible to achieve structural changes with these types of measures.



Rating according to DAC criteria

Overall rating: 4

Due to the security situation in the programme area, the evaluation was performed as a desk analysis and reliable data could not be collected for all programme sites. For example, it was not possible to obtain valid information on the condition of most of the infrastructure supplied in the city of Erbil. As a result, this evaluation is based in part on a qualitative assessment of the statements of the participating Directorates of Water (DOW). These statements are, however, adequate to determine that at the time of the ex post evaluation the impact of the project is severely limited in some places. The investments financed by the project (construction of a pilot zone with water meters as well as two deep wells and 5.5 km of water pipes in a new residential area (Roshanbiry) in Erbil; acquisition of leak detector units, four vehicles and repair materials and installation of warehouse management software) are only partially in operation. For example, all of the 400 water meters supplied were no longer installed at the time of the EPE and an estimated 90% of the leak detector units have not yet been used in Suleymaniyah. The knowledge taught in the capacity-building measures on finding leaks, investment planning, structuring rate systems, GIS mapping, warehouse management and quality assurance in design and tenders is also only evident to a limited extent. In addition, under the extremely unstable circumstances at the time of the EPE which were characterised by the influx of refugees, the progress made in improved water supply (more connections) and increased operating capacities was not noticeable to the population, which almost entirely prevented the development of increased confidence in the public structures.

Relevance

Apart from the neglect of the water supply network until 2003, the main causes of the poor water supply were correctly identified: the losses of more than 50% of the water produced as well as the rates which did not cover operating costs and were not driven by consumption which resulted in disproportionately high per capita consumption. In view of this situation, the focus on finding leaks, water meters and management appears sensible, especially because most of the water supply networks in the three cities had already been rehabilitated thanks to increased investments in the development of water supply from other donors between 2003 and 2010, e.g. through a JICA project with a scope of USD 300 million, by the time the project was resumed in 2010. By focusing on the rate system and trainings in maintenance and operation of the systems, the FC project adapted to the changed overall conditions and incorporated many of the aspects that had been neglected so far by other donors. Even though these activities were only consistent with the Regional Development Strategy for Kurdistan Region in places, close consultation with the GDWS is evident, particularly in the development of management capacities and the supply of modified equipment and system parts. It remains questionable to what extent the new activities, which focus more on developing structures (building management capacities, developing rate systems, etc.), still fit the definition of an emergency measure with limited sustainability requirement.

The potential impact was also limited by the relatively large programme area combined with a low volume of EUR 3.25 million. The fragmentation into a total of seven different components also lowered the individual impacts to be achieved.

The project's underlying impact logic only marginally includes aspects of stabilisation under (post-) conflict conditions. Consequently, a contribution to stabilising the target structure is added as an aim ex post (see sections "Effectiveness" and "Impact"). Due to the point in time when planning occurred, the BMZ's concept on EC in a fragile context "Development for peace and security" from 2013 could not be considered explicitly. For this reason, the lack of consideration given to a "dual objective" should be weighted less strongly from today's perspective.

Relevance rating: 3

Effectiveness

In the "special agreements" to the financing agreement from 7 August 2003, the KfW and the contracted consultant agreed on the programme objective of making a contribution to a needs-driven, continuous and hygienically clean water supply. Due to the fragile context in the programme area, a second programme objective is added: the state water supplier's increased capacity to provide basic public services is visible to the population.

The original indicators for target achievement (1. Appropriate operation of the systems supplied; 2. Technical management upholds appropriate quality standards at the level of the Directorate General, inter alia in tenders and contracts; 3. Improvement in mutual knowledge of and contacts between German companies in the water sector and representatives of the Iraqi water sector) only appear meaningful to a limited extent, especially because they tend to measure output more than impact. As a result, an analysis of the use of the financed equipment and infrastructure is used to evaluate effectiveness, along with the water loss, the connection rate and the daily duration of supply.

As a result of the limited information available, it cannot be said with complete certainty which system parts and systems are in operation at the time of the EPE. The available information, however, points to a strongly restricted use and thus a low impact. For example, all water meters financed by the FC project (400 units) were never installed or were uninstalled after a short time. In addition, the supplied leak detector units are hardly used (around 90% have never been used in Suleymaniah). Overall it must be assumed that only approx. 40% of the equipment and systems financed by the project have actually been or are actually being used.

Even though there is not enough data to calculate the technical and administrative water losses (Unaccounted for Water, UfW) at the time of the EPE, the estimated water consumption compared to the overall water produced suggests an ongoing high rate of water loss (losses were at a level of around 60% of the drinking water produced at the time of the final monitoring report in 2013).

According to information from the DOWs, the connection rate, at least in Dohuk and Suleymaniah, has decreased since 2010 (from 98% to 95% in Dohuk and from 80% to 74% in Suleymaniah). With 9,031 new households connected in Dohuk and an estimated 39,000 households in Suleymaniah, the decreased connection rate can be attributed to population growth - also due to the high numbers of refugees - which, with an annual growth rate of 6.5% to 8.9%, is much higher than project forecasts in 2010.

The daily duration of supply in the city districts has decreased considerably in all three cities according to information from international organisations. Individual city districts are therefore only supplied with water for a few hours a day.

At the time of the EPE, the second programme objective can also be considered unattained. The renewed conflicts in Iraq and the large flows of refugees are putting excess strain on the water supply system. The DOWs have few resources to counteract this development. In addition, the decline in oil prices and the high costs of the war against IS have reduced budget funds. At the time of the EPE, salaries had not been paid for six months in all three DOWs as well as in the General Directorate of Water and Sewage. Due to this instable and, in some places seriously deteriorated situation in the water supply, the effectiveness is judged to be unsatisfactory.

Effectiveness rating: 4

Efficiency

The largest components of the EUR 1.66 million for the procurement of system parts and equipment were the leak detector units and vehicles (EUR 491,042.30), the water meter pilot zone in Dohuk (EUR 259,411.38) and the expansion of the water supply in Erbil, incl. two deep wells in Erbil (EUR 568,158.05). The leak detector units and water meters are of high quality which is why their costs are higher than the acquisition costs of equipment that is usually applied in Iraq and neighbouring countries. The same holds true for the costs of 380 (planned) new connections in a new residential area in Erbil which are of high quality and entail relatively high costs of EUR 194 per resident. The number of households in the area that were ultimately connected to the water supply network cannot be ascertained ex post due to insufficient information.

Measured in terms of the actual impact (allocation efficiency), the investments are rated not very efficient because, e.g. it can only be assumed that approx. 40% of the equipment supplied is in use. The water meters in the pilot zone in Dohuk were dismantled shortly after the project according to the DOW Dohuk, and consumption-driven rates were never charged there. The pilot zone was thus only used as a training site for a three-week long training on finding leaks. The impact of this training is also questionable given the low rate of use of the leak detector units.

In the section on relevance, it was already mentioned that the distribution of the limited funds to three locations and seven different measures entails inefficiencies.

With this in mind, the efficiency of the project is judged to be unsatisfactory.

Efficiency rating: 4

Impact

The development objective of the project was to contribute to reducing the health risks arising from water rationing and irregular supply in the three cities of Dohuk, Erbil and Suleymaniyah. In order to account for the fragile context, a second overall objective was added on the occasion of the EPE: the project makes a contribution to stabilisation and peacebuilding.

Due to the fact that the project was suspended for seven years, it did of course not help alleviate the crisis situation in 2003 so that all further explanations refer exclusively to the situation after 2010.

Due to insufficient data on water quality in the municipal supply network, it cannot be completely ascertained whether the development objective has been achieved. According to the DOWs in Dohuk and Suleymaniyah, the produced water is chlorinated as it was 2010, but the poor financial situation of the executing agencies creates a serious risk that 100% of the water will not be sufficiently chlorinated. In addition, the reduced supply rates and ever shorter supply durations in all city districts are a sign of deteriorated health conditions. Furthermore, the high number of cholera cases (332 cases since 2012 in the Suleymaniyah city district) is an indication that unsafe water sources are being used.

Contributions to reaching the second development objective are also questionable in view of the current conflict situation. The water networks are overloaded and cannot keep pace with the massive influx of refugees. The administration cannot prevent the water shortage from giving rise to an increased potential for conflict between the various religious and ethnic groups.

Impact rating: 5

Sustainability

At the time of the EPE in the second half of 2016, the DOWs were not able to ensure the sustainability of the project investments. There are high risks from an institutional, organisational and socioeconomic standpoint. The project rating, however, should take into account its limited claim to sustainability (subsection 47 of FC/TC guiding principles), i.e. its suitability for integration with measures designed to promote structural development.

The system parts and equipment acquired under the FC project and the training content were not used or further pursued in a follow-up phase or in projects of other donors. It cannot be ascertained whether the investments are being used as intended at the time of the EPE. As already explained in the sections effectiveness and efficiency, most of the water meters and equipment is not in use. Despite the partially good condition of the equipment, it is highly probable that nothing will change to improve use in the foreseeable future due to the low level of knowledge about how to use the equipment.

The executing agency's ability to cover operating costs is analysed to assess the long-term institutional operating capacity.

Income in relation to operating costs:

| | Dohuk | Suleymaniyah |
|------|-------|--------------|
| 2012 | 16% | 72% |
| 2015 | 5% | 69% |

Even though the operating costs were not completely covered by income from water tariffs at the time of the EPE, the proportion was significantly increased compared to 2012. While this represents considerable progress on the path to sustainable operations, there are enormous risks as a result of the current political situation in the autonomous Kurdish region. The government, which has been weakened by low oil prices, is not able to cover the outstanding operating costs and pay wages in full. This leads to long-term employee absences and thus to reduced efforts in maintenance and debt collection. The risk of a growing strain on the water system as a result of increased numbers of refugees is also high. This could lead to a further increase in health risks as well as to a decline in stability and security in the region.

In spite of the limited claim to sustainability, the sustainability of the project can only be rated as unsatisfactory as the investments are only in operation to a limited extent and, in particular, because the investments have been inadequately transferred to structural approaches or embedded in the support of other donors.

Sustainability rating: 4

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).