Ex post evaluation – Tunisia

Sector: Basic drinking water supply (CRS Code 14031)
Programme/Project: Water supply in rural settlements IV, BMZ No. 1998 65 486 *
Implementing agency: Direction Générale du Génie rural et de l'Exploitation des Eaux (DGGREE)

Ex post evaluation report: 2015

		Investment (Planned)	Investment (Actual)
Total costs	EUR million	11.0	11.39
Counterpart contribution	EUR million	3.69	4.08
Funding	EUR million	7.31	7.31
of which BMZ budget funds	EUR million	7.31	7.31

*) Random sample 2015

Summary: In this open programme, water supply systems in scattered rural settlements spread throughout 8 selected governorates in Tunisia were upgraded or rebuilt with the help of 48 individual projects funded. Acceptance problems with standpipes meant that the design was modified towards using house connections in an increased number of cases. The programme is part of a series of interventions which began in the early 1980s. As part of a participatory planning approach, the executing agency and local user groups were and are supported in setting up the operational organisation in the villages – initially via a capacity building measure concluded and evaluated in 2010 ; since 2012, personnel support has been resumed after the upheaval and also designed for subsequent phases.

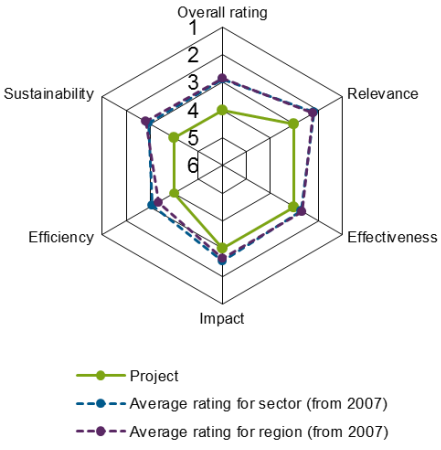
Objectives: The population living in the programme regions was to receive a sufficient, all year round supply of hygienic drinking water (programme objective / "outcome"), which was to contribute towards better health and living conditions (ultimate objective / "impact").

Target group: The population supplied in the villages selected in accordance with pre-defined criteria was estimated at a total of 56,000 beneficiaries (target population). Since a number of the systems were subsequently extended, some 87,000 people are now (2015) connected. Women are frequently responsible for collecting, transporting and using water, particularly in poorer rural areas, and therefore are key beneficiaries.

Overall rating: 4

Rationale: The water supply led to a substantial increase in the beneficiaries' living standards. However, supply security suffers in various cases, and roughly 1/3 of the supply systems struggle with serious operating problems. Some 89% of the original target population and roughly 52% of the population actually connected enjoy a continuous supply. The project-executing agency and local self-governing authorities are unable to prevent lengthy supply disruptions in the event of substantial technical problems and an inadequate availability of water. When supply is disrupted, the hygienic condition of the drinking water cannot be guaranteed.

Highlights: In spite of the political upheaval, local self-governing authorities are able to ensure a relatively regular supply of water in many individual systems. On average, user contributions are socially affordable and cover operating expenses as well as part of the repairs and spare parts. The contributions amount to roughly the equivalent of 0.2-0.5 EUR/m³, less than the average total costs of around 1.4 EUR/m³, but in line with national guidelines. In many cases, households invest in state-subsidised water tanks due to the uncertain supply.



Rating according to DAC criteria

Overall rating: 4

General conditions and classification of the project

German FC has been promoting the water supply in selected scattered rural settlements in Tunisia since 1981 through a total of four programme phases. Many supply schemes were expanded – in some cases considerably – after the end of the programme by the Tunisian authorities, sometimes with financing from third parties; this - at times - overstretched system capacities and created additional operational problems. One element of the FC support included institutional reinforcement in order to enable the self-reliant user groups to sustainably operate the supply systems with the aid of the Regional Offices of Agricultural Development (CRDA). The related personnel support (PS) was concluded in 2010 and evaluated positively. After the political upheaval in 2011, many user groups experienced radical changes in personnel, which in some cases coincided with the loss of operational expertise and relevant documentation. Not least due to this, the above-mentioned PS measure was complemented by a follow-up intervention beginning in 2012, which had not yet been completed at the time of ex-post evaluation (EPE) and thus is not included in this evaluation.

Relevance

The project´s underlying causal relationships between the identified core problem, the programme measures, outcomes and impact, have been plausibly derived. The core problem was defined at programme appraisal (PA) as the lack of safe, adequate and continuous drinking water supply in accessible distances. Although this essentially corresponds to expectations and the problem perception of the in rural areas, Tunisia is meanwhile striving to provide a water supply via household connections in rural areas– and not via standpipes, as was the case at the time of appraisal. The programme supported a national approach to promote self-managed water supply in sparsely populated rural areas; tools and procedures for this purpose have been designed which are still useful today and which can also be used nationwide in programmes implemented by other donors. As the target group of the project were the more disadvantaged people in rural areas, some of whom are poor, the developmental objective also corresponds to the objectives of the current BMZ strategy papers (poverty reduction, sector concept for water); it furthermore contributes to the achievement of the Millennium Development Goal 7.c (halving the proportion of the population without access to safe drinking water and basic sanitation by 2015).

The self-management by user groups has been pushed to its limits in the case of major technical problems and resource shortages. This risk was considered high at the PA and was to be reduced by means of parallel personnel support. Concerning water quantity, no risk was foreseen at PA. However, this has since proved to be a misjudgement, as at the time of PA, multiple systems extensions which took place later on could not have been anticipated. The risk identified initially concerning supply bottlenecks and lack of compliance on delivery obligations by third parties, e.g. the national water supplier (SONEDE) or other user organisations (GDA), has proved to be high.

Relevance rating: 3

Effectiveness

The programme has enabled a substantial portion of the user organisations (eight out of twelve GDAs visited) to essentially ensure a regular water supply despite the political upheavals in Tunisia – largely through household connections. The difficulties of the other visited GDAs were mainly due to a lack of water availability. Improved water supply is greatly appreciated by the users. Just over a quarter of households in the visited GDAs, however, are not supplied continuously (for whole weeks during the summer or individual weekdays) due to lack of water on a temporary basis.

In 2015, around 45,000 people in the programme region benefitted from an adequate, year-round drinking water supply. The programme objective of 90% of the target population, corresponding to 50,400 inhabitants, was not quite achieved. Furthermore, this programme – and subsequent expansion investments with

the support of other agencies – extends to significantly more people overall (approximately 87,000) than was originally planned. Individual systems have considerable down times (serious breakdowns, inadequate water supply from SONEDE or other GDAs, or low yields from drilled wells), with the result that around 23,500 people cannot presently be supplied throughout the entire year. There are also systems in which not all supply zones are continuously supplied;, there, the affected population (an estimated 18,500 people) bridge down times by stocking up on water in state-funded water tanks and in some cases by collecting rainwater. Occasionally, due to negative impacts on flavour (e.g. salt content), residents prefer to consume rainwater or water from other GDAs.

At the time of programme appraisal, supply via standpipes was envisaged; it was assumed that no resulting health risks associated with sewage disposal would arise thanks to dry toilets. In the course of implementation, the design was changed: in rural water supply schemes, household connections prevail, and the majority of households use water toilets. Despite this, average consumption levels are only slightly above the estimates made at PA, and wastewater is primarily disposed of in cesspits in a hygienically safe manner.

Some user groups (four of the twelve visited GDAs) have, or have experienced in the recent past, significant down times due to technical breakdowns and lack of water availability: in two cases, this was due to insufficient supply from the national water supplier SONEDE, in one case, it was the result of the parallel supply to an irrigation system, and in another case it was down to a declining yield from the local well. The voluntary governing bodies of those GDAs depend on support for the necessary repairs and replacement investments; besides, and because of their own outstanding debts, they are often unable to solve their own problems such as defaulted user payments and blocked electricity or water supplies. The programme executing agency's support of the GDA through the Regional Offices of Agricultural Development (CRDA) works reasonably well, but the supply of materials is insufficient, with the result that major problems often remain unresolved over a longer period.

Institutional support measures at local, regional and national levels are assessed very positively by the actors in retrospect. At sites with a certain degree of staff continuity, the self-management approach achieved satisfactory results. Without the support funded by the programme, local water supply management in rural areas would probably have suffered a lot more from the political upheavals of recent years.

Many new household connections have been installed since programme completion. Water consumption outgrew existing capacity in some places as a result, while in some cases incorrectly installed household connections led to operational problems. For political reasons, many systems were expanded into additional districts or connected to neighbouring areas. Frequently, those investments were made without proper planning or consideration of the resource situation and system design parameters. In some cases, supply extensions led to considerable strains on the original systems - and ultimately for the GDAs operating them.

For the purpose of this evaluation, the original outcome indicators defined at programme appraisal were consolidated to some extent and supplemented by the 'water quality' aspect. The desired supply levels were harmonised both for new constructions and rehabilitations, for example. The distinction made at the appraisal between human and other consumption (such as irrigation) is not possible due to a lack of reliable data; similarly, information is available only for non-revenue water, while no reliable data exist for technical losses. In terms of water quality, complete chlorination of the water supplied was not carried out on various occasions. On average, the Ministry of Health finds microbes in 14% of water samples from self-managed rural systems.

It was possible to achieve significant results under difficult conditions during a period of political transition. Overall achievement of outcomes is rated as just satisfactory and can be summarised as follows:

Indicator	Status PA	Ex post evaluation
(1) Population in the coverage area of the individual systems that is supplied with adequate drinking water all year round	No or insufficient supply. Target: 50,400 people (i.e. 90% of a target population of 56,000) are supplied by 20 new and 75 upgraded systems.	Of 56,000 people, around 45,000 receive all- year-round supply from 11 new and 37 upgraded systems. Indicator 89% fulfilled

		(vs. target at PA) or 52% (vs. actual population reached of 87,000).
(2) Percentage of the target population (56,000) which purchases additional water or obtains water elsewhere	Not known, but high Target: maximum 10%	Only ascertainable for total population (87,000): approximately 23,500 people (27%) are regularly dependent on water from other sources; a further 18,500 inhabitants (i.e. 21%) are supplied intermittently zones
(3) Consumption per capita and day (l/cd)	Estimated 30 l/cd Target: 50 l/cd	57 l/cd in working systems (21 l/cd in systems with operational problems)
(4) Non revenue water (NRW)	Not known Target: technical losses max. 20%	Only total values ascertainable (32%) - 20% in working systems (14 l/cd) - 50% in systems with operational problems (21 l/cd)
(5) The drinking water is hygienically safe	Existing health risks (no target formulated)	Essentially achieved, but residual risks remain in systems without a continuous water supply (14% of all rural samples contaminated)

Effectiveness rating: 3

Efficiency

In comparison to the construction of new systems, upgrading has played a more important role than originally planned. The envisaged cost limit for new constructions of 450 TND per capita (approximately EUR 265 when converted) was almost always adhered to, while the limit for upgrading – equivalent to EUR 88 per head – was exceeded in slightly more than half of the individual projects. In many of the systems visited, upgrading and expansion investments carried out since programme completion exceed the investments received during the course of the programme. This could be an indication that the cost limit set during the programme was not actually sufficient to appropriately design the systems for the planned 2015 horizon. In particular investments in systems with inadequate water supplies appear inefficient from today's perspective: frequent supply interruptions of the water– especially in the case of high lime levels – lead to premature wear of the supply systems caused by deposits and pipe blockages. Programme implementation took 130 instead of 43 months. The main reasons for the delay were insufficient studies of the initially commissioned local offices, slow collection of the financial contributions required from beneficiaries and delays in awarding construction contracts. Consulting costs for design and supervision have almost doubled in comparison to the planning at PA and make up a good 20% of investments on average. Overall, the production efficiency is no longer considered satisfactory.

In some instances, esp. due to the high demand for household connections, specific consumption exceeded planning levels – and respective production capacity was pushed to its limits, especially in the case of systems expanded after completion. The individual investments in the framework of the programme did not always achieve their planned useful lives due to the technical design weaknesses men-

tioned above, intermittent operation, counter-productive interventions – such as poorly planned network expansions – non-compliant household connections and occasional vandalism. As a rule, replacement investments tend to be delayed. In the case of substantial investments (e.g. replacement wells), be down times can last up to 12 months.

On average, the visited GDAs charge socially compatible user contributions between 0.5 and 1 TND/m³ (equivalent to EUR 0.25 - 0.5). As a rule, this income not only covers current expenditures (personnel, electricity, supplies, etc.), but also a portion of the expenditure for repairs and spare parts . User charges which are significantly lower than the full costs are politically justified by even lower urban water prices. However, there is no pricing incentive for considerate consumption, e.g. using staggered, consumption-based rates. This - in contrast - is practised to some extent in systems which were handed over to the water supplier SONEDE after being built. There, users complain of significantly higher water expenses due to differential rates - in comparison to the GDA-operated systems. Overall, allocation efficiency is deemed to be no longer satisfactory.

The CRDA estimate the annual investment needs in rural systems under their responsibility to be currently around TND 40 to 80 (i.e. EUR 19 - 38) per inhabitant per year. In the case of per capita consumption of 20 m³ per year, this corresponds to at least 2 TND/m³. The government undertakes the financing of all investments and replacement investments to a satisfactory level, though not always in a timely manner. The Regional Offices of Agricultural Development (CRDA) responsible for looking after the GDAs are somewhat overstretched in trying to resolve problem cases. GDAs with operational problems are frequently understaffed and fail to articulate their problems in as resolutely as other GDAs. As a result, the limited financial resources of the CRDA are more likely to be budgeted for GDAs that actively demand support. CRDA capacities are often insufficient to proactively develop solutions for weaker GDAs. The GDAs' managing costs are significantly lower than those of other operators (SONEDE, private sector). The GDAs can attract and retain sufficient numbers of competent staff with primary or secondary education. Meter reading and billing are normally remunerated in the well-functioning GDAs.

Efficiency rating: 4

Impact

The programme aimed to contribute to improving general living conditions and to reducing health risks for the rural population. In particular, beneficiaries rated the household connections as a significant improvement in their quality of life. During and in particular after implementation of the programme, six times as many household connections were installed than originally planned. The expected health effects were, however, only achieved to some extent (see above - “Effectiveness”). Those effects are also far less pronounced where the water is contaminated with microbes (14% of rural systems). The health risks caused by wastewater are negligible, since the households normally use septic tanks. At individual locations without sufficient seepage, the disposal of latrine sludge represents a residual risk. In line with effectiveness rating, the developmental impact is assessed as just satisfactory.

Impact rating: 3

Sustainability

In general, the fees required for operating costs, maintenance and minor repairs do not exceed the users' capabilities. Since the revolution, however, a low willingness to pay and correspondingly low incomes represent an increasing sustainability risk, particularly in poor areas with high operating costs. Frequently, GDAs set fees too low and neglect the necessary ongoing maintenance of plants. This increases subsequent repair costs and the frequency of breakdowns. Additional investment requirements are to be expected in the near future in this context, in particular for the adjustment of systems whose target populations, and in some cases also their specific consumption levels, exceed the original estimations. This also applies to securing sufficient water resources for systems that are not currently operated or which are only operated to an insufficient extent as a result of lack of resources, technical follow-up problems and lack of effective management by the user groups. Current estimates suggest that sustainability is at risk in at least 1/3 of the systems. In this connection, it should not be ruled out that the above-mentioned PS meas-

ure, which targets, among others, the user groups of this project, might lead to improved operational prospects for systems currently functioning poorly, at least in the medium term.

The post-revolutionary circumstances, among other factors, have led to repeated personnel changes within the self-governing authorities – often with the result of technical documentation, accounting records and procedural documents becoming untraceable. Functioning GDAs are generally able to recruit sufficiently competent persons who will volunteer to sit on the Supervisory Board, while the GDAs experiencing difficulties often have trouble finding anyone willing to show commitment. The CRDA do not always manage to solve the management problems of the individual GDAs or to provide adequate support for new management teams. In some regions, further training and qualification of responsible CRDA personnel is deemed particularly necessary in order to address sustainability risks arising from unresolved GDA management problems. However, the CRDA generally succeed in adequately preparing employees with a lower level of education for their tasks, by providing appropriate further training, which usually results in them being retained as GDA staff members for longer periods.

From today's perspective, the approach for operating systems on a local self-governance basis has proven itself in cases with sufficient water resources and without major technical problems; however, it is being pushed to its limits by problematic operating conditions (see above).

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).