

Ex Post-Evaluation Brief Morocco: Rural Water Supply I and II

Programme/Client	Rural Water Supply I, BMZ no. 1997 65 611 (inv.) / 1997 70 215 (AM) Rural Water Supply II, BMZ no. 2002 65 306* (inv.) / 2002 70 124	
Programme executing agency	Office national de l'eau et de l'électricité (ONEE)	
Year of sample/ex post evaluation report: 2012/2012		
	Appraisal (planned)	Ex post-evaluation (actual)
Investment costs (total)	I: EUR 7.93 million (inv.) I: EUR 1.28 million (AM) II: EUR 4.60 million (inv.) II: EUR 0.5 million (AM)	I: EUR 7.93 million (inv.) I: EUR 1.28 million (AM) II: EUR 6.44 million (inv.) II: EUR 0.5 million (AM)
Counterpart contribution (company)	I+II: EUR 7.3 million (inv.)	I+II: EUR 8.43 million (inv.)
Funding, of which budget funds (BMZ)	I: EUR 9.21 million (inv.+ AM) II: EUR 5.11 million (inv.+ AM)	I: EUR 9.21 million (inv.+ AM) II: EUR 6.95 million (inv.+ AM)

* random sample; ** without counterpart contribution, as cannot be assigned precisely to different phases

Project description: Through the programmes “Rural Water Supply I and II”, autonomous water supply systems with household connections were built in rural municipalities in Taroudant and Tiznit provinces, in order to provide the population there with continuous access to drinking water. To support the investment, an accompanying measure was conducted in the villages. This involved training user committees, most of which already existed, in locally autonomous operation and maintenance of the infrastructure, and establishing an operational support system for these user committees with the project executing agency – the national water utility. This ensured local operation of the infrastructure at the municipal level, including maintenance works. Furthermore, the target group were also trained in hygienic drinking water management. The programme pursued a demand-driven and participatory approach that required the municipalities to apply for a drilled well and the funding of its construction. Given time and thematic overlaps, the two phases were evaluated together.

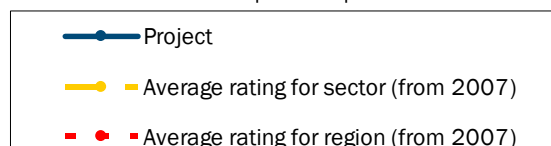
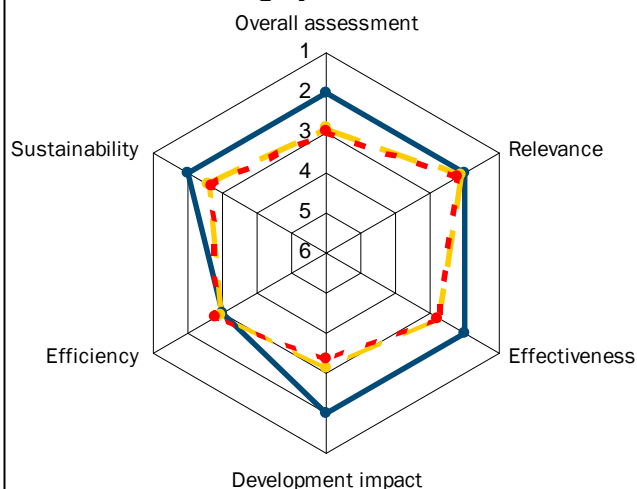
Objectives: The overall objective of the programmes was to improve general living conditions and reduce water-borne diseases in rural areas of Taroudant and Tiznit provinces. Against this background, the programme objective was to supply the inhabitants of the selected municipalities with at least 15 litres of safe drinking water per capita per year on a year-round basis – especially via household connections. **Target group:** The inhabitants of rural municipalities in Taroudant and Tiznit provinces.

Overall rating (phases I and II): 2

The programme (phases I and II) made a successful contribution in the target region toward improving the living conditions of the inhabitants of small villages, and enabling the existing user committees to operate the systems sustainably, within their means. The programme executing agency – the state water and power utility – is currently supporting the user committees with technical issues to a sufficient degree. The water quality has been analysed only indirectly and not on a regular basis. Furthermore, measures to raise awareness on appropriate drinking water management have been implemented only through the consultant, and there remains a long-term moderate risk that the groundwater level in the region may fall.

Of note: Autonomous water systems are particularly well suited to the programme region, because autonomous user communities already existed there (also in other areas). Moreover, users' willingness to pay was high from the outset, ultimately ensuring excellent cost recovery.

Rating by DAC criteria



EVALUATION SUMMARY

Overall rating: Due to the good condition of the systems, the professional way they are being operated, the excellent autonomous local management (ownership, cost recovery), and the appropriate support currently being provided, positive results have been generated for the target group. We therefore rate the programme as good. **Rating (phase I and II): 2**

Relevance: When the programme phases were appraised, increasing the connection rate within the population to ensure an adequate water supply was a core concern of the Moroccan Water Strategy. In 2011 the connection rate among the urban population was virtually 100%, and among the rural population 92% – this figure including not only household connections, but also taps within a range of 500 m. Increasing the connection rate in rural areas, including the household connection rate, remains a target. Priority is attached to the continuous supply of water of appropriate quality. Other issues, such as improving sanitation, also enjoy equal priority, however.

ONEE is the key implementing organisation responsible for achieving this objective outside the major urban centres. For rural water supply, ONEE attaches priority to pursuing so-called “structural projects” (remote water supply systems based on surface water). However, since this approach is not feasible at all locations, a complementary approach of promoting autonomous water systems is also being pursued. This approach is particularly suitable in the south of Morocco, where the population possess a high degree of organisation, and therefore a strong sense of ownership of operation and maintenance, as well as the willingness to pay for water supply.

From today’s perspective, the programme strategy appears well-suited to helping reduce the core problem – inadequate drinking water supply to the rural population and the target regions. The final package of measures was logically coherent overall. The level of technology initially selected (water delivered chiefly through public standpipes) did not meet the expectations of the target group, who soon decided to switch to individual household connections. This requirement was met – looking back rightly so – and the systems were designed accordingly. The additional costs for the household connections were met largely by the users (DH 800 – 2,500/household), in addition to the counterpart contribution of around 5% of the costs of the distribution system that was already required. We therefore judge the design as appropriate on the whole. One point of criticism is that the programmes did not include a sanitation component.

Other donors are also operating in the field of rural water supply. Their activities include the development of both, centralised and autonomous supply systems (e.g. World Bank, JICA, Belgian development cooperation). Regular coordination meetings are held at the national level, especially as part of a thematic working group on “water”. We note that the programme is well aligned both with Morocco’s water sector policy, and the BMZ country

strategy. Donor coordination appears to be working smoothly with regard to support for the national sector strategy.

The programmes addressed a major problem in water supply in rural areas, and were aligned with Morocco's national water strategy. We therefore rate the relevance of the programmes as good. Sub-Rating (phases I and II): 2

Effectiveness: The original programme concept provided for the construction of a total of 200 (150 and 50) non-centralised, autonomously operated systems in the Taroudant and Tiznit regions, with 194,000 connected inhabitants. This quantitative target was clearly too ambitious, and above all failed to take adequate account of various cost items (see "Efficiency" below). Ninety-five systems were realised, 7 of them in Tiznit, which is equivalent to 47.5% of the planned target. Within the planning horizon to 2015, 113,000 inhabitants will be supplied, which is equivalent to 58.4% of the planned target. The investment costs per connected head of population proved significantly higher than planned though may still be considered appropriate. In our view, it would have been warranted to adjust the quantitative targets in the course of the programmes.

We analysed the qualitative criteria and indicators in relation to the systems actually realised. Overall a highly positive picture emerged.

1. 75% of the concerned population have access to adequate quantities of safe drinking water. The supply concept was adjusted at the users' request to include only household connections (with users assuming the additional costs for these). As a result, an overall connection rate of virtually 100% was achieved. On top of that, schools and mosques were supplied via communal connections.
2. Three years after commissioning, water consumption is at least 10-15 l/capita/day. The statistics contained in the operating reports for 2011 show an average water consumption of over 24 l/capita/day. Only 6% of the systems show an average consumption that falls just short of the target. 57% of the systems consume >20 l/capita/day, with the highest value being 58 l.
3. Two thirds of the systems are being properly operated, and at least the operating costs are being recovered through revenues. This criterion would appear to have been surpassed by a significant margin. Evidently all the systems are being operated as properly as they could be (in all cases the user groups employ and pay operating technicians), tariffs are reviewed annually on the basis of budget plans, and collection rates are high. In our view, this is due to the close support and high quality training provided to the user groups during programme preparation and implementation, and after commissioning.

4. With household connections, appropriate sanitation (latrines, septic tanks) is achieved in 75% of cases: According to information supplied by the programme executing agency, in 2011 a connection rate of 60% was achieved. In view of the fact that no investment grant was provided and this improvement was achieved exclusively through hygiene campaigns, this is certainly a good result. The good result varies widely, however, ranging between 10% and virtually 100%, depending on the system.
5. Water quality is assured to Moroccan standards: During the evaluation mission water tests were conducted by the programme executing agency in the villages visited. In 3 out of 6 systems a very slight microbial contamination was detected, though this was not believed to pose a health risk. No systematic monitoring of drinking water quality (physico-chemical or bacteriological) takes place. Before the works were commenced the yield and quality of the water resources were tested. According to the information we received, during operation the water is usually chlorinated, and maintenance of the infrastructure appears to be professional. According to information supplied by the programme executing agency, in 2011 sufficient chlorination was performed in 66% of the systems. In some villages the population has reservations concerning chlorination, though in none of these villages were there reports of a higher incidence of diarrhoeal diseases. Overall, though, there is a need to catch up with regard to water quality monitoring.

In summary, we can attest that the programme was very effective. Three of the five qualitative criteria were surpassed by a significant margin, while with regard to the other two criteria a good overall trend is evident, even though there is a need for further improvement. Sub-Rating (phases I and II): 2

Efficiency: Implementation period: Implementation of the programmes took significantly longer than it was planned (phase I of the programme was launched in 1999, the last system was commissioned in phase II in 2012). One key reason for this is the long period required for a successful participatory approach and for rigorous user support during programme preparation, including the necessary training measures. Bearing these conditions in mind the implementation period was appropriate, as it would not have been possible to implement a participatory approach more rapidly, given the time this takes.

Investment costs: The significantly higher costs are explained by the fact that at appraisal, insufficient account or no account at all was taken of the following cost items:

1. Significant delays, entailing price increases for construction.
2. A significant higher number of new water resources developed (wells).
3. New local design plans were required on a considerable scale.
4. At the users' request only household connections were realised; the systems were correspondingly larger, and the investment costs rose.

Nevertheless, the specific costs and prices do appear appropriate. Additional costs were appropriate due to the additional work and the more complex participatory approach. The contracts were awarded transparently under competitive conditions.

Capacity utilisation of the infrastructure: The capacity utilisation of the infrastructure was on average very good (average consumption: 24 l/capita/day; 94% consume > 10l/capita/day). Downtimes caused by technical malfunctions were extremely low (only 6 out of 95 systems were affected, 19 days of downtime in total).

Efficiency of collection: Very good. The average collection rate in 2011 was 95.75%. This rate has been fluctuating slightly since 2005, but was always >90%. The proportion of systems with a collection rate <80% is low, at just under 8%.

Tariffs and cost recovery: All the systems have a two-tier tariff comprising a fixed monthly rate (of DH 6 to 20) plus a consumption-based rate of DH 3-10/m³. These tariffs are reviewed regularly on the basis of an annual budget plan and the net income for the previous year. They cover the recurrent operating costs as well as expenditure on repair and maintenance (in all cases recovered in full), plus a reserve for investment in replacements (of the electromechanical equipment). Overall, larger reserves were formed from fee revenues than would have been necessary. Even so, there was still a significant shortfall in cost recovery for 12 systems. Sub-Rating (phases I and II): 3.

Impact: The modified overall objective of the programme was to help improve living conditions in general and reduce waterborne diseases in the selected municipalities of the regions of Taroudant and Tiznit. No indicators were defined. Therefore, the achievement of this objective can only be judged qualitatively.

Water tests carried out on the ground revealed a very low level of microbial contamination in a few cases, though this did not pose a threat to health. Given the fact that the systems are being operated properly and chlorination is documented, it can be assumed that normally there will be no microbial contamination, and therefore that a contribution has been made toward reducing waterborne diseases.

Concerning living conditions, the population confirmed that the systems had improved their security of supply and significantly reduced transportation distances. Since tradition in the region makes females responsible for fetching water, women and girls (who now find it easier to attend school) are benefitting to a particular degree from this.

Furthermore, there are also positive external effects on the economy. These include the creation of jobs for operating technicians and local companies involved in maintenance.

On the basis of these results, we rate the impact as good. Sub-Rating (phases I and II): 2.

Sustainability: Concerning the sustainable operation of the infrastructure by the user committees, the mission established that all the systems visited were in very good condition for their age. As indicated above, the financial reserves vary in size, but in most cases cover the needed investments for replacement (of the equipment). The tariffs are therefore cost-covering.

One questionable aspect is the increase in technical losses, especially in the distribution systems financed from the user communities' own contributions, and operationalised and run by them on their own responsibility (tertiary systems, household connections). Here there is a need for greater follow-up support, which might also be delivered through the newly-established user groups' association. This association for instance organise leak detection programmes.

The level of training of the user committees appears sufficient to guarantee sustainable operation. The programme executing agency is planning further regular training measures. The user committees are also being supported in operating the systems by the *Agence Mixte*, which checks the systems once or twice a year and is available on request. We also believe that the newly-established user committees' association will make a contribution towards sustainability, because it can pool interests, act as an intermediary for dealing with the ONEE, and foster knowledge sharing between the committees. The association has also negotiated a framework agreement with a local company that contains attractive conditions for the maintenance of systems. ONEE is also an advocate of this association.

One risk for the sustainability of the systems is the long-term availability of groundwater. When the final review was carried out (2008), two systems had run dry. Following the high rainfall of the last few years the groundwater level has risen again significantly, and sufficient quantities of this resource are currently available for all systems. A water use agreement now also exists for the Souss-Massa Plain region. This was put in place to manage agricultural groundwater use, which remains considerable. Compliance with this agreement is still not being monitored sufficiently, however. Technical Cooperation (TC) has been supporting the establishment of a monitoring system since 2008. The ONEE is currently planning a pipeline to supply the city of Taroudant, which will be co-financed by Financial Cooperation (FC). Autonomous systems whose future groundwater supplies would be jeopardised could be connected to this pipeline. Water supply would then remain secure. However, the investments (wells) financed by the programme would not be sustainable in the long run. Nevertheless, since it can be assumed that in general adequate groundwater resources will be available to run the systems, and there would have been no alternative option for supplying for the population, we rate the sustainability of the systems as good. Sub-Rating (phases I and II): 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:

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| 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).