Mauritania: Water Supply in Rural Areas in South-Eastern Mauritania

Ex-post evaluation

OECD sector	14030 / Water supply and sewage disposal for poor people	
BMZ project ID	Investment in fixed assets: 1994 65 659 Personnel Support: 1995 70 268	
Project-executing agency	Water Management Division in the Ministry of Energy	
Consultant	GKW, GTZ	
Year of ex-post evaluation	2005	
	Project appraisal (planned)	**Ex-post evaluation (actual)**
Start of implementation	3rd quarter 1995	2nd quarter 1996
Period of implementation	32	60
Investment costs	EUR 2.6 million	EUR 1.6 million
Counterpart contribution	Scooping equipment, contributions in kind and financial contributions to finance repairs	Scooping equipment, towing ropes
Financing, of which Financial Cooperation (FC) funds	100 % FC	100 % FC
Other institutions/donors involved	-	-
Performance rating	5	
• Significance / relevance	5	
• Effectiveness	5	
• Efficiency	4	

Brief Description, Overall Objective and Programme Objectives with Indicators

The open programme comprised the construction of 44 dug wells in the provinces of Hodh El Gharbi, Hodh El Charki und Assaba in the southwest of Mauritania. In parallel a hygiene and sensitisation campaign was implemented as a complementary measure.

The objective of the programme was to sustainably improve the drinking water supply by providing drinking water year-round in sufficient quantity and quality. The programme aimed to improve and stabilise the living conditions of the rural population by reducing the health risks faced by the target group (overall objective). The following indicators for the achievement of the programme goal were defined:

- demand-oriented consumption of approximately 20 l/cd on average per year;
- 80% of the rehabilitated or newly built wells are fully functional;
- water is available in the wells around the year;
- no faecal coliform bacteria are detected in the water.

The recipient of the financial contribution was the Islamic Republic of Mauritania, represented by the Ministry of Planning. The project-executing agency was the Water Management Division in the Ministry of Energy.

Project Design / Major Deviations from the original Project Planning and their main Causes

The investment measures implemented under the open programme comprised the new construction of 50 dug wells in villages determined on the basis of predefined selection criteria. Besides the water demand, the existence or the built-up of user committees was the prerequisite for villages to take part in the programme. Moreover, well sites should not be in the immediate catchment area of nomadic pasture farming. This criterion could not be fulfilled because it turned out that there were no firm nomadic pasture routes in the programme area. The rehabilitation of 50 existing wells, which had been envisaged at the time of the project appraisal, was dropped and instead the construction of 50 additional wells was planned. Due to an early programme termination, only 44 of the planned 100 wells had been built at the time of the final evaluation. Six construction sites for wells that had been partly finished at considerable expense and effort had been abandoned. The project was discontinued because the implementation capacities of the local firms and the well construction brigades of the project-executing agency turned out to be totally inadequate.

In addition to the investment measure, sensitisation and hygiene education campaigns were carried out. These campaigns helped to support the target groups in establishing user committees which were then trained to assume the operation and maintenance of the wells. The target population also received information on general hygiene and rules of conduct on how to handle drinking water.

Key Results of the Impact Analysis and Performance Rating

At the time of the final evaluation it turned out that none of the indicators for the achievement of the programme objectives had been fully met. According to estimates the quantity of water available for human consumption at those wells that were functioning was 5 to 15 l/cd. In order to also cover the cattle watering needs the water available at the wells was usually used to the maximum. In most cases this high water consumption level is not compatible with the long-term production capacities of the wells. In 11 of the villages visited, which have together around 6,000 inhabitants (this corresponds to both 25% of all newly constructed wells and around 25% of the entire target group), the production capacities have been almost depleted and the water quantities that can still be taken from the wells are very small. It can be assumed that on the whole only about 50% of the completed wells are functioning all year round and can ensure a sufficient supply of water. Though the responsible Mauritanian authorities did not examine the water quality, in particular with regard to the existence of faecal coliform bacteria in the wells in the programme villages, it is highly likely that due to the obvious pollution of the sites of many of the wells, and in some instances the pollution of the well water itself, the quality of the drinking water is insufficient and bacterial pollution can be assumed.

At the time of the project appraisal the water supply of the population in the programme region had been totally insufficient. The target group had to use traditional wells and, depending on the season, had to rely on natural water points with unsafe drinking water. Though in 2005 a part of the target group had access to drinking water from modern dug wells the quality of the water does in most cases not meet the standards of the World Health Organisation. Moreover, the hygienic condition at the well sites is totally inadequate in most villages. The attempt made in the context of the

complementary measure to incite the villagers to improve their hygiene behaviour through education campaigns has hardly had any impact. The unsafe drinking water constitutes a health risk to the population, especially small children under the age of five.
In most cases the transport distances have been reduced because the well sites are closer to people's homes than the traditional water points and this means time savings for women and children, who are responsible for carrying the drinking water from the wells to their homes. However, it was not possible to strengthen the social role of women in the long term, because they are no longer active in the user committees.

The programmes aimed at satisfying the needs of the mostly poor population. Moreover, the objective was to have the target group participate in the project. By creating and training user committees participatory rural development was to be supported and a contribution to the self-administration of the villages to be made. However, the participatory programme approach failed because most of the user committees do no longer exist or have abandoned their activities.

Due to the inadequate maintenance of the well by the Water Management Division and the users as well as the poor hygienic condition at the well sites it can be assumed that the quantitative and qualitative production capacities of the wells will decline progressively. Contrary to what had been planned, the wells, which were primarily designed for supplying drinking water, are now largely being used to water the cattle of the villagers and partly also the animals of nomads passing through the villages. We rate the effectiveness of the programme as clearly inadequate because most of the programme objectives were missed (sub-rating: 5).

Though a contribution is made to improving and stabilising the living conditions of the rural population due to the improved cattle watering opportunities at the wells the project was not able to contribute to reducing the health risks to the target group because the well sites were usually very dirty and the water produced by the wells was often equally dirty and polluted. Nevertheless, it has to be mentioned that the water supply capacities created helped to improve, at least in terms of quantity, the supply of water to the mostly poor target group, for whom water is still an absolute priority. Contrary to the original planning, only 44 of 100 wells were actually completed and this means that only the expected minimum of people from the target group was reached. We rate the developmental relevance and significance of the programme as clearly inadequate (sub-rating: 5).

The investment costs per well are higher than the empirical values experienced in projects implemented under similar framework conditions in neighbouring countries. However, the specific investment costs, and thus the production efficiency in the villages with more than 1,000 inhabitants, are still acceptable. On the other hand, the allocation efficiency is unsatisfactory due to the fact that no full coverage of costs was achieved as well as the fact that the maintenance of the wells was neglected and as a result most of the wells were no longer functioning properly at an early stage. Overall, the project's efficiency is slightly insufficient (sub-rating 4).

After weighing the above key criteria we classify the programme as having generally clearly insufficient developmental effectiveness (rating 5).

General Conclusions

Interventions in areas where no experience has been gained before usually require a thorough analysis in the context of preparatory studies. In the present case it would have been necessary to watch the drawing and watering behaviour of the target group more closely in order to be able to define appropriate technologies and measures. If

people tend to use unhygienic drawing and watering practices, which cannot be influenced through sensitisation measures, it is advisable to built closed bore wells in order to prevent the direct entry of dirt and contaminants. If wells are used by both humans and animals an alternative for animal raisers might be to have wells near the grazing grounds so that they do no have to bring the animals to the wells used by humans.

If it turns out in the course of a programme that central planning assumptions which are relevant for achieving the objectives (for instance, in terms of village size, institutional structures, watering behaviour, etc.) were not correct the programme should either be terminated at an early stage or else the programme concept should be reviewed.

Influencing the long-established socio-cultural behaviour in the area of water production and consumption is only possible if the target group benefits of sensitization and hygiene education over a longer period of time. For this reason it would be advisable to institutionalise all follow up measures for a project at the local level. If this is not possible, for instance due to inadequate financial and personnel resources of the respective organisation, staff support should be envisaged for a sufficient period of time once the investment measures were concluded in order to durably alter the behaviour that has developed over time with regard to water production.

The assumption that traditional, long-established nomadic routes exist proved not to be correct. Instead, the migratory routes of the nomads are influenced by the supply of water and, thus, by the infrastructure created under FC measures.

Even the most primitive draw wells require regular maintenance, and if the target group is not able to ensure this maintenance suitable structures have to exist or to be created to enable this maintenance. Otherwise, the sustainability of the project and its impacts are at risk.

Legend

Developmentally successful: Ratings 1 to 3	
Rating 1	**Very high or high degree of developmental effectiveness**
Rating 2	**Satisfactory developmental effectiveness**
Rating 3	**Overall sufficient degree of developmental effectiveness**
Developmental failures: Ratings 4 to 6	
Rating 4	**Overall slightly insufficient degree of developmental effectiveness**
Rating 5	**Clearly insufficient degree of developmental effectiveness**
Rating 6	**The project is a total failure**

Criteria for the Evaluation of Project Success

The evaluation of the "developmental effectiveness" of a project and its classification during the ex-post evaluation into one of the various levels of success described in more detail below concentrate on the following fundamental questions:

- Are the **project objectives** reached to a sufficient degree (aspect of project **effectiveness**)?
- Does the project generate sufficient **significant developmental effects** (project **relevance** and **significance** measured by the achievement of the overall development-policy objective defined beforehand and its effects in political, institutional, socio-economic and socio-cultural as well as ecological terms)?

- Are the **funds/expenses** that were and are being employed/incurred to reach the objectives **appropriate** and how can the project's microeconomic and macroeconomic impact be measured (aspect of **efficiency** of the project conception)?
- To the extent that undesired **(side) effects** occur, are these tolerable?

We do not treat **sustainability**, a key aspect to consider for project evaluation, as a separate category of evaluation but instead as a cross-cutting element of all four fundamental questions on project success. A project is sustainable if the project-executing agency and/or the target group are able to continue to use the project facilities that have been built for a period of time that is, overall, adequate in economic terms, or to carry on with the project activities on their own and generate positive results after the financial, organisational and/or technical support has come to an end.