

Ex post evaluation – Benin

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Sector: 14030 Basic drinking water supply and basic sanitation
Project: CP Rural water supply IV (BMZ No. 2002 66 643)*
Programme executing agency: Direction Générale de l'Eau (DG Eau)



Ex post evaluation report: 2014

		Project A (Planned)	Project A (Actual)
Investment costs (total)	EUR million	4.19	4,20
Own contribution	EUR million	0,19	0,20
Funding	EUR million	4,00	4,00
of which BMZ budget funds	EUR million	4,00	4,00

*) Projects in 2014 random sample

Description: The programme was aimed at improving the water supply for the rural population in the four provinces of Mono, Ouémé, Couffo and Plateau in the south of the country, and thereby making a contribution to reducing the potential risk of water-induced diseases in the region. The project comprised the construction and the rehabilitation of drilled wells with hand or foot-operated pumps as well as small, central supply systems connected to public standpipes. Disposal facilities were also installed in central areas. Alongside investment in physical assets, the German TC raised the target group's awareness for managing drinking water hygienically as well. The project was based on a demand-driven approach, which involved the communities applying for a drilled well and making their own financial contribution to its construction. From a conceptual perspective the programme was a continuation of Phases I to III.

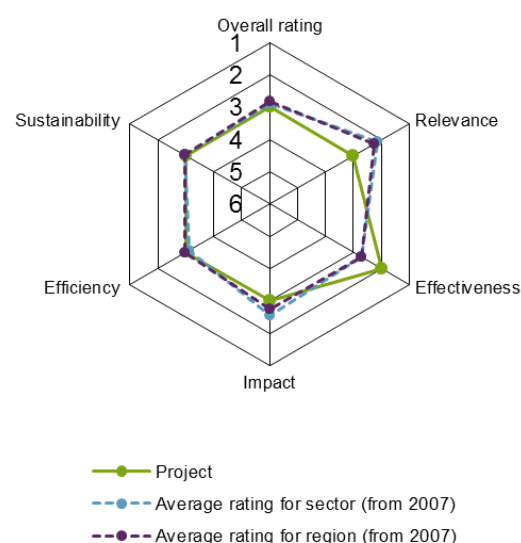
Objectives: The programme's overall development objectives were to improve general living standards and reduce water-induced diseases in the programme region. The module objective was to bring about a sustainable quantitative and qualitative improvement in the water supply of the rural population in the programme region, and selective improvements in the disposal situation.

Target group: The target group comprised the population of rural communities in the four provinces of Mono, Ouémé, Couffo and Plateau in the south of the country.

Overall rating: 3

Rationale: The programme successfully helped to improve the living conditions of the residents in the target regions and bring about a decentralisation of the rural water supply in Benin. Qualifying this success, there are indications that the microbiological quality of water at the point of use is not faultless in many cases, which is caused by inadequate transport and storage procedures.

Highlights: The ex-post evaluation benefited from the results of a rigorous German-Dutch evaluation of rural water projects in Benin in 2011.



Rating according to DAC criteria

Overall rating: 3

Overall, Phase IV of the Rural Water Supply programme is rated satisfactory. Even though the programme may not have achieved all the intended health effects due to contamination of the water during transport and storage, it contributed to reducing water-induced diseases as well as creating the preconditions for sustainable water infrastructure. Additionally, the programme contributed to an improvement of living conditions among the target group by reducing long distances, physical burdens and the time required to collect water. Measured against the complexity of the institutional framework and the challenge of supporting the decentralisation process, the programme can still be considered successful.

Relevance

The programme corresponds with the Water Sector Strategy of the German federal government and of the partner country. The donors and the Benin government pursued a common policy in the rural water sector by means of the PADEAR programme (Programme d'Appui au Développement du Secteur de l'Eau et de l'Assainissement en Milieu Rural). The objective here was to extend the rural population's access to clean drinking water and sanitation, to further decentralise the operation of the system, and to integrate the private sector into providing services in the areas of maintenance, repairs and the sale of spare parts.

The programme was aimed at one of the core problems facing the rural population in Benin, namely the shortage of hygienically safe and continuously accessible water among the population. The programme appraisal in 2002 revealed that the proportion of the rural population with access to clean drinking water was estimated to be 45%. In the four provinces of the programme region this proportion (36 % Mono/Coffou; 40 % Ouémé/ Plateau) as well as the average daily per capita consumption at 6 l/cd (litres per capita and day) were even lower. To eliminate this obstacle to development, small communities with insufficient access were included in the scope of a demand-oriented approach. Raising the target group's awareness about hygiene issues related to drinking water was a key component of the programme, implemented by the German TC together with local non-governmental organisations. This was designed to prevent the contamination of drinking water through incorrect transport or incorrect storage and therefore create a positive health effect through the provision of clean drinking water.

The programme was based on the assumption that access to public water sources in relation with (selective) hygiene measures would contribute to reducing water-induced diseases (especially diarrhoea, skin irritations and parasites). While there were initial indications at the programme appraisal, this assumed interdependency has to be critically scrutinised, especially due to empirical findings in recent years. The empirical findings of the Dutch developmental unit in the Ministry for Foreign Affairs (IOB - Inspectie Ontwikkelingssamenwerking en Beleidsevaluatie) and the BMZ collected from research conducted in 2011 concerning the rural water supply showed, for instance, that water was often recontaminated during transport and storage.

Aside from this, the concept and objectives of the programme were well tailored to the problems of the Beninese water sector as well as the urgent basic needs of the target group. The technical solutions chosen were appropriate to local conditions. Due to the limitations mentioned above, the relevance of the programme is rated satisfactory.

Relevance rating: 3

Effectiveness

The module objective was to bring about a sustainable quantitative and qualitative improvement in the water supply of the rural population in the programme region, and selective improvements in the waste disposal situation. The indicators for reaching the module objectives are fulfilled as follows:

Indicator	Status programme appraisal	Ex-post evaluation
(1) Supplying residents with hygienically safe drinking water.	80,000	180,000 (fulfilled)
(2) Average water consumption per capita per day (taking expected seasonal fluctuations into account).	20 l/cd	12 - 35 l/cd (largely fulfilled)
(3) Operational availability of water supply facilities.	> 85 %	90 % (fulfilled)
(4) Distance to tap/daily time saved while fetching water (new).	Distance < 500 meters Time saved > 2.5 h/day	Distance < 500 meters (fulfilled) Time saved 2 - 3 h/day (fulfilled)

The target value for the population with access to clean drinking water has been fulfilled. The construction of a new water source also leads to a 30 % increase in the proportion of households obtaining their water (exclusively) from clean sources. In villages where a clean water source was installed for the first time this effect is even greater, amounting to 74 % (or 46 % if only using the improved source).¹

Although the average consumption lies under the minimum limit of 20 l/cd in some cases, seasonal fluctuations are taken into account as well as the fact that consumers use water from alternative sources only for service water purposes; in this case we consider the indicator to be largely fulfilled. In 2012 the operational availability was largely achieved with a figure of approximately 90 %.² The time saved when fetching water on a daily basis ranges between 2-3 h/day and therefore fulfils all the target values³.

Against the backdrop of the water quality issues mentioned above, the effectiveness is rated good.

Effectiveness rating: 2

Efficiency

Simple drilled and dug wells were constructed and in some cases drilled wells were equipped with electrically-operated pumps. To limit problems with spare parts and maintenance, only conventional models that are customary in the country were used. The unit costs per supplied resident for all systems are approximately 50 EUR for Phases III and IV, and thus acceptable. The logistical challenges such as the broad consulting approach of the programme led to relatively high consulting costs. The commissioning of the facilities was delayed for two years compared to the original plan in the programme appraisal, but this is good compared to other rural water programmes.

The municipalities are responsible for maintaining as well as repairing the systems. In exchange, the municipalities receive the lease income from the attendants and operators, for whom this work is generally profitable.

¹ Cf. IOB/BMZ 2011: The risk of vanishing effects, Impact evaluation of drinking water supply and sanitation programmes in rural Benin.

² Cf. KfW 2011: CP Rural Water Supply Phase III, IV, Final Report.

³ Cf. KfW 2014: CP Water Programme, Ex-post Evaluation Report.

Small systems that are technically more challenging constituted more than 50 % of the total costs. The per capita costs were significantly lower than the 100 EUR expected at the programme appraisal, coming in at 20 EUR. The ability and willingness of the population to pay is adequate. The water tariffs are just about appropriate, and poor people use the installations as well as those who are better off.

Overall, the use of funds was adequate and justified compared to other alternatives. For instance, treating contaminated water with chlorine does not represent an alternative to reliable water infrastructure as it causes high regular costs for households. However, allocation efficiency is limited when it comes to usage, due to the aforementioned issues of water quality. Consequently the efficiency of the programme is rated satisfactory.

Effectiveness rating: 3

Impact

The overall development objectives were to help improve general living standards and reduce waterborne diseases in the programme region. This objective was not fully achieved. Water from the standpipes is often mixed with water from traditional sources, or is transported and stored in contaminated water tanks. As a result, contamination with E.coli bacteria was detected in one third of the cases. A sharp decline in the E.coli content was only measurable in combination with the provision of clean water containers.⁴ Measurements from the national Ministry of Health in 2013 show similar results. However, it must be noted that the E.coli content in the water only provides limited information about the actual health effects of the programme. Moreover, it only shows the effects on diarrhoeal diseases and not on other waterborne diseases such as parasite infestations (Guinea worm).

The programme contributed to better living conditions among the rural population in terms of saving time and easing physical burdens. Against the background of these positive welfare effects, the overall developmental impacts of the programme are considered satisfactory taking the water quality issues into account.

Impact rating: 3

Sustainability

The sustainability of rural water supply infrastructure is highly dependent on the availability of resources for operation, maintenance and repair of infrastructure as well as spare parts. Most of the facilities are in working order. However, some systems exhibit failings that are a result of poor maintenance. Management contracts for rural water supply facilities are relatively new in Benin, and most companies only have limited experience in this field. Spare parts are still difficult to obtain in remote, rural areas. Additionally, the population uses rainwater during the rainy season which puts more pressure on water turnover.

At the level of the municipalities responsible for maintaining the water installations, sustainability is particularly at risk because of financial and staff shortages (especially in the case of small systems that are technically more challenging). Compliance with contracts is not yet systematically checked by the municipalities, and sanctions are not imposed.

When it comes to hygiene education, municipalities have so far relied strongly on the support of non-governmental organisations and donors. In the meantime it is generally agreed that selective intervention as an accompanying measure to investments in the rural water supply is not suitable for effecting permanent behavioural changes within the target group. Accordingly, hygiene education should be intensified and become a permanent task with the involvement of the Ministry of Health.

Assuming that external support from donors will continue, it is expected that the present quality of supply will be maintained at existing facilities. Completely independent and sustainable development is not yet on the horizon in many areas.

Sustainability rating:3

⁴ Cf. IOB/BMZ 2011: The risk of vanishing effects, Impact evaluation of drinking water supply and sanitation programmes in rural Benin.

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

Ratings level 1-3 denote a positive assessment or successful project while ratings level 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. 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).