

# Ex post evaluation – Guinea



**Sector:** Basic drinking water supply and basic sanitation (CRS Code 14030)  
**Project:** Rural Water Supply in Fouta Djallon (FD) III (BMZ No. 2004 66 037)\* and Rural Water Supply FD IV (BMZ No. 2006 65 257)  
**Implementing agency:** Service National d'Aménagement des Points d'Eau (SNAPE)



## Ex post evaluation report: 2017

		FD III (Planned)	FD III (Actual)	FD IV (Planned)	FD IV (Actual)
Investment costs (total)	EUR million	7.80	7.38	5.23	5.12
Counterpart contribution	EUR million	0.30	0.30	0.23	0.23
Funding	EUR million	7.50	7.08	5.00	4.89**
of which BMZ budget funds	EUR million	7.50	7.08	5.00	4.89**

\*) Random sample 2016

\*\*) EUR 0.11 million in residual funds is set to be used within the scope of the primary education programme (BMZ No. 2015 86 575)

**Summary:** The evaluation concerns the last two phases of the rural water supply programme to improve the drinking water situation in the mountainous region of Fouta Djallon in Guinea. It included the construction of 432 drilled wells and 84 iron filtration systems in the provinces of Pita, Dalaba, Labé, Mali and Tougué, along with the construction of 50 latrines at schools and health facilities in selected villages within the region. Four wells were expanded to small-scale solar-powered systems, while all the other wells were equipped with mechanical treadle pumps. In addition to the investments, the users were supported with founding well committees, which are financially and administratively responsible for running and maintaining the new systems. The committees were trained for the functions in parallel to the construction measures and received guidance around drinking water hygiene practices. The project followed a demand-oriented approach which envisaged local authorities applying for a well and making a financial contribution to its construction. In strategic terms, both projects represent a continuation of Phases I and II, which were evaluated in 2007.

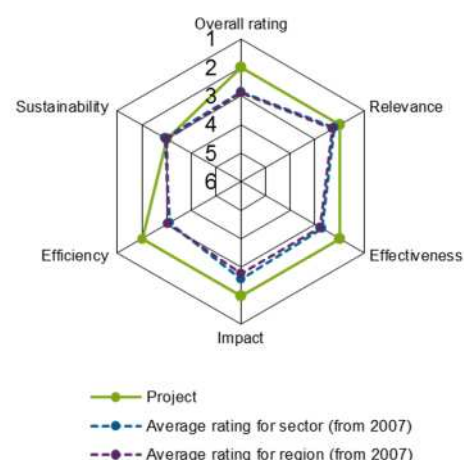
**Development objectives:** The project's ultimate objective was to improve living conditions and reduce the potential for health hazards from waterborne diseases. The programme objective was for a reasonable domestic need for safe drinking water to be met sustainably, with the target group observing basic hygienic principles for dealing with water.

**Target group:** The population of the rural communities in the five provinces of Pita, Dalaba, Labé, Mali and Tougué – currently totalling around 170,000 inhabitants – was the programme's target group.

## Overall rating: 2 (both phases)

**Rationale:** The project's objectives were achieved for the most part. To date, the improved availability of drinking water has contributed to an improved health situation and quality of life in the programme area of Fouta Djallon. These contributions are currently in jeopardy due to the poor spare parts supply and the insufficient monitoring by higher-level structures (local authorities and rural water supplier). In this respect, there is a general problem with funding on the part of the rural water supplier, which hardly generates any of its own revenue. A solution could be reached with the restructuring of the water supplier at national level, which has been pending since 2012.

**Highlights:** The user groups are generally ready to independently manage the new infrastructure, but the levels of skills or qualifications are very low in some cases. Improving living conditions with a safe supply of water is not sufficient to stem the migration of the younger population.



## Rating according to DAC criteria

### Overall rating: 2 (both phases)

#### Ratings (both phases):

Relevance	2
Effectiveness	2
Efficiency	2
Impact	2
Sustainability	3

#### General conditions and classification of the project

The project included continuing and consolidating the first two phases of the water programme of the same name (Fouta Djallon in Middle Guinea), for which the evaluation report was submitted in 2007 (rating: 2). Mechanically powered pumping wells and small-scale waterworks with solar technology (AEP) were financed and built in the southern prefectures of Pita and Dalaba in the third programme phase. Then additional well locations were financed and built to bolster supply in the northern prefectures of Labé, Mali and Tougué in the fourth programme phase. Both phases were given the same rating due to their likeness and the similar local conditions. In light of the traditional water sources' poor state of hygiene, in addition to the low availability of hygienic drinking water in the target region, the project is still appropriate from today's perspective as a means of helping to prevent health hazards from waterborne diseases.

#### Relevance

At the time of the programme appraisals (PAs) in 2005/2006, more than half of the population was considered poor in the rural areas of Guinea, including in Middle Guinea region. The poverty reports<sup>1</sup> prepared by the Guinean government over recent decades with WHO support cite the lack of access to infrastructure and (here explicitly) access to safely managed drinking water as manifestations of the poverty in Guinea. According to the statistics available<sup>2</sup> during the projects' PAs, the share of the rural population in Guinea with access to safely managed drinking water was only 47% before the programme started. In addition, the target group had developed little experience in observing relevant hygiene rules when handling drinking water.

The project was intended to improve the availability of drinking water in the long term by creating safe deep drilled wells. Along with creating a safe drinking water infrastructure, hygiene education was an important basic factor in reducing health hazards from waterborne diseases. Later bacterial contamination of drinking water can be avoided as far as possible if hygiene rules are consistently applied in all activities in the household associated with water usage (drinking, cooking, bodily hygiene). This also includes only using sealable containers for transporting and storing water.

Overall, the plan was for the improved water quality and hygienic practices to help to increase water consumption, thereby improving living conditions and reducing the health hazards from waterborne diseases. The results chain continues to make sense from an ex post perspective.

In view of the health hazards that can arise from a defective supply of clean drinking water, the project was targeted at a relevant key problem for the target group. The project's concept of a consistent water supply in combination with sufficient hygiene knowledge is suitable from today's perspective as a means of achieving the intended overarching (health) impacts. However, from an ex post perspective, it would have made sense to remove the iron filtration systems from the design, as these were difficult to maintain

<sup>1</sup> Document de Stratégie de Réduction de la Pauvreté, DSRP I, II et III, Secrétariat Permanent de la Stratégie de Réduction de la Pauvreté ([www.srp-guinee.org](http://www.srp-guinee.org))

<sup>2</sup> DSRP, 2002, [www.srp-guinee.org](http://www.srp-guinee.org)

(so were not accepted by the population), and it would have been necessary to focus more on the viability of the spare parts market (two different pump technologies, if necessary).

It served the needs of the rural population in the Fouta Djallon mountainous regions' remote villages and was in line with the Guinean government's long-standing policy in the health and water sector. It also still continues to be consistent with the latest National Health Development Plan (PNDS 2015-2024)<sup>3</sup> and the objectives of the national Poverty Reduction Strategy Paper (DSRP III, 2012-2015). The PNDS envisages 80% water supply access nationwide by 2024, in order to make a contribution to meeting the Sustainable Development Goals (SDG 3.9).

A variety of well construction programmes have been financed by international donors in the rural regions of Guinea since 2000, making it possible to increase the supply rate to around 65% by 2012.<sup>4</sup> Despite the significantly better water supply in the urban areas, the nationwide connection rate stands at a low 77%.

Various donors<sup>5</sup>, coordinating among themselves and with the water supplier responsible for the rural water supply (SNAPE), are also continuing to finance well projects in Guinea, as there remains a great need for investment in the rural water supply. The public water supplier SNAPE's restructuring, agreed in 2012, is supported by the African Development Bank today and the European Union has been attempting for some years to expand the public water sector with a focus on the rural water supply.

**Relevance rating: 2 (both phases)**

**Effectiveness**

The project's objective was to guarantee that a reasonable domestic need for safe drinking water would be met sustainably while observing basic hygienic principles for dealing with water.

Attainment of the programme objectives defined in the PA is checked on the basis of a randomly selected sample during the ex post evaluation (EPE), consisting of 41 well locations with mechanical pumps, two solar-powered small-scale waterworks with standpipes and service connections, and four (4) latrine locations.

Indicator	Target value and status PA	EPE
(1) The water facilities financed in the project (drilled wells and small-scale water systems) still work after three years in use and guarantee a water quality in keeping with the WHO standard.	After > three years, at least 90% of the systems are in operation; at PP = 0%, no further details.	After seven years in use, operation around 85% fully functioning; not achieved. Since the target value was selected ambitiously and was not judged until after seven (instead of three) years in use, we rate the indicator as having narrowly been <b>achieved</b> .
(2) There is sufficient knowledge about hygienic water use and waterborne diseases present among the target population.	> 70% of the target population (users) applying the knowledge; use of open and unclean containers frequently observed during PA	<b>&gt; 70 %, achieved;</b> among other things, users overwhelmingly use sealed containers and follow hygiene rules at the well
(3) The composition of the wa-	> 70% of the committees are >	Around 82% of the committees

<sup>3</sup> Plan National de Développement Sanitaire (PNDS 2015-2024), Ministère de la Santé de Guinée

<sup>4</sup> Le troisième Recensement Général de la Population et de l'Habitation (RGPH-3) de 2014 et La cinquième Enquête par Grappes à Indicateurs Multiples (MICS-5) de 2016; summarised in the Rapport de Consultation nationale sur le Fichier Pays relatif au JMP 2017 publiée par République de Guinée

<sup>5</sup> Banque Islamique de Développement (BID), Gouvernement Belge (en préparation) et Saudi-Sahel (en préparation)

ter committees that were founded is at least 50% female.	50% female; no details at PA	are > 50% female, <b>achieved</b>
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At the EPE, around 85% of the systems visited were functional, meaning that the 90% target value was just missed. This indicator's aspiration level was considerably higher than the first two phases (80%), which was justified given the quality of pumps used. The average found for how often technical pump system repairs were carried out is very low at less than once a year. However, the difficulties with spare part procurement discovered in some villages during the EPE, and a certain lack of initiative from users, have resulted in unacceptably long repair times through to the complete abandonment of modern water facilities. We can assume that the indicator would have been achieved with a functioning spare part procurement market. The relatively expensive iron filtration systems, however, are largely no longer in operation. Cleaning the systems was considered demanding and did not produce a significant improvement in the water's taste, according to the users' perception.

The deep drilled well and pump technology used guarantees a very high level of safety, ensuring compliance with the WHO standards on water quality over the well life span. After commissioning, the water company did not make any other quality checks. The much higher risk of microbial contamination exists during subsequent improper transportation and storage by the user. In this context, the hygiene awareness raised among the bulk of users has resulted in careful water handling, especially in the choice of transportation containers and in household storage.

The indicator concerning the knowledge of water hygiene and waterborne illnesses was geared towards measuring the sustainability of the awareness campaign that accompanied the project. More than 70% of the users surveyed during the EPE were able to provide satisfactory information about the relationships that exist between water hygiene and health. They referred, unprompted, to the significant perceived drop in diarrhoea cases in their families, especially among young children. Additionally, it was possible to observe that the conduct rules were followed in most cases at the modern water facilities and sealed containers were used for transporting water, almost without exception. The indicator is therefore deemed to be achieved.

The indicator of both sexes' participation in managing the new pumping wells is achieved. However, the user group seems either not to fill previously vacated positions on the individual well committees or not to fill these per the specified rules.

The target achievement evaluation does not take account of the indicators formulated at the PA for the rate at which the modern water facilities are used by the population (> 70%) and the distance-based accessibility of the water facilities for the target population (< 350m for > 60% of households). There are no official surveys for either indicator and a quantitative appraisal was not possible during the EPE. In keeping with the statements from the users encountered, it is recognisable that most households in modern drinking water facilities' catchment areas also use these facilities (> 70%), although the households' distance from modern wells in the project area often exceeds the 350m level. As was established in the final review, the distances are due to the structure typical for settlements in Fouta Djallon, where a village with around 300 inhabitants can easily extend further than 1.5km. In addition, the mountainous region's prevailing hydrogeology restricted the selection of well locations.

There was not a dedicated indicator defined for the latrines, and rightly so, on account of the small part they played in the programme. The latrines visited by the mission were in decent and clean condition.

We rate the project's effectiveness as good, primarily because the spare parts market has practically collapsed and the iron filtration systems are now out of order.

**Effectiveness rating: 2 (both phases)**

### Efficiency

The project's efficiency was positively influenced by the user groups' participation in smaller-scale construction work around the wells. The quality of the hydraulic work can be rated as good. The use of robust pump technology for the drilled wells and a durable electrical system for the solar-powered small-scale waterworks mean that repairs are much less frequently needed. In spite of the difficult sociopolitical situa-

tion (2008-2010)<sup>6</sup>, the programme was implemented during the transition of power to a new president – mostly within the planned cost and time limits.

The specific investment costs of EUR 13,000 or EUR 15,000 per drilled well with mechanical pump are influenced by the low successful drilling rate (60-70%) in the mountainous regions of Fouta Djallon. They can therefore be classed as appropriate and are in the same cost range as the specific investment costs from preceding phases. The specific investment costs for the small-scale water systems, at EUR 100 per connected resident, were also in line with the average among comparable projects. The investment costs related to the target population that were worked out for the project can also be classed as appropriate at EUR 90 per head.

The documents seen during the EPE and the surveys conducted showed that, in most villages with a working drinking water well, the well committees receive a regular fee payment from the users. The set rules concerning amounts and frequency are designed individually for each village community. In the case of the small-scale waterworks, revenue from the sale of the drinking water is generated per cubic metre with government-defined tariffs, though these are below the fee levels recommended during the project's implementation. Taking into account how often repairs are carried out, and measured against the spare parts prices, the cash holdings encountered are too low, making extra, one-time payments necessary in the event that repair costs come to the maximum level. No water committees are building up reserves for a complete rehabilitation of the systems. The commercial knowledge imparted during commissioning, including documentation, only continues to be used on the individual's initiative in a few instances. The skills at hand in the villages are highly limited and there appears to be no higher-level monitoring for compliance with the processes. Despite the problems listed here in operating the systems, there was no alternative technology at the time of the project implementation that would have brought lower costs.

The production efficiency is in line with expectations, considering the hydrogeological conditions typical for the region. We still rate the allocation efficiency as good despite the weaknesses observed in some places.

### Efficiency rating: 2 (both phases)

### Impact

The project was designed to help to improve living conditions in the programme region and reduce the potential for health hazards from waterborne diseases within the target group. No indicators for the health situation of the target group were defined at the PA.

The intended impacts were evaluated within the scope of the user survey during the EPE, which was not representative. In the course of this, all users surveyed unambiguously stated that diarrhoea cases and other waterborne illnesses have been virtually non-existent in the households since the safely managed drinking water sources have been used. The doctors and teachers surveyed in the region corroborate this statement.

After the initial programme phases I-II, an impact assessment was conducted in the project region in 2006.<sup>7</sup> This, along with a Master's dissertation based on it and written in 2010<sup>8</sup>, investigated how the drinking water available from safe sources affected health. This involved considering the trend in the incidence of waterborne illnesses in the region (e.g. diarrhoea). A clear relationship was found between the use of newly created, safe water sources and the reduction of diarrhoea cases in young children. A variety of econometrically robust methods were applied for this significant indicator and a reduction in cases of illness was found in the villages in question, from 46% to 15%. This is equivalent to a drop of more than 76%. The results were robust irrespective of the methods used. Government statistics issued in 2012<sup>9</sup> confirm this link and assume a nationwide prevalence of around 15% in a context where safely managed drinking water sources are used. Specifically, this breaks down as one of the country's highest prevalenc-

<sup>6</sup> The death of the president until that time, Lansana Conté, was followed by a military coup and riots that were ended in 2010 with the election of the new president, Alpha Condé.

<sup>7</sup> Schumacher (2006): How does improved water supply impact on the health status of villagers in Fouta Djallon

<sup>8</sup> Ziegelhöfer (2010 a): The impact of communal water supply on health in Guinea.

<sup>9</sup> Institut National de la Statistique (2012): Guinée, Enquête Démographique et de Santé et à Indicateurs Multiples

es for Fouta Djallon region at around 21%, and especially so for Labé Prefecture at 24%. Today, as a result of the low incidence in the meantime, this prevalence is no longer explicitly recorded and specified in the health data. In the course of the evaluation trip, the Ministry of Health explicitly provided information on this topic, stating that diarrhoea has occurred very seldom in the country, supported by the improved supply of water and sanitation in Guinea and the improved provision of medicine at school age.

According to a WHO report<sup>10</sup> in 2016, around 77% of Guinea's population today has access to clean water, but only around 20% of the population also has access to sanitary facilities (as per SDG 6.1 and 6.2). The proportion of households with sanitary facilities seems to be higher than the nationwide average in the villages visited. The population present said that many latrines have been built in recent years on local initiative, meaning that more than 50% of the households have access to a latrine according to the unrepresentative survey. The latrines built within the project at schools and health stations are all functional. However, it was noticed that they are only consistently used at schools when there is a nearby water facility ensuring enough water.

While the health impacts are still relatively clearly identifiable, this is certainly more difficult when it comes to the many factors that influence improved living conditions. During the on-site evaluation, the overwhelming bulk of the interviewees reported that their living conditions had significantly improved with the availability of drinking water and were contributing to an improved quality of life with more leisure time. Individuals also stated that there was more time available for other work activities. Nonetheless, this is not sufficient to stop the emigration of young people from the villages. The families suggest that the absence of enough good-paying work within easy reach is primarily the reason for this.

In summary, we can state that the impacts have demonstrably occurred (improved living conditions and reduced potential for health hazards), even if this is not solely attributable to the safely managed water supply.

**Impact rating: 2 (both phases)**

### Sustainability

The user groups and their local well committees are responsible for operating and maintaining the mechanical treadle-pump wells and small-scale solar-powered waterworks. In 40 of the 43 locations visited (93%), the local well committee existed in its original form during the EPE with three women and two men. In a few cases, vacant positions are still due to be filled. The working methods observed in the committees were largely in line with the process developed during commissioning with gatherings of user groups, locals responsible for maintenance and repair, individuals in charge of hygiene, treasurers and committee directors. They collect the fees for water use, manage the reserves and order necessary maintenance and repair work. The cash holdings encountered prove that the users are willing to pay in principle. However, the contributions are lower than expected at the PA and are not currently sufficient to cover larger-scale repairs. The documentary support materials (ledgers, etc.) introduced during the single-year operation phase are kept in use by few committees.

The technical deficiencies in the water systems found during the EPE are accompanied by a lack of commitment from the committees. In a few instances, the impression was given that regular maintenance is not carried out due to cost. This is frequently accompanied by a diminishing feeling of responsibility for the system, which is also manifested in the fact that the exterior well structure is not maintained by the users. Furthermore, in the event of repairs, the committees do not deal with the troubles surrounding spare parts procurement in a professional way, resulting in outages lasting several weeks to months. This means that the safely managed water facilities are at high risk of being abandoned outright if there are alternative water sources available (e.g. traditional dug wells).

The higher-level municipalities only exercise their monitoring role in particular cases. The regional office of the rural water supplier, SNAPE, also lacks the staff and funds to carry out monitoring visits on a random

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<sup>10</sup> WHO (2016): World Health Statistics 2016: Monitoring health for the SDGs, ANNEX B "Tables of Health statistics by country, WHO region and globally" [http://www.who.int/gho/publications/world\\_health\\_statistics/2016/en/](http://www.who.int/gho/publications/world_health_statistics/2016/en/) (3.9 Mortality rate attributed to exposure to unsafe WASH services (40.7 per 100,000 population): Guinea (2012))

sample basis. The SNAPE regional office only provides support with spare parts procurement in particular cases when requested by the local repair workers.

In the case of the iron filtration systems evaluated, it should be noted that only a small number of systems are in use, although most of the associated water supply wells are fully functional and are used. It is evident that the simple but high-maintenance technology is not accepted by the users. In individual cases, it would have been possible to manage without the removal of iron, as the iron concentration subsequently fell.

All the solar-powered small-scale waterworks evaluated were functional. In one instance, flaws in the system's management were evident, for instance with the solar panels not undergoing regular cleaning and with additional (unsanctioned) commercial connections. This means that the volume of water supplied to the users is considerably lower than was originally the case. This unsatisfactory situation was able to ensue because the local authority responsible does not exercise any duty of supervision and there is no flow of information to the regional branch of the water company SNAPE. Across all systems, the water is sold in line with the government-set tariffs. However, these are below the rates recommended in the programme. As a result, there is no guarantee that future repairs will be financed from the reserves that have been accumulated.

The structure developed by the rural water supplier for maintaining and repairing the pumps and small-scale water systems only works to a limited degree. Repair works are not possible at short notice (two to three days), as the supply chain for spare parts between manufacturers and vendors has evidently become dysfunctional in the prefectures' main urban areas. Procurement via the informal market or directly from the manufacturer results in appreciably higher costs and barriers to procurement for the person in charge of the repairs. Although the treadle pump used is installed on a majority of the country's drilled wells and the issues have been known for a prolonged period, it has still not been possible to date to find a satisfactory solution to be reached in negotiations between SNAPE and the manufacturer. For the sake of the user groups and the wells' upkeep, a solution would be desirable soon, as the frequency of repairs will increase over the pumps' service lives.

The rural water supplier has been in a restructuring and reform process for several years without noticeable progress for the EPE. Opportunities to involve the local authorities more in administrative support for the wells are also being discussed as part of the general decentralisation efforts in Guinea. The planned process was intended to address matters such as financing and organising monitoring on a decentralised basis. Investments in modern water facilities continue to be largely financed from donor funds. The government authorities' general reliance on external financing and the reluctance within the institution to reform present risks to the sustainability.

The decentralised independent management of the drinking water systems works in a satisfactory manner to a great extent and offers a decent basis for sustainable operation. The inadequate supply of spare parts and the local water committees' lack of monitoring weaken the structure of operations, overall yielding a level of sustainability that is only just rated as satisfactory.

**Sustainability rating: 3 (both phases)**

### 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:

<b>Level 1</b>	Very good result that clearly exceeds expectations
<b>Level 2</b>	Good result, fully in line with expectations and without any significant shortcomings
<b>Level 3</b>	Satisfactory result – project falls short of expectations but the positive results dominate
<b>Level 4</b>	Unsatisfactory result – significantly below expectations, with negative results dominating despite discernible positive results
<b>Level 5</b>	Clearly inadequate result – despite some positive partial results, the negative results clearly dominate
<b>Level 6</b>	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).