

Ex post evaluation – India

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Sector: Provision of basic needs – drinking water (CRS code 14031)
Project Rural water supply, Maharashtra BMZ no. 1999 65 815* (investment) 2000 70 037 (complementary measure)
Project Executing Agency: State of Maharashtra, represented by the Water Supply and Sanitation Department (WSSD)



Ex post evaluation report: 2014

		Project A (Planned)	Project A (Actual)
Investment costs (total)	EUR million	**33,80	**17,40
Counterpart contribution	EUR million	10,00	4,80
Funding	EUR million	23,80	**12,60
of which BMZ budget funds	EUR million	23,80	**12,60

*) Random sample 2013

**) incl. complementary measure

Description: The project comprised of the construction of a simple water supply system (mostly groundwater capture, transfer pipelines, water storage and a distribution system with standpipes or house connections) in 256 villages located within three districts of Maharashtra (Pune, Ahmednagar and Aurangabad). A supply of safe drinking water was provided to approx. 550,000 inhabitants. To complement this, investments were made in sanitation and development measures were implemented for groundwater regeneration and education in health and hygiene issues. The project-executing agency is the State of Maharashtra, represented by its Water Supply and Sanitation Department (WSSD).

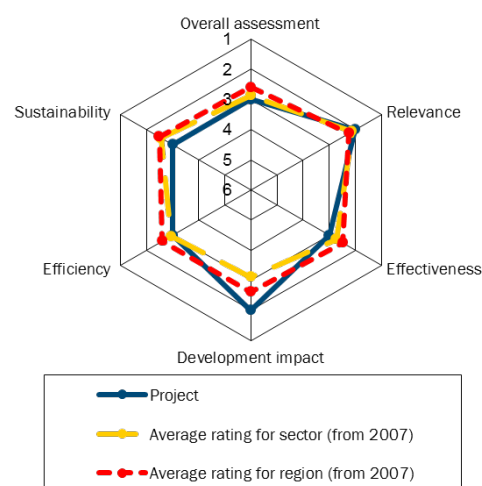
Objectives: The improved drinking water supply was intended to help reduce the risk posed by waterborne diseases to the health of the target population (the overall objective). The aim was to supply safe drinking water to villages in three districts and ensure that the disposal situation in these villages was satisfactory.

Target group: The target group is the village population of the project area (approx. 400,000 people by the 2014 planning horizon). Women, who bear responsibility for obtaining water, are the main beneficiaries. The project is designed to cover basic needs and it reduces the expenditure required for health services. It directly targets poverty reduction.

Overall rating: 3

Rationale: Due to its high degree of relevance and its developmental impact, the project – despite the presence of some risks to sustainability – is ranked as satisfactory.

Highlights: All the water systems inspected were in operation (even in the case of unannounced visits) and user satisfaction is high. After four to eight years of operation, the facilities are in a poor condition; this is due to the crude quality of their construction and a lack of maintenance. However, repairs needed to maintain operations are being carried out. Flat-rate water charges are invoiced annually. Revenues from charges cover operating costs in 70 % of the villages.



Rating according to DAC criteria

Overall rating: 3

The effects of the project are predominantly positive. Today, four to eight years after the systems were commissioned; more than half a million inhabitants of the three districts have a continuous supply of safe drinking water, the vast majority of them through house connections. Despite the lack of relevant data, it is reasonable to assume that the overall objective – reducing the risk to the health of the target population posed by waterborne diseases – was achieved. During surveys carried out in the villages visited, users also commented of their own accord on the sharp reduction in diarrhoea following commissioning of the water supply. All the water supply systems in the 20 locations visited were certainly functioning but were in a poor condition after four to eight years of operation, due to the crude quality of their construction and a lack of maintenance. Increasing the tariff and introducing preventative maintenance are urgently recommended to ensure long-term sustainability. Despite the shortcomings that have been pointed out, the programme is judged to be just sustainable.

Relevance

The results chain is lengthy; however, achieving the project objectives contributes to reducing the health risk posed by waterborne diseases, improving living conditions and saving time for the target group (a causal connection exists in principle between the development measures and the core problem).

In 1999, the Indian government enacted a revised drinking water policy which focused on decentralisation, user participation, covering operating costs and sustainability. This project also aimed to decentralise the operation of water supply systems and it involved users in the planning process.

The Aaple Pani project was implemented in parallel with, and complementary to, the World Bank's "Jalswarajya" project. The FC-financed Aaple Pani Project supplied the inhabitants of the districts of Pune, Aurangabad and Ahmednagar with clean drinking water, whereas the World Bank project concentrated on other districts within the federal state of Maharashtra. The World Bank project, which involved 4,140 new water systems, reached a total of around 6.7 million people. A follow-up project is currently in preparation (Jalswarajya II), which, with local and World Bank financing, will invest USD 1.5 billion in rural and peri-urban areas.

Hence, from the perspective applicable at the time, the design of this project was sensibly integrated into the country's water strategy. The supply of clean drinking water, especially in rural areas, remains a priority even today. The project thus accords with the BMZ sector strategy.

Relevance rating: 2

Effectiveness

The project was intended to provide the supply of safe drinking water to around 275 villages in Maharashtra and to put in place a satisfactory situation with regard to disposal. Financed by FC, the project made an important contribution to improving the provision of drinking water and sanitation in rural parts of the federal state of Maharashtra. Under this FC development measure, a total of around 550,000 inhabitants in 256 villages were supplied with safe drinking water. To complement this, the necessary investments were made in sanitation as planned. Despite a slight fall compared to the project appraisal report of just under 7 % in the number of villages supplied, the number of people being supplied with clean drinking water increased against the figure in that report (approx. 400,000) by more than a third.

Achievement of the project objective is measured by means of the following indicators:

1. as a result of the project, there is year-round availability of 40 litres of drinking water per inhabitant per day;
2. the new and extended systems are being used;
3. water quality meets WHO standards with regard to chemical and physical characteristics and bacteria count; water quality is monitored regularly;

4. in the areas around wells – which are important for hygiene reasons – no unregulated disposal of faeces takes place;
5. the water supply systems are functioning in at least 75 % of the villages (from the third year after commissioning);
6. drainage systems are functioning in at least 70 % of the villages (from the third year after commissioning).

Indicator 1 is considered fulfilled. Supply durations last between one and two hours each day. The normal operational routine is as follows: 1) Filling the gravity tank by means of the well pumps; 2) chlorinating the tank contents; 3) distributing the tank contents via the net-work within one to two hours; 4) storing the water at households. As a rule, at least 40 litres per person per day is made available to users. An acute water shortage prevailed in 7 of the 20 villages visited for around two months this summer, due to the extreme weakness of the earlier monsoon and because of wells running dry. Supplies from water tankers were used to compensate for this. Under normal conditions, users find the volumes to be adequate.

Indicator 2 is considered fulfilled. The target population has confirmed that the systems which have been constructed and extended are being used for health-relevant purposes.

Indicator 3 is considered partially fulfilled. The villagers certainly judge the water quality as predominantly good. However, the health authorities analyse samples regularly: twice a month for bacterial contamination, every two months for a chemical / physical analysis. It is found thereafter that a large part of the samples do not meet the requirements. In 2012, an average of all tests in the three districts showed bacterial contamination in some 15 % of the roughly 83,000 samples examined and found chemical contamination in 28 % of around 17,000 samples examined. For the villages in the programme area, the results may well be better than average due to the availability of chlorination. However, it is not possible to make any firm statements in this regard. Although information provided by districts about waterborne diseases show that there were no more than 12 cases in any of the districts over the last four years, this data is not very robust.

Indicator 4 is considered fulfilled. No unregulated disposal of faeces was observed in the hygienically important areas around the wells at any of the locations visited. In the mid-term, however, the water quality is endangered by the use of fertilizer and pesticides in the immediately vicinity of the wells, which are often located in the middle of intensively used agricultural land. Establishing and enforcing protective zones is therefore urgently required.

Indicator 5 is considered fulfilled. All the water supply systems in the 20 locations visited were in operation. A high proportion of systems in operation is also found at the parallel Jalswarajya project, whose evaluation indicates that 87 % of the facilities are operational.

Nothing can be reported regarding the fulfilment of **Indicator 6**, because overall there has been virtually no investment in drainage in the villages. That said, no requirement for drainage works was identified in the villages visited either.

After four to eight years of operation, the facilities are in a poor condition, due to the crude quality of their construction and a lack of maintenance. Necessary repairs are undertaken promptly, ensuring that operations are maintained. However, regular preventative maintenance does not take place. The most common defects are detailed in the "Sustainability" section of the report. Despite the current shortcomings, all the systems are in working order and their use is not currently restricted.

In summary, the project – with the qualifications detailed above – is achieving its set objectives.

Effectiveness rating: 3

Efficiency

The programme was implemented with extensive user participation. The water systems were erected by local construction companies using local materials and extremely simple designs, Phase 1 with stand-pipes and Phase 2 with unmetered house connections. This made possible very low costs per capita. By implementing the second phase without the support of an international consultant, costs per capita have even stayed below the estimates in the programme proposal. But construction quality is poor and this –

together with the lack of maintenance – leads to the defects described under "Sustainability". However, it proved possible to supply significantly more inhabitants than had been planned in the programme proposal (production efficiency).

All the systems inspected are being used as intended and supply the population with drinking water that is principally safe. Fees are charged for use; however, these can only be levied in part and only partially cover operating costs. The systems installed were tailored to the needs of the users and have therefore been highly effective (Allocative efficiency).

The programme is considered to have been implemented efficiently, provided that long-term use can be achieved despite the poor quality of construction and inadequate maintenance.

Efficiency rating: 3

Impact

No indicator was formulated for the overall objective of reducing the risk to the health of the target population posed by waterborne disease, because the results chain is extremely long and the effect of any individual project is therefore difficult to prove. Given the water quality, which is predominantly good according to statements from the target group (the water is chlorinated in all the villages), its predominant use for household purposes, the statements made by users on the decline in illness and the fact that the villages appear to be free of faeces, it is reasonable to assume that the overall objective of reducing the health risk posed to the population by waterborne diseases has been achieved.

As a general observation, it is fair to say that today, four to eight years since the systems were put into operation, more than half a million inhabitants within the three districts have a continuous supply of safe drinking water, the vast majority of them through house connections. Furthermore, substantial time savings and a marked improvement in hygiene conditions are clearly evident and are viewed by the users in a very positive light. Quality of life in the villages has been significantly improved by the construction of latrines under other programmes. There were no signs in any of the villages that people were excreting outdoors: no faeces were seen, and no smell of faeces was noticed. It is therefore assumed that the toilets that were erected are still largely functional and are being used. Many villages displayed a sign stating "Open Defecation-Free Village". The effects of the project are predominantly positive.

Impact rating: 2

Sustainability

At the time of the EPE, the facilities had already been in operation for between four and eight years, which equates to the usual working life of around 25%-50% of mechanical installations and roughly 10 %-20 % of buildings. All the systems inspected were in operation but were in a poor condition due to the crude quality of their construction and a lack of maintenance. The only repairs carried out are those which are absolutely necessary to maintain operations. Preventative maintenance does not take place. Typical defects include poor-quality concrete, missing or broken well covers, rusting steel components, missing mountings and handrails, leaking slide valves and air outlet valves, and missing stop valves and stop-cocks in house connections. Despite the fact that all the systems inspected to date are in operation, inadequate maintenance constitutes a high risk for the sustainability of these investments.

In 70 % of the villages, operating costs were covered by revenues from the annual flat-rate water charge. Furthermore, in some cases the municipality has adopted some of the costs of staff and electricity, and even the Maharashtra state government is taking over such costs, partly as an incentive to reach thresholds in collection efficiency. This combination enables operating costs to be covered for the most part. However, it is not possible to build contingency reserves for larger repairs and investments in replacement equipment. In the villages visited only smaller repairs have been necessary to date, such as changing seals, valves or pump motors and sealing pipes. However, as a result of continual wear, larger repairs will become increasingly likely in future. It is intended that such repairs will be financed by the municipalities – but it can be reasonably assumed that this will only happen subject to good personal relationships. That said, due to the systems' simplicity, even larger repairs could be financed by contributions from the local population.

To secure long-term sustainability, raising the tariff and introducing preventative maintenance are urgently recommended. Despite the shortcomings described, the programme is rated overall as just sustainable.

Sustainability rating: 3

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).