

Ex Post-Evaluation Brief

India: Erosion Control Maharashtra, Phases I & II



Programme/Client	Erosion Control Maharashtra, No. 1991 65 606 (Phase I) & 1996 65 399* (Phase II)	
Programme executing agency	National Bank for Agriculture and Rural Development - NABARD	
Year of sample/ex post evaluation report: 2012/2012		
	Appraisal (planned)	Ex post-evaluation (actual)
Investment costs (total)	EUR 19.55 million	EUR 19.55 million
Counterpart contribution (company)	EUR 0.63 million	EUR 0.63 million
Funding, of which budget funds (BMZ)	I) EUR 6.14. million II) EUR 12.78 million	I) EUR 6.14 million II) EUR 12.78 million

* random sample

Project description: Cooperative project (CP) involving Financial (FC) and Technical Cooperation (TC) for watershed development (reduction of soil erosion and improvement of water retention) in arid and sub-arid regions in the Indian state of Maharashtra. The two phases shared the same design, each targeting different watersheds and encompassing the reafforestation of steep slopes, erosion control on agricultural land, the installation of water retention basins, and river engineering measures. The measures were implemented by the population under the guidance of local NGOs. The NGOs and the beneficiaries were prepared for their task through TC-supported capacity building. Phase I was completed in 2000, Phase II in 2006. Phase III will shortly be completed.

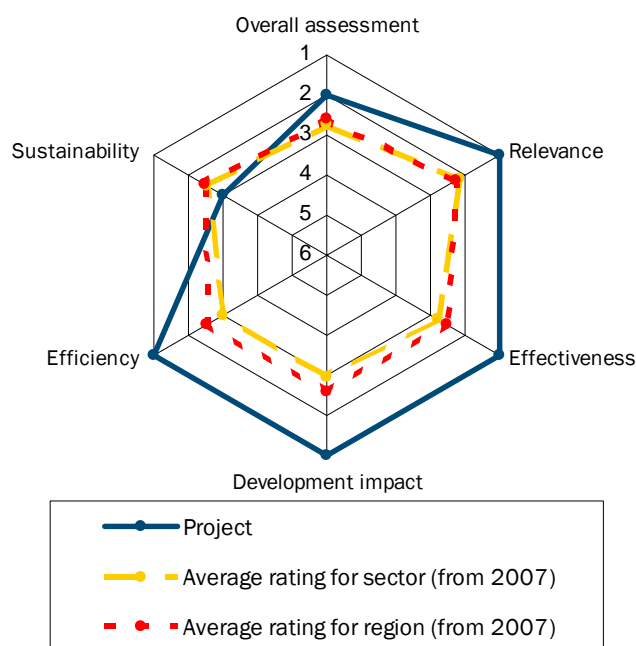
Objective: The intended outcome was to stabilise the productive potential of agricultural and forestry at a high level, as measured chiefly by expansion of the area of land under productive use, and increased yields. This aimed to help preserve and improve the living conditions of the target population (overall objective/ impact). The indicators an increase in agricultural income, steadier availability of water, and a decline in outward rural migration. **Target group:** The agricultural population of the watersheds (approx. 123.000 people in total).

Overall rating (both phases): 2

Both phases of the programme addressed problems that were a high priority for the affected population and the partner country. The objectives defined were very largely achieved – and with great efficiency. The contribution made toward improving people’s living conditions is significant. Weaknesses were observed with regard to sustainability, due to deficits in the repair and maintenance of the physical measures, and a disproportionately increasing volume of water extracted, mainly for irrigation purposes.

Of note: One aspect of note is the project’s major importance as a model for the design of national policies and programmes for watershed development (scaling-up).

Rating by DAC criteria



EVALUATION SUMMARY

Overall rating: Key elements of the approach pursued in the two phases served as model for large watershed development programmes of NABARD and the Indian Government and were incorporated into respective designs. FC also replicated the model in three other Indian states. Weaknesses were observed with regard to sustainability, due to deficits in the repair and maintenance of the physical infrastructure as well as to disproportionate water extraction. **Rating (both phases): 2**

Relevance: The approach pursued by the programme in both phases is fundamentally suited to helping address the core problem – the threat posed to ecologically and socio-economically sound rural development by severe degradation of the natural production base. The programme region is badly affected by water scarcity and soil erosion. Therefore, safeguarding soil and water (which form the basis for agricultural and forest production) remains extremely important to the population. The availability of adequate water supply for irrigation and drinking purposes is particularly important. The implementation of engineering and planting measures against remuneration through the project provided temporary income opportunities to the target population, some of whom are very poor.

Watershed development and rehabilitation measures continue to enjoy high priority, both for the Indian Government and in bilateral development cooperation with Germany in the priority area “environmental policy and sustainable natural resource management”. The increase in climate variability associated with climate change underlines the timeliness of the approach selected.

When the intervention was launched in the early 1990s, several watershed management activities were already under way in India. In most cases, however, those activities were barely coordinated. It was therefore difficult to align those measures, and it would have been cumbersome to do so. The programme therefore selected a novel approach, which included cooperation with NGOs, network analysis, and implementation in two stages – (first capacity building, then full implementation with investment). It also cooperated with a new partner that had not previously been involved in watershed management – NABARD. This new approach proved to be highly effective and cost-efficient, and significant elements incorporated into the design of national guidelines and programmes for watershed management. Today, the German activities in the sector are fully aligned with India’s procedures and implementation structures; they have played a significant role in shaping them during the initial period. Sub-rating (both phases): 1

Effectiveness: The indicators used at outcome level – expansion of area under irrigation, increase in tree vegetation and operational erosion control features/structures – basically provide an accurate measure of the objectives’ achievement. Indicator data were systematically recorded until the final review (2007), but not thereafter. Apart from the parameters initially defined, this evaluation also made use of further indicators to assess achievement

of programme objectives, which included a qualitative component: proportion of unproductive land, increase in yield for main crops, area under cultivation per year and number of large, active erosion control structures. In some cases, monitoring results were already available (e.g. data contained in an evaluation study commissioned by NABARD in 2008); however, this evaluation is based chiefly on data collected during the mission's visits to 6 watersheds. No indicators were available at outcome level to measure the component to promote women's interests introduced in phase II. It was therefore difficult to evaluate that component. Nor was it possible to reach a final assessment on the basis of the focus group discussions, as only very few women participated in these meetings.

Based on the information available and on results of our field visits, the programme objective of stabilising the productive potential of agricultural and forestry at a high level was doubtlessly and clearly achieved. The proportion of unproductive land in the watersheds fell by up to 35 %; tree coverage rose by an estimated 20 %; major crop yields rose by between 40 and over 100 %; the area under irrigation increased, and crops were diversified, with a significant rise in the proportion of cash crops (e.g. vegetables). More than 10 after physical activities were completed, the majority of them are still operational. The total area covered during the two phases was significantly greater than originally envisaged (target: 45 watersheds; implemented: 95). Reforestation activities were not always successful, particularly in very arid watersheds. The survival rates for the tree plantations given in the final project reports did not always appear plausible when the mission was conducted; in some cases, they appeared too high.

The factors leading to successful outcome achievement were: (a) the highly participatory approach; (b) the use of network analysis as a planning tool and the very high coverage of land surface to which this afforded; (c) implementation of works in two clearly distinct stages (a capacity development phase followed by a full implementation phase), which facilitated a meaningful division of labour between TC and FC, and (d) the highly committed and professional approach by the coordinating NGO – the Watershed Organisation Trust (WOTR), which had been prepared for its tasks by GIZ (formerly GTZ). Sub-rating (both phases): 1

Efficiency: Initially, the costs per hectare for the measures implemented were around twice as high as the rates originally applied in government programmes. Nonetheless, the higher costs do appear warranted, because significantly more measures per unit area were carried out in this programme than was the case in government programmes. Over time, government rates were raised significantly during programme implementation and are now equivalent to those in the ongoing FC programmes. Some measures (e.g. the construction of infiltration trenches) could have been implemented about 25 % cheaper by using machinery – with the same output. In the context of the programme, however, it was expedient to avoid comprehensive use of machinery, because very high priority was attached to cre-

ating paid manual labour for the target population¹; the fact that the farmers performed the works themselves increased their degree of ownership.

In view of the highly positive results at household (see below), the expense of less than 10,000 INR/ha would appear to be a highly efficient use of funds. If we consider the programme contributed toward improved living conditions in rural areas – and especially toward poverty reduction. Considering this fact, using funds to develop semi-arid watersheds undoubtedly is also a highly efficient macroeconomic option for India. This is also demonstrated by the fact that, over the last few years, India has significantly stepped and scaled up comparable activities, using own funds.

Consequently, we rate the efficiency of production and allocation as very good for both phases of the evaluated programme. Sub-rating (both phases): 1

Overarching developmental impact: The indicators used for measuring impact were a) increased agricultural income, b) stabilised water supply and c) a decrease in rural exodus. Originally, only the “reduction of poverty-induced migration” was used as impact indicator. However, this phenomenon is also significantly affected by other factors unrelated to the programme (thus creating an attribution gap). Moreover, it was not systematically monitored. Weaknesses in M&E make it more difficult to substantiate programme impact, which we believe is actually very positive.

According to available information (chiefly the final review report of 2007 and the evaluation report commissioned by NABARD in 2008), to results of discussions on site and to household surveys conducted in the course of this evaluation, the programme undoubtedly made a significant contribution toward improved living conditions for the population in the respective watersheds (overall objective). This is evident – even 10 years after physical completion – *inter alia* from the fact that in most villages drinking water is now available from wells all year round, and agricultural income has risen significantly (> 50 %), chiefly as a result of improved water availability. This has made a significant contribution toward reducing poverty and thus toward achieving the MDGs, as well as significantly reducing poverty-induced migration. Equally significant is the impact on the soil conservation, a virtually non-renewable resource. Although the reduction in soil erosion caused by the programmes was not quantified, it is likely to be at least 50 % (educated guess based on expert opinion). This has prevented irreversible degradation of important crop land and preserved the natural resource base on which the population’s livelihoods depend. By conserving soil as a key factor for production (not least due to its water retention capacity), and by significantly improving water availability, the project has certainly also made a key contribution toward reducing the population’s vulnerability to high climate variability and the impacts of climate change. In other words, it has made a key contribution toward adaptation to climate change.

¹ For most of the farmers involved this was the key incentive for participating in the programme, and was even more important than the increase in water supply or erosion control.

Essentially, all social groups in the watersheds (including landless groups) benefited from the measures. However, the benefits are particularly large for downstream landholders, as infiltrating water accumulates mainly in the vicinity of groundwater enrichment weirs. The benefits for upstream households and for landless families are significantly smaller.

The structural impact is particularly significant. Key elements of the programme served as a model for the design of national watershed management interventions as well as for the Watershed Development Fund set up by NABARD with government support. The positive lessons gained in the programme thus became the model for one of the largest watershed development programmes worldwide. Sub-rating (both phases): 1.

Sustainability: As already stated, some of the positive results of the programme are still clearly evident over 10 years after physical completion. Some of the implemented erosion control and water retention structures (contour dams, seepage ditches, weirs etc.) remain largely operational; however, they are in increasing need of maintenance (e.g. due to siltation) and repair. Although some of the Village Watershed Committees (VWCs) responsible for repair and maintenance do have access to sufficient financial resources from the dedicated maintenance fund. However, they are only partially operational and usually lack knowledge to assess maintenance and repair need for and to conduct the required works. Overall, maintenance and repair are only functional in a few exceptional cases. NABARD's attention has been drawn to this shortcoming repeatedly, for instance during the 2006 final review. So far, however, NABARD has not taken any action. It still appears possible to rectify this deficit, and NABARD, in principle, has indicated its willingness to do so.

Initially, the FC intervention led to a significant groundwater level increase in virtually all watersheds. The population made intensive use of this risen availability for drinking and for irrigation purposes. In the watersheds visited, the number of wells had in most cases more than doubled in relation to the figure prior to programme launch. Consequently, in many cases, extraction is now exceeding the additional volume of water available. As a result, groundwater levels have fallen again in recent years according to local information (a development that has been exacerbated by low rainfall over the last two years). Since there is neither legal remedy for preventing overuse nor adequate enforcement, there is no guarantee that the groundwater level will stabilise in the long-term; nevertheless, the measures implemented – given appropriate maintenance and repair – are on the whole continuing to result in greater water availability than was previously the case. Sub-rating (both phases): 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:

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).