

Benin: Forestry and Timber Industry, Phase V

Ex-post evaluation

OECD sector	31220 / Forest development	
BMZ project ID	1995 66 647	
Project-executing agency	Office National du Bois (ONAB)	
Consultant	GTZ	
Year of ex-post evaluation	2005	
	Project appraisal (planned)	Ex-post evaluation (actual)
Start of implementation	Q4 1995	Q4 1996
Period of implementation	5 years	4 years
Investment costs	EUR 5.47 million	EUR 3.84 million
Counterpart contribution	EUR 0.36 million	EUR 0.93 million
Financing, of which Financial Cooperation (FC) funds	EUR 5.11 million	EUR 2.91 million
Other institutions/donors involved	--	--
Performance rating	3	
• Significance / relevance	3	
• Effectiveness	2	
• Efficiency	3	

Brief Description, Overall Objectives and Project Objectives with Indicators

The project continued the efforts that began in the year 1986 to protect and enlarge Benin's last large state forest with its approx. 16,000 ha of forest area in order to maintain the core of the natural forest on a sustainable basis. In addition, the project helped to assure the development of the teak plantations established in preceding phases in order to increase the wood supply and to properly maintain the related infrastructure facilities. As was the case in the preceding phases, the project was designed as a cooperation project with GTZ. The project was suspended at the end of 2002 due to disagreement with the Beninese stakeholders with regard to sector and institutional reforms. The measures in this fifth phase mainly comprised the planting of trees for afforestation and stand improvements on around 1,050 ha within the core of the natural state forest 'Lama Forest' as well as succession control (primarily using autochthonous tree species from Western Africa). The afforestation work related to the investment from the Phases III and IV comprised forest thinning, forest fire prevention, road maintenance and measures in neighbouring areas.

The overall objective that was originally defined for the project was limited to protecting the core of the natural forest, and project objectives were defined on the level of the measures that were implemented. In view of the high volume of investment required for teak plantations, the strict limitation of the overall objective to protection is no longer appropriate. The revised overall objectives for the project then focused on sustainable preservation of the ecosystem in the

natural forest core of Lama Forest and a contribution to sustainable coverage of national timber supply through plantation wood production. Achievement of these objectives was measured based on the area of the ecologically intact natural forest in the centre of the afforested area (4,600 ha) and on the contribution of the teak plantations to national timber supply (at least 30%). The following project objectives were defined: a) rehabilitation and protection of the natural forest core (indicators: increase in the forestland within the natural forest core and loss of area due to agriculture or fire); b) increase in wood production following afforestation and supply with timber (indicator: sustainable production of at least 35,000 m³ of timber p.a.); c) compensation for loss of income for the target group (resulting from their ceasing their consumptive use of the core of the natural forest) through alternative sources of income (indicator: alternative monetary income for the 420 resettled families that at least equals the average rural income).

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

The project comprised measures that mainly targeted two key areas: silvicultural activities in the core of the natural forest – afforestation, stand improvements, fire aisles and additional fire prevention measures – as well as maintenance of the teak plantations from previous project phases. In addition, complementary measures were financed that encouraged the economic and social development of the former slash-and-burn farmers who have since been resettled. Furthermore, the project-executing agency received advice in forestry, sawmill technology and planning procedures.

As a result it can be noted that despite the suspension of the project, the natural forest is protected as planned, and the plantations are being maintained independently, properly and probably also sustainably. In retrospect the project design is considered suitable for contributing to reducing the identified core problems. For the most part, the ONAB carries out all necessary maintenance work on time, properly and – since the end of the project – with its own funds. Previously there were problems in certain phases with the rapid delivery of trunk wood. These problems were reduced via stronger participation of local communities and greater sales of standing trees to private buyers. The overall schedule for project implementation that was included in the project appraisal report was largely adhered to.

The forest management plan served as the basis for the activities in the plantations. The plan was updated in 2004 in accordance with the results of a detailed forest inventory and converted to a computer-based system funded by the project-executing agency. Apart from logging planning, this system allows simple controls of the timely implementation in the individual forest plots on the basis of updated growth models.

The tasks defined in the forest management plan are performed as planned in quantitative terms, and they are increasingly being assigned to small local entrepreneurs and local groups. The marketing problems as regards pole wood from the first thinning that existed in the preceding phases abated during implementation of phase V, and the prices for pole wood from the second thinning that were previously insufficient to cover costs also improved in phase V, so that the need for FC funds was far lower during the second thinning. As a result of the further increase in demand for pole wood and more efficient, direct marketing of the wood via the local population, now even the first thinning no longer causes expenses for ONAB.

The implementation period of 4 years did not deviate much from the original planning. When the project was suspended, the necessity of financing maintenance measures out of FC funds was successively reduced, and most of the necessary support measures were completed. The increasing involvement of the population from the surrounding area in the forest maintenance activities and the development of the approach of natural regeneration fulfilled the conditions for

more cost-efficient management of the plantations in the future and for greater involvement by the target group.

Key Results of the Impact Analysis and Performance Rating

The overall objectives of the project were achieved: since the end of the project, neither fields nor illegal logging activities have been noted in the natural forest core and, through additional planting, the establishment of the forest ecosystem is now progressing as planned. Based on the current forest management plan, the plantations will ensure a supply of timber of 40,000 m³ per year (possibly 45,000 m³) in the long term and, based on the current state of growth, of between 30,000 and 35,000 m³ per year in the short term (estimated market share: 39-46%).

The project objectives can also be considered achieved. The forested area in the natural forest core increased as planned and was assured via succession control measures. The core problem that had been identified during the project appraisal – the expansion of farmed areas into the remaining forests and the related loss of natural forest area – was resolved. The fire prevention measures that were introduced in combination with the end of shifting cultivation led to a decrease in both the frequency and the damaging effects of forest fires. To ensure that fires in the forest core can be prevented on a long-term basis, further efforts are needed; otherwise, reduced employment possibilities resulting from less maintenance requirements could lead to growing dissatisfaction on the part of the population. As it is not yet sustainably assured that the target will be met, in this ex-post evaluation we consider this project objective to be narrowly achieved. The indicator of achievement of the project objectives pertaining to sustainable production of timber meets the target. The project financed social infrastructure and income-generating measures for the people who originally lived in the forest and these people are also hired to perform the maintenance work. In addition, the development of the private sector was strengthened by the independent marketing of fuel wood and the production of pole wood in some areas. The estimated income from maintenance activities generated in the neighbouring communities lies in the order of between 2,600 and 3,900 full-time employment equivalents at the average rural income; therefore the project objective seems to be achieved. As those parts of the population who were resettled perform this work to a disproportionately high degree and also have other sources of income from the plantations and the agro-forestry centres, this objective seems assured.

As the remaining population in the project region has also been hired to carry out maintenance work, this generates a considerable income for which the region offers no alternatives. What is more, as a portion of the target group's income is paid to the village administration, the latter is able to finance and maintain social infrastructure measures.

Since the beginning of the project domestic demand for teak has increased, as a result of which marketing problems have declined and local teak prices have risen. The project-executing agency can operate without any fund allocations and can attain minimum profitability of the investments through long-term use, as is required for the investments in the teak plantations (for which substantial FC and TC funds were provided in the preceding phases). Long-term use of the old plantations, the method of natural regeneration that was developed under the project as well as better domestic sales prices all contributed to improving profitability. The pending sale of the connected sawmill would increase the transparency of the cash flow between the plantation operation and wood processing. The export of some of the trunk wood within the limits offered by sustainable growth could, if it were strictly controlled and limited (e.g. through export quotas), improve profitability and ensure the goal of domestic timber supply in an economically sound way. In the long term this combination could create incentives for improving the local wood supply without encouraging the rapid depletion of forest resources within the country.

Project impacts

Taking the adjustment of the objectives into consideration, the project's developmental impact is assessed as follows:

- The long-term preservation and rehabilitation of the natural forest core and the increase in timber production were achieved largely as expected, and there are no clear indications that the sustainable achievement of these objectives is at risk. Additionally, the target group is interested in continuing its involvement in the forest work, which accounts for a considerable part of their family income. This work generates a significant percentage of the financial resources for the village communities and, in this way, finances social infrastructure measures. The project contributes indirectly to the development of private sector activities and local self-organization. Most of the project objectives have been achieved or even exceeded. Therefore, we judge the effectiveness of the project to be satisfactory (partial rating 2).
- Even if the FC funds of EUR 2.91 million that financed the current project phase represent a relatively small amount, and the project measures were implemented with only 57% of the FC funds that were originally earmarked, the total expenditures – including the preceding phases – were relatively high. Since the funds were spent mostly on the creation of productive forest plantations, checking the profitability of these investments is an important part of assessing efficiency. The teak component attained the necessary minimum return – based on full costs – and which can be assured by a partial wood export. The total investment would be too high for the sole objective to protect the core of the natural forest - although this would also allow the plantations to generate a return below the standard reference values. The allocation efficiency breaks down into the achieved minimum return and achievement of the overall objectives at appropriate cost; thus, the project's efficiency is overall sufficient (partial rating 3).
- Owing to increasing pressure on natural resources, growing demand for wood and wood scarcity in Benin, the overall objectives are still relevant. For the most part the overall objectives have been achieved, yet further efforts are needed to ensure that fires in the forest core can be prevented on a long-term basis and to ensure that less need for forest maintenance will not lead to growing dissatisfaction on the part of the population. If the project had not been carried out, it is highly probable that only small sections of the natural forest core would still exist today, and the preservation of the old plantations would also be at high risk. The alternative scenario has to be judged taking into account the management capacity of the authority which would alternatively (to the project-executing ONAB) hold responsibility for the plantations, DFRN. The possible result of this alternative is observable in the deplorable state of fuel wood plantations operated by the DFRN. The project's contribution to national timber supply is considerable, although it did not make a significant contribution to national fuel wood supply. This, however, was not to be expected in view of the size of the new plantations. We judge the project's significance and relevance to be overall sufficient (partial rating 3).

Based on the above partial ratings, we judge the aggregate developmental effectiveness of the project to be overall sufficient (rating 3).

Overall the project had a highly positive environmental impact since the degraded natural forest area was rehabilitated and the afforested teak plantations are still being maintained. Since commercial timber is now being brought onto the Beninese market, there is considerably less pressure on other tree species. The employment opportunities generated by the forest work (especially for women), the processing of fuel wood and the use of forest by-products (leaves and medicinal plants) enable the project to contribute to gender equality. Overall, the increasing private implementation of forest management in the plantations strengthens subcontractors and neighbouring local communities. Also, the decentralized use of complementary income at the village level supports the development of local social infrastructure. All of this encourages participatory development. Since the local population in the project region is mostly poor, giving these people work helps to guarantee the livelihood of poor population strata.

General Conclusions and Recommendations

The financial autonomy of the project-executing agency ensures the regular and timely implementation of maintenance measures to a high degree since the schedule for completing the work no longer depends on fund allocations from the public budget. The outsourcing of most of the implementation of this work to private subcontractors and the involvement of the local population are key factors that helped this approach to succeed. Under these conditions also a state-owned executing agency can ensure sustainable forest management.

The complementary training of local wood processors may also be a key element of a project that aims to support the primary sector as it strengthens the integration of the project output into the processing chains, leads to higher demand for the product that was relatively unknown at the time of the project appraisal (here: teak) and, in this way, helps to encourage private-sector involvement in processing and, in the long term, in production.

Unlike afforestation, the natural regeneration approach has proven to be an efficient instrument for cutting costs in sustainable timber production. Under certain circumstances it can also be applied to higher-grade commercial timber such as teak.

A more realistic estimate of the willingness to implement consulting measures (e.g. on sector reform and transparent accounting) can reduce the consulting costs and, thus, the amount of funds without jeopardizing the goals.

Small-scale timber production can serve as an additional branch of business if local demand ensures sales and if appropriate constellations can overcome initial liquidity bottlenecks and/or minimize the opportunity costs.

The decision on when to conduct an ex-post evaluation of multi-phase projects that build on one another and are carried out at the same location should be made very carefully to ensure that the subject of the evaluation is clearly distinguishable.

Legend

Developmentally successful: Ratings 1 to 3	
Rating 1	Very high or high degree of developmental effectiveness
Rating 2	Satisfactory degree of 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 of project evaluation, as a separate category of evaluation but instead as a cross-cutting element in all four fundamental questions of 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, organizational and/or technical support has come to an end.