

**Uganda: Road Maintenance Programme Eastern Uganda**  
**Road Maintenance Programme IV Eastern Uganda**

**Ex post-evaluation report**

<b>OECD sector</b>	21020 / Road transport	
<b>BMZ project IDs</b>	1991 65 887 (Road Maintenance Programme Eastern Uganda, investment) 1991 70 291 (Road Maintenance Programme Eastern Uganda, accompanying measure), 1997 65 041 (Road Maintenance Programme IV Eastern Uganda)	
<b>Project executing agency</b>	Ministry of Works, Housing and Communications	
<b>Consultant</b>	H.P. Gauff Ingenieure, Frankfurt	
<b>Year of ex post evaluation</b>	<b>2006</b>	
	<b>BMZ ID 1991 65 887, 1991 70 291</b>	
	<b>Programme appraisal (planned)</b>	<b>Ex post evaluation (actual)</b>
<b>Start of implementation</b>	Q2 1992	Q3 1992
<b>Period of implementation</b>	48 months	75 months
<b>Investment cost</b>	EUR 12.6 million	EUR 12.6 million
<b>Counterpart contribution</b>	EUR 4.4 million	EUR 4.1 million
<b>Financing, of which FC funds</b>	EUR 8.2 million	EUR 8.5 million
<b>Other institutions / donors involved</b>	-	-
	<b>BMZ ID 1997 65 041</b>	
	<b>Programme appraisal (planned)</b>	<b>Ex post evaluation (actual)</b>
<b>Start of implementation</b>	Q2 1997	Q1 1998
<b>Period of implementation</b>	42 months	75 months
<b>Investment cost</b>	EUR 32.4 million	EUR 51.7 million
<b>Counterpart contribution</b>	EUR 7.6 million	EUR 20.9 million
<b>Financing, of which FC funds</b>	EUR 24.8 million	EUR 30.8 million
<b>Other institutions / donors involved</b>	-	-
<b>Performance (overall rating)</b>	3	
<b>• Significance / relevance (sub-rating)</b>	3	
<b>• Effectiveness (sub-rating)</b>	3	
<b>• Efficiency (sub-rating)</b>	3	

## **Brief description, overall objective and project objectives with indicators**

The overall objective of the two projects was to contribute to the achievement of a macroeconomically favourably priced transport system in Eastern Uganda. The intention was to ensure that the rehabilitated roads were readily usable and that the cost of running a motor vehicle can be kept low, i.e. the cost of handling the expected volume of traffic can be maintained at a favourable level over the long term. The internal rate of return was selected as the indicator of the achievement of the overall objective. The overall objective was to be achieved by ensuring that the rehabilitated roads are readily usable and that the cost of running a motor vehicle can be kept low, i.e. the cost of handling the expected volume of traffic (programme objective) can be maintained at a favourable level over the long term. Satisfactory maintenance of the roads and the volume of traffic were selected as indicators of the achievement of the programme objective. In addition, in the ex post evaluation the "average daily volume of traffic", originally defined as the indicator of the achievement of the overall objective, was used to assess whether or not the project objective had been achieved. This was because the volume of traffic was more appropriate to measuring the utilization of the roads than their impact. The direct target group comprised motor vehicle owners in Eastern Uganda. Indirectly, it was intended to be of benefit to the entire population in the region, including cyclists in particular, who constitute a large portion of the road-users. Finance was provided for routine, periodical maintenance measures over a stretch of 653 km (BMZ ID 1991 65 887) and asphalt and gravel roads in the national road network over 1,396 km as well as for the establishment of two weigh bridges and an accompanying measure regarding training of contractors and staff of the Ministry of Works, Housing and Communications (MoWHC). In Phase IV the road surface was also reinforced along the important transport corridor from the border posts in Malaba and Busia to Buigiri. Important implementation features were an increasing involvement of private construction companies in road maintenance and an increasing assumption of responsibility for maintenance activities on the part of the MoWHC.

## **Project design / major deviations from the original project planning and their main causes**

Under the project, bituminous roads (92% of the roads in Phase III and 51% in Phase IV) and gravel roads were rehabilitated as planned (BMZ ID 1991 65 887: 653 km, planned: 659 km; BMZ ID 1997 65 041: 1,396 km, planned: 1,396 km). The measures financed covered the entire range of routine and periodical road maintenance.

The most important measure in Road Programme IV, which accounted for approximately 62% of the costs, was the reinforcement of the road surface along the international transport corridor from Bugiri to Malaba/Busia (85 km). Given the available funds, the entire road could only be rehabilitated in two phases. For this reason, a wearing course with reduced thickness was first laid, financed from German Financial Cooperation (FC) funds. The second stage in laying the wearing course was to be financed from funds provided by other donors. We consider this strategy to be adequate, given the alternative of allowing parts of the road to deteriorate and heavy congestion to build up on good sections. The current technical design of the road is adequate for the permissible axle loads. The wearing course will merely wear out more rapidly because it is not very thick.

In the accompanying measure administrative procedures were developed for the area of road maintenance and private contractors and engineers employed by the project executing agency were trained. In addition to the measures planned at the time of the project appraisal, a computerised planning and management system for road maintenance was introduced. As time went by, the MoWHC gradually assumed full organisational, technical and financial responsibility for planning and implementation of routine maintenance. The periodical maintenance measures were increasingly entrusted to private companies.

The establishment of the weigh stations was not satisfactory. As a result of the redesign of the border post in Malaba, the weighbridge was positioned in such a way that long tailbacks built up. The facilities were then closed. Although border checks are still carried out in Busia, heavy-goods vehicle traffic can now be diverted to Malaba.

## **Key results of the impact analysis and performance rating**

The overall internal rate of return was calculated for exemplary programme roads. The objective of achieving a return on interest of at least 11% in the maintenance measures was, at 21% and 96%, more than met. As it is part of the most important international transport corridor in the country, the road reinforcement along the stretch of road from Bugiri to Malaba/Busia was given top priority at the appraisal. Depending on the assumptions made at the time of contracting the second part of the wearing course, the internal rate of return in the relevant measures is 9% or 1%. However, the calculation takes account of vehicle running costs only, whereas other macroeconomically relevant impacts are ignored. For example, virtually the entire volume of Uganda's foreign trade passes through this corridor, including fuel imports, perishable goods, materials for industry and consumer goods for the local population. Without the project, overall costs affecting the economy, such as greater warehousing requirements, supply or production bottlenecks, or rotten goods, would be expected. We therefore assess the macroeconomic advantages of the measures on this section of the road as sufficient overall and the overall objective of the two projects as having been achieved.

The only data that can be used to assess the state of maintenance of the roads in the programme region are those for the national road network. According to those data, 20% of the road are in good condition, 62% in a satisfactory condition, 17% in an unsatisfactory condition and 1% in a poor condition. The state of maintenance of the roads in Eastern Uganda is reported by various donors and the MoWHC to be above the national average. This was confirmed during the local inspection. Overall, the state of the roads in the programme was satisfactory and the condition of the stretch of road between Bugiri and Malaba/Busia, for which the concern was from the start to ensure a high degree of sustainability, was good. The indicator of this programme objective was thus achieved. For the roads that were more precisely examined, the increase in the volume of traffic (second programme objective indicator) was on average between 1.3% and 15.5% per annum. The average volume of traffic on gravel roads was between 80 and 420 vehicles a day and between 520 and 7,700 vehicles on the asphalted sections of the roads. Capacity usage of the two types of road is therefore good.

Overall, the objectives of the two projects were achieved. Sustainability risks exist in three areas. A first sustainability risk arises from the fact that the outstanding road reinforcement measures on the stretch from Bugiri to Malaba/Busia must be carried out over the next few years if the road is to achieve its full lifetime. However, there is a high degree of probability that the European Commission will finance the second phase of the reinforcement measures from the 10th European Development Fund.

A second sustainability risk relates to the axle load inspections having only a limited impact. On balance, considerable initial success has been followed by a renewed increase in breaches of the rules (only 5% of the vehicles inspected in 1999 were overloaded). According to official figures, in 2005/2006 10% of the vehicles inspected in Busia were overloaded. Donor estimates for the country as a whole assume that as many as 20% of the vehicles are overloaded. As a positive feature, it should be noted that the MoWHC is planning to acquire additional mobile weighing stations in the coming financial year and that the infringements of the rules are not as serious as they were at the beginning of the project. A large number of vehicles have additional axles, which is probably essentially due to the more stringent axle load inspections of past years.

The third sustainability risk is related to ensuring that there is sufficient sector financing. After the donor community almost stopped its support at the end of the 1990s, routine and periodical road maintenance is currently financed almost entirely from Ugandan resources. Following a clear decline in 2002/2003, the budget is increasing again. The funds actually disbursed have remained largely constant in recent years. According to information provided by the Ministry, in the years from 2003 to 2005 90% of the required routine maintenance and 77% of the required periodical maintenance measures were carried out. According to data provided by the donor community, current expenditure for the periodical and ongoing maintenance is 65% of the estimated requirements. This means that there is a risk that the maintenance backlog of around 20% at present will increase. The donor community is planning to provide further financing for road maintenance measures for a transitional period until a Road Fund has been introduced.

The Ugandan government has committed itself to increasing the resources available for maintenance measures. Compared with the situation when the road maintenance programme in Eastern Uganda was appraised in 1990, the current situation shows a marked improvement. At the time of the appraisal maintenance measures were being carried out on 13% of the network only.

The project did not actively address the underlying conditions in the field of transport such as sector financing, institutional structures or strategic planning. Although other donor organisations were active in this field, with regard to the sustainability of the programme measures, particularly in the field of sector financing, more commitment would have been useful. However, the project brought about a partial improvement in the underlying sectoral conditions as the technical/administrative performance of the MoWHC was enhanced. The computerised management and planning system introduced by the project was extended to the entire country and thus achieved a considerable broad-scale impact. As the first of their kind in Uganda, the two projects also contained activities to promote national construction companies. In contrast to the situation at the time of the programme appraisal in 1991, local enterprises are now in a position to carry out periodical maintenance work. The portion of maintenance work contracted out to private companies rose from 20% in the early 1990s to 70%.

Projects in the road sector are part of the national poverty reduction strategy. Direct poverty effects have been achieved as part of routine maintenance work, which each year provided employment for around 650 poor villagers initially and around 1,400 after the start of Phase IV. However, the programme mainly made an indirect contribution to poverty reduction. In the field of agriculture, in which most of the poor people are employed, it creates an affordable access to sales markets, inputs and consumer goods. This applies particularly to Phase IV, which includes a greater number of gravel roads. The two programmes have little potential to promote gender equality. Possible approaches would have been to place greater emphasis on this aspect through the training component and to employ more poor women in routine maintenance work. Women make extensive use of the roads but this does not make a significant contribution to gender equality as motor vehicles are mainly owned by men. The projects give women access to the social and economic infrastructure. Overall, a balance is being achieved between positive (reduced noise and dust pollution and traffic security measures) and negative environmental impacts (an increase in the volume of traffic).

For the sustainable achievement of the criteria of efficiency, effectiveness and significance/relevance, the three aforementioned risks will continue, although they have so far not led to a significant reduction of the impacts. Overall, we consider these residual risks acceptable as concrete solutions exist for all three areas.

The trafficability of the roads (programme objective) was generally satisfactory and good for the section between Bugiri and Malaba/Busia, for which there were considerable concerns regarding sustainability. The maintenance on by far the greatest portion of the roads is currently being carried out properly. No serious negative side effects of the measures can be observed. With regard to ensuring adequate maintenance over the entire technical lifetime of the roads, however, the aforementioned residual risks exist for the two projects, which is why the effectiveness in both cases is given sub-rating 3.

Owing to the high volume of traffic and the ensuing macroeconomic impacts, from the current perspective, too, the measures in both projects contributed to achieving the overall objective. Maintaining a well-functioning road network is part of the Ugandan poverty reduction strategy. The donor community also considers this field of activity relevant and provides intensive support for it. The projects thus continue to relate to a key problem in Uganda. The criterion of relevance has been met. The figures for the overall target indicators are good on virtually all roads. On the section between Bugiri and Malaba/Busia they are generally still acceptable. Owing to the residual risks, the significance/relevance of the two projects has been given sub-rating 3.

Because other means of transport than roads are virtually without relevance in Uganda, the choice of sector for action was justified from the allocation perspective. The internal rate of return and the further macroeconomic effects of the two projects are considered good. Owing to the remaining risks, the allocation efficiency in the two phases can be said to be sufficient. The specific costs of the road maintenance programme in Eastern Uganda were appropriate. How-

ever, the average funds provided for road maintenance were at the lower end of the scale of requirements. For Road Programme IV the specific costs of reinforcing the road surface have increased dramatically. However, this has less to do with design errors than with the fact that at the time of the construction, the remaining carrying capacity of the road had decreased and the prices of important inputs had increased considerably. Efficiency is reduced by the fact that the weigh stations financed have hardly any impact. The overall efficiency of the two projects is therefore given sub-rating 3.

The above-mentioned sub-ratings mean that, for both the Road Maintenance Programme in Eastern Uganda and Road Programme IV, the developmental efficacy can be said to be sufficient overall (rating 3).

### General conclusions

The general conclusions are that in cases where sufficient sectoral finance determines the sustainability of the investment and where it is uncertain at the time of the appraisal whether this condition can be met, FC should develop a method of securing financial sustainability once the project has been completed.

The second general conclusion applies to cases in which a measure can initially only be partly financed from FC funds and does not reveal its full effect until follow-up finance is secured, although the availability of that finance is not certain at the time. A situation of this kind should be avoided from the outset by the early acquisition of co-financiers. However, if the situation cannot be avoided, a critical presentation and assessment of the expected impacts should be made if follow-up finance is not available.

### Legend

Developmentally successful: Ratings 1 to 3	
Rating 1:	Very high or high degree of developmental efficacy
Rating 2	Satisfactory developmental efficacy
Rating 3	Overall sufficient degree of developmental effectiveness
Developmental failures: Ratings 4 to 6	
Rating 4	Overall slightly insufficient degree of developmental efficacy
Rating 5	Clearly insufficient degree of developmental efficacy
Rating 6	The project is a total failure.

### Performance evaluation criteria

The evaluation of the “developmental efficacy” of a project and its classification during the ex post evaluation under one of the various levels of success described in more detail above concentrate on the following fundamental questions:

- Have the **project objectives** been achieved to a sufficient degree (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, can these be tolerated?

We do not treat **sustainability**, a key aspect to consider when a project is evaluated, as a separate evaluation category, but rather as an element common to all four fundamental questions on 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 independently and generate positive results after the financial, organisational and/or technical support has come to an end.