Zimbabwe: Rural road construction programme Phase III, IV, V/VI, VII
Erosion control (rural road network)

Ex post evaluation report

OECD sector	21020 - Road transport	
BMZ project ID	(1) 1991 65 069 Rural road construction prog. III (Inv.) (2) 1991 70 010 Rural road construction prog. III (Complementary measure) (3) 1993 65 180 Rural road construction prog. IV (Inv.) (4) 1993 70 073 Rural road construction prog. IV (Complementary measure) (5) 1995 65 615 Rural road construction prog. V/VI (Investment) (6) 1995 70 292 Rural road construction prog. V/VI (Complementary measure) (7) 1997 65 421 Rural road construction prog. VII (Investment) (8) 1995 70 108 Rural road construction prog. VII (Complementary measure) (9) 1996 65 662 Erosion control (Rural road network)	
Project-executing agency	(1 – 9) District Development Fund	
Consultant	(1 – 6) GITEC Consult, Düsseldorf (7-9) Stange Consult, Konstanz	
Year of ex post evaluation	**2006**	
	Project appraisal (planned)	**Ex post evaluation (actual)**
Start of implementation	(1) Q2 1991 (2) Q1 1991 (3) Q2 1993 (4) Q1 1993 (5) Q2 1996 (6) Q3 1995 (7) Q1 1998 (8) Q1 1998 (9) Q1 1997	(1) Q1 1992 (2) Q1 1991 (3) Q2 1993 (4) Q1 1993 (5) Q1 1997 (6) Q3 1995 (7) Q3 1998 (8) Q1 1998 (9) Q1 1997
Period of implementation	(1) 27 months (2) 24 months (3) 27 months (4) 30 months (5) 9 months (6) 29 months (7) 24 months (8) 24 months (9) 42 months	(1) 20 months (2) 24 months (3) 41 months (4) 31 months (5) 25 months (6) 29 months (7) 17 months (8) 24 months (9) 64 months
Investment costs	(1) EUR 12.79 million (2) EUR 0.68 million (3) EUR 26.84 million (4) EUR 2.56 million (5) EUR 7.30 million	(1) EUR 12.79 million (2) EUR 0.68 million (3) EUR 27.00 million (4) EUR 2.56 million (5) EUR 8.41 million

	(6) EUR 2.20 million (7) EUR 18.40 million (8) EUR 0.50 million (9) EUR 3.77 million	(6) EUR 2.20 million (7) EUR 6.44 million (8) EUR 0.50 million (9) EUR 3.08 million
Counterpart contribution	(1) EUR 4.26 million (2) - (3) EUR 8.95 million (4) - (5) EUR 1.83 million (6) - (7) EUR 3.57 million (8) - (9) EUR 0.70 million	(1) EUR 4.26 million (2) - (3) EUR 8.95 million (4) - (5) EUR 2.94 million (6) - (7) EUR 3.37 million (8) - (9) EUR 0.70 million
Financing, of which Financial Cooperation (FC) funds	(1) EUR 8.53 million (2) EUR 0.68 million (3) EUR 17.90 million (4) EUR 2.56 million (5) EUR 5.47 million (6) EUR 2.20 million (7) EUR 14.83 million (8) EUR 0.50 million (9) EUR 3.07 million	(1) EUR 8.53 million (2) EUR 0.68 million (3) EUR 17.90 million (4) EUR 2.56 million (5) EUR 5.47 million (6) EUR 2.20 million (7) EUR 3.03 million [1] (8) EUR 0.16 million [1] (9) EUR 2.38 million [1]
Other institutions/donors involved	n.a.	n.a.
Performance rating:	5	
• Significance / relevance	5	
• Effectiveness	5	
• Efficiency	5	

Brief Description, Overall Objective and Programme Objectives with Indicators

The road construction programme aimed at improving primary rural access roadways in areas largely inhabited by smallholders (Communal Areas - CA, Resettlement Areas - RA and Small Scale Commercial Farming Areas - SSCFA). A main concern was to improve basic rural roadways particularly where trafficability or previous access was so poor as to hamper economic and social development. In addition to the roadworks, material and equipment was provided to set up a road maintenance system. Complementing this, the erosion control project aimed at reducing soil resource loss to secure the roadworks investments. The executing agency, the District Development Fund (DDF), was supported in backstopping the overall programme through flanking measures in personnel training and planning and steering the maintenance scheme. Due to the escalation in political tensions, FC funding for the whole programme was terminated at the end of May 2002. At this time, the funds for Phases III - VI of the rural road construction programme had been fully paid out, while considerable residual funds were left over in the other projects (Phase VII: EUR 11.8 million; complementary measure: EUR 346,000; erosion control, EUR 688,000). These remaining funds are allotted for reprogramming as soon as formal talks can take place provided development cooperation is resumed after an improvement in the general conditions. This will take place in consultation with BMZ. KfW will report separately on the allocation of residual funds.

[1] The data refer to the amount disbursed at the time of the ex post evaluation as no further disbursements are envisaged and the residual amount is available for reprogramming.

At the beginning of the period under review (at appraisal of Phase III in 1990), the planned primary thoroughfares were to measure almost 19,000 km, with 3,750 km earmarked for construction and the rest for upgrading. About 58% had been completed in mid-1990 and were fully passable all year round, while 7% were under construction. Up to termination of cooperation, investments in maintenance camps were continued throughout the various phases, 17,714 km of the construction/upgrading plans completed and a maintenance system finally set up for some 24,000 km of roadway (serving other roads under the purview of the DDF in addition to the primary roads).

The rural road construction programme was supposed to guarantee adequate, all-year-round trafficability, for which the indicator defined as the volume of traffic and the frequency of bus services (at least 2 busses and 15 cars/day). The programme's overall objective was to contribute to economic and social development in the rural regions of the country, measured by agricultural goods marketing and increased social services.

The erosion control project was intended to support the objectives of the road construction programme by reducing the danger of erosion on rural roads and contributing to curbing soil losses (indicator: reduction of input for extraordinary repairs by 20% in four years). The overall objective at project appraisal was the contribution to attaining the objective of the road construction programme with the above indicator; in hindsight the scope of the overall objective must be enlarged and defined as contributing to economic development through erosion reduction.

Programme Design/Major Deviations from Original Planning and their Main Causes

The DDF is in charge of the construction and maintenance of rural roads and basic water supply facilities in the Communal Areas and (since June 1994) the RA and SSCFA. The whole programme to promote rural road construction and the erosion control measures was implemented via this executing agency and 17,714 km of roadway were built or upgraded throughout the various phases.

The material and equipment needed for the upgrading measures was financed by the projects, including steel profiles for bridges and culverts. To secure sustainability and cut the costs of upkeep, the projects developed and set up a maintenance scheme with local camps. A total of 180 maintenance camps cover all 57 districts in the country and with one base station (equipped with a tractor, a traction road grader, trailer, water van and basic office buildings as well as implements) and with several pull-in camps, they perform periodical and routine servicing. As far as possible, the latter is carried out by hand, with a tractor-drawn road grader or - in the dry season - a tyre drag used for grading.

To assist in building up the maintenance system through equipment servicing and training local counterpart personnel for this, up to eight development aid workers were assigned by DED at the same time. This support was successively reduced, suspended due to the increasingly precarious security situation and then finally terminated completely at the end of 2001.

In the earlier project phases and till the end of 1999, funding for routine maintenance was largely secured but then serious deficits arose and relevant conditionalities were no longer being met as of 2000. Concurrent cutbacks were made in a fund to procure replacements, which was successively wound up in the years after 1999 due to a shortage of finance.

Exacerbated by the FC contribution's arrangements for pre-finance and reimbursement, the increasing shortage of project executing agency funds progressively slowed down the upgrading works to the detriment of programme efficiency. For this reason, the upgraded stretches had already fallen short of the targets in Phases V/VI (1.048 km instead of 1.200 km as planned in

Phase VII, 550 km of the planned 1,850 km completed on termination). The final audits found that the respective funds had been properly useed and all the requisite vouchers fully documented.

The funding shortage will make itself felt after a delay, as the organizational improvement of routine maintenance has extended the necessary intervals for periodical upkeep (e.g. information indicates that the gravel layer only needs to be reapplied after 10-12 years), but only 455 km of the planned 1,745 km were being maintained as early on as 1997-99 and periodical maintenance has been almost completely defunct since. Altogether, due to the backlog of periodical upkeep a new layer of gravel needs to be reapplied on large stretches of the roadways, which cannot, however, be financed from the budget. Local repairs are carried out, but these cannot keep up the system on any signicant scale.

The erosion control project was intended as a complementary measure to stem erosion damage due to surface runoff from adjacent farmland and during heavy rains. These measures were also supposed to contribute to reducing agricultural soil depletion at the same time. The implementation was carried out by setting up erosion control groups at district level which planted and cultivated vetiver grass fields. These were planted to stabilize vulnerable slopes and embankments and require little maintenance. Vulnerable stretches of roadway were also stabilized by erecting stone barriers with a high labour input. Set up in all 57 districts, these groups were organizationally incorporated into the maintenance setup in the course of the project. In this project also, the lack of local budget funds and the resulting personnel shortages delayed execution.

Key Results of Impact Analysis and Performance Rating

Microeconomic assessment

The main microeconomic impact of improving the roadways is the reduction of passenger and goods transport costs, which ought to provide incentives for rural development and indirectly improve social infrastructure facilities. Prospects for cutting transport costs was a foremost consideration in the roads selected for improvement. The intention behind upgrading the roadways was to make this microeconomic benefit successively available to a large percentage of the rural population. Due to the rapid deterioration in the macroeconomic, political and social conditions, these anticipated impacts have failed to materialize or have developed badly. The direct reason is the decline in agricultural production and the indirect reason is the reduction in the population’s mobility due a massive drop in income. These factors are aggravated by the growing shortage of petrol, spare parts and tyres, resulting in fewer transport services. In the individual cases in the information survey where traffic did not decline, this was due to rerouting from of other roads which had become impassable due to lack of maintenance. Unless there is a basic improvement in general conditions, there is no chance of any betterment in the project's microeconomic impacts. A rise in bicycle traffic has been reported, but this can only substitute for the anticipated impacts to a very limited extent and could have been supported with far more cost-effective roadways.

The erosion control measures have had sporadic microeconomic impacts on the fields of individual farmers where land has been protected by boundaries and gullies. These impacts were originally achieved through the successful stabilization reported at final inspection. The most important impacts had, however, been expected in the reduction of costs for extraordinary repairs (indicator: reduction by 20% in four years). Although the quantitative output originally planned was exceeded at first despite the shorter project term, the intended impacts have remained sporadic as it was impossible to continue work on new problem sites for lack of funds. The sustainability risks for the individual measures are relatively low, but the capacity impact of

the approach would have required a continuation on new stretches of road in need of repair. Indicator achievement could not be determined at final inspection since road maintenance was already being generally neglected at that time, the scale of 'extraordinary repairs' could no longer be usefully measured and considerable additional repair work was needed due to Cyclone Eline in February 2000. There have been no capacity-building impacts in extending the network of erosion control groups since final inspection and the groups are now very restricted in their operations for lack of funds at national level. No appropriations were made to the fund for extraordinary repairs in 2002-2004, whereas at the end of 2005 funds were made available to repair acute damage caused by heavy rainfall, which, however, only amounted to 2% of the (insufficient) allocations for routine maintenance.

For the project executing agency, the microeconomic assessment pertains to unit costs during the implementation phase or the level of finance for the periodical or routine maintenance of the roadways from earmarked funds. Up to ex-post evaluation, the maintenance system setup has proved to be relatively robust, despite adverse circumstances, with the executing agency largely managing to retain most of the personnel and keep the bulk of the original machine park. Nevertheless, due to the increasing shortage of operating inputs and spare parts, the remaining operational capacities are very limited and can hardly fulfill their actual purpose under the present conditions. For lack of tyres, only an estimated half of the tractors and machinery are in running order and the lack of petrol places an added constraint on their use. Sporadic routine maintenance, which largely relies on manual labour, is still performed occasionally. The bottlenecks in periodical maintenance that had already arisen during implementation have, however, worsened so much that maintenance no longer takes place at all. The system as a whole is hardly able to make replacement investments for machinery. The fund allocations in 2002-2005 only amounted to some 25% of estimated local requirements. At the beginning of 2006, 35% of estimated requirements were nominally budgeted, which at an official inflation rate of 1,000% (May 2006), however, does not give grounds to expect any improvement in the situation. The figures indicate a steady decline in budget funds per kilometre of road. While in 2002, the arithmetic average came to almost EUR 255/km (routine and periodical maintenance), which was already under the international benchmarks, it then fell to EUR 63/km in 2003, EUR 25/km in 2004 and EUR 39/km in 2005. The figures calculated on the basis of national currency using the exchange rate from the middle of the year can only serve as approximations. Their usefulness is heavily undermined by rapid inflation, petrol allocation to government distribution quotas and lack of access to foreign currency for procuring spare parts.

Macroeconomic assessment

Due to the large scale of upgrading works throughout its phases, the programme was intended and had the scope to achieve a broad impact and a capacity-building effect through the new maintenance camps scheme, so it could have made a significant contribution to national economic growth. The primary argument when selecting rural roads for upgrading or construction was the contribution to economic development so that an adequate average volume of traffic was defined as at least two bus services and 15 vehicles a day. Traffic has declined since final inspection due to the economic decline. Although the average volume of traffic on the extensive roadways cannot be quantified exactly, based on spot checks, we estimate around 5-10 vehicles a day. So the indicator as defined has not been met.

Till now, reports indicate all-year-round trafficability for most of the roads at reduced speed with differing states of repair depending on subsoil, rainfall and slope incline. If the general conditions do not alter soon, however, there is no way to prevent the investments from becoming ineffectual, thus forfeiting the attendant potential national economic benefit.

The impact of improved transport access to rural areas is its contribution to economic development by reducing transport costs and times or raising the frequency or quality of

passenger and freight transport services, with secondary impacts anticipated through improved access to social infrastructure and services. Cost reduction in passenger and goods transport ought to have generally beneficial impacts on the poor, who make up the majority of the population in rural Zimbabwe. These impacts are the indirect result of programme objectives achievement and were not explicit objectives. The outreach for both genders as an indirect target group through the promotion of economic and social development afforded scope for more gender equality as women are worse affected by restricted mobility and deficient social infrastructure than men in rural areas. Due to the decline in mobility and the limited sustainability of the investments, these programme outputs have not been used, however.

Although the roads and rural tracks were built with relatively few incursions on the environment, the road building projects did not pursue any direct environmental objective, while this was explicitly the case in the project on erosion control. The decentralised planning and implementation of measures cannot be designated as a contribution to good governance or participatory development. This could only be expected as an indirect result of increasing the scope for the broader participation of rural regions in national economic development, which did not turn out to be the case.

Overall, we assess the impacts of the programme as follows:

- The roadways had already been largely improved at final inspection, although increasing delays occurred in the last project phases due to the growing shortage of budgetary funds, which impeded construction works. Altogether, this impact could be assessed as sufficiently effective, if sustainability had been assured. The periodical maintenance operations, which were already insufficient in the final stages of implementation, then came to a virtual standstill due to lack of funding. This means that the programme objectives can no longer rate as met even at the time of ex-post evaluation and trafficability can be expected to deteriorate further in future. So far, the measures for improving the road maintenance system have still had a beneficial effect as the restrictions have largely impeded average travel speed, while the decline in maintainable roadways has been less serious. This disrepair will, however, get worse for lack of replacement investments and increasing disuse of machinery and equipment. Due to the widespread shortages, particularly the lack of fuel and tyres, the organisation's operational capacity is diminishing. The sustainable effectiveness of the projects is therefore clearly insufficient (Subrating for effectiveness: 5).

- Improving the rural transport infrastructure was supposed to contribute to economic and social development in rural areas. As there has been a sharp drop in traffic on most roads, the overall objective has not been reached. The lower transport capacity heavily detracts from the developmental benefit of the programme and in this case merits a negative assessment of developmental efficacy. Even though the original design of the programme was right, it can no longer rate as significant due to the serious deterioration in the macroeconomic framework (Subrating for relevance/significance: 5).

- The unit costs for road construction and the organization of the maintenance scheme were reasonable for the largest part of the implementation phase and could have been very efficient thanks to a system of roadways with cost-effective maintenance. So the production efficiency of programme implementation was initially good. Due to growing constraints on the executing agency's budget, however, the construction works became increasingly inefficient in the final phase of the programme. This trend has worsened since the end of cooperation so much that despite the continuing existence of the maintenance facilities they can only perform their tasks to a very limited extent and the impacts of the measures (allocative efficiency) have not materialized. For this reason,

the (sustainable) efficiency of developmental efficacy is clearly insufficient (Subrating for efficiency: 5).

Weighing up the key developmental criteria in conclusion, we assess the impact of the projects overall as clearly insufficient (**Rating 5**).

The quantitative targets for the erosion control project were originally exceeded, despite a shorter project term. The sustainability and broad impact of this project has also been affected by the grave deterioration in the sectoral and national economic climate, so that it has to be judged like all other projects in the final analysis.

General Conclusions and Recommendations

If, contrary to expectations, the budget of the executing institution for routine or periodical maintenance is curtailed, a very critical appraisal should be made of whether further upgrading of roadways/trackways is worthwhile, in order to avoid any misallocation of funds.

Key

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 efficacy**
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**

Criteria for Evaluating Project Success

The evaluation of the developmental efficacy 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 to consider for project evaluation, as a separate category of evaluation but instead as a cross-cutting element of 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 on their own and generate positive results after the financial, organisational and/or technical support has come to an end.