

Ex post evaluation – Kenya

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Sector: Agricultural development (31120)
Programme/Project: Mt. Kenya Rural Roads Infrastructure
 Phase I: 2001 66 652*, Phase II: 2005 65 374*
Implementing agency: Kenya Rural Roads Authority (KeRRA),
 until 2007: Ministry of Roads, Public Works and Housing (MoRPWH)



Ex post evaluation report: 2016

		Project A (Planned)	Project A (Actual)	Project B (Planned)	Project B (Actual)
Investment costs (total)	EUR million	9.07	9.07	25.45	60.15
Counterpart contribution	EUR million	1.00	1.00	1.45	34.90
Funding	EUR million	8.07	8.07	24.00	25.25
of which BMZ budget funds	EUR million	8.07	8.07	4.00	4.00

*) Random sample 2015

Summary: Both funding phases promoted the same set of interventions and can therefore only be evaluated together. The programme focused on improving agricultural infrastructure in the area around Mt. Kenya by upgrading priority road sections in Meru district to all-weather standard. The programme was part of the "Private Sector Development in Agriculture (PSDA)" framework supported by German-Kenyan development cooperation. It was designed to improve marketing infrastructure in the programme region and was co-financed with EU funds to the tune of EUR 21.25 million. Only around 84 km of the planned 215.8 kilometres of road were built - as a result of general cost increases during the lengthy planning phase, an increase in construction standards and an under-estimation of costs. The selected sections carry a significant proportion of the agricultural products transported via the region's road network.

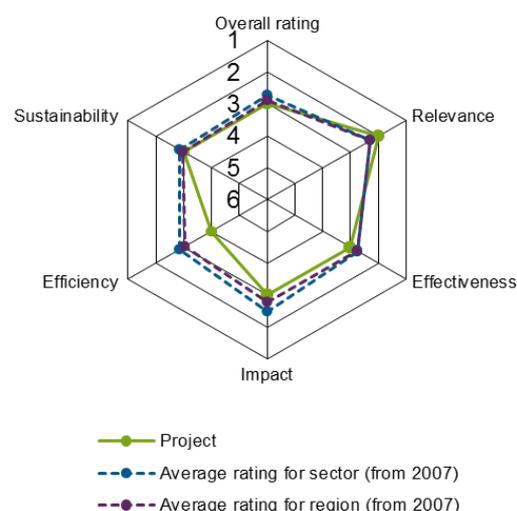
Objectives: The intended outcome was to ensure the sustainable and efficient handling of the expected traffic volume on the upgraded road sections - as well as better access to social infrastructure facilities. The improved traffic links were to help raise the population's socio-economic living standards in the programme region by virtue of higher agriculture-based household incomes and better provision of social infrastructure services to the population (impact).

Target group: Primarily the population living in the direct catchment area of the roads and the local agricultural and commercial businesses.

Overall rating: 3 (both phases)

Rationale: The project generated some positive developmental impacts. However, significant construction delays and the major cost overruns impinged on overall efficiency. The process of reforming Kenya's roads sector is far from being completed - which poses a risk to the programme's sustainability.

Highlights: The high developmental impacts of the project, such as an extended tea harvesting period from previously 7 months to 12 months per year, largely compensated for the limited coverage caused by the reduced volume of road sections. The sharp cost increase was borne exclusively by the Kenyan side, which led to an unusually high counterpart contribution of nearly 50%.



Rating according to DAC criteria

Overall rating: 3 (both phases)

Relevance

The approach of fostering cultivation and marketing of agricultural products in high-potential regions by extending transportation infrastructure in those regions remains highly relevant in development terms. Although Kenya's transportation infrastructure has undergone extensive modernisation in recent years, inadequate road and supply infrastructure still represent a significant development impediment in rural areas. In a 2014 survey conducted by the National Democratic Institute, 55% of Kenyans surveyed believed that the improvement of rural road networks should be a priority of the newly established local governments.

The programme region, Meru district, is an important agricultural production area with a high population density, favourable climate conditions and fertile soils. However, public investments in extending the road network have not kept up with agricultural development. As a consequence, production of high-value agricultural products has lagged significantly behind its potential. This was correctly identified during the design of the project, and remains valid today. For instance, the second Meru County Development Plan (2013-2017) mentions the road network's poor state, the associated high dependency on middlemen, and low added value to agricultural production as two of four central barriers to development in the region. One particular constraint consists in the poor possibility of the road network during the rainy season. A large proportion of gravel and dirt roads, which constitute 22% and 66%, respectively, of the overall road network in Meru County, cannot be navigated all year round; this has a negative impact on small farmers' income, as they cannot deliver high-value products like tea, bananas and dairy products to markets year-round or sufficiently fast, and often only at a significant loss of quality. At the same time, the region's population density has continued to increase since programme appraisal; as a result of shrinking acreage available to small farmers, the transition to higher-value crops is becoming increasingly important.

The project's orientation corresponds to Kenya's national overarching strategy, "Vision 2030", and to the second national development strategy resulting from it (the Medium Term Development Plan II for 2013-2017), which places particular emphasis on the extension of the road network as basis for long-term development. The project logically suited the Kenyan sector strategy, which aims to gradually upgrade the rural road network to all-weather-standard; through its approach of involving the private sector in the construction and maintenance of programme roads, it has contributed to the nationwide implementation of the "Roads 2000" programme. That programme, among others, seeks to involve the private sector in road maintenance. At the time when the project was designed, it was aligned with the development policy priorities in the country strategy of the German Federal Ministry for Economic Cooperation and Development (BMZ); it represents an important component in German DC's "Private Sector Development in Kenyan Agriculture" (PSDA) programme.

Relevance rating: 2 (both phases)

Effectiveness

- The programme objective was the sustainable and efficient handling of the expected traffic volume on the extended road segments, and the establishment of improved access to social infrastructure. This was to be measured by an increase in traffic volume, a reduction in transport fees along the programme roads and a reduction in transport costs and times to the nearest school or health centre.
- All available information and survey data point to the conclusion that the respective target values have been achieved. Programme interventions have led to an average traffic increase of 67% on programme roads, which significantly exceeds the target indicator (30% increase). One positive noteworthy point is the predominant use of the roads by passenger vehicles, followed by shared taxis common in Kenya and smaller agricultural vehicles used to bring goods from farms out to markets in different areas of the country. The high percentage of passenger vehicles can be attributed to the high density of smaller businesses along the programme roads which trade in light consumer goods. At final in-

spection transportation costs for passenger and freight traffic along the programme roads were found to have gone down by some 35-50% since the completion of the roads - a result of lower vehicle operating costs and improved connectivity. It is reasonable to assume that users of the programme roads will continue to benefit to a similar degree from such savings. Accordingly, the target indicator of a 30% or larger decrease in transportation costs has been met. It was not possible to document changes in terms of transportation costs and times to social and health facilities in particular. However, reports suggest that transportation times along the programme roads have been cut in half as a result of the improved construction standards. Consequently, it can be assumed that travel costs and times to schools and health centres have been similarly reduced, and that the indicator has been achieved.

- An additional programme objective was to enhance the impact of the irrigation project “Smallholder Irrigation Mt. Kenya”, now in Phase IV, through improved market access. In the end, however, only a small number of FC-funded small irrigation systems were in the roads’ immediate catchment area, so the projects could not really be considered to complement one another. Nevertheless, a positive project outcome is the improved market access for a number of small irrigation systems that received FC funding in the 1980s, which are still being successfully operated and used.
- Serious limitations were caused by deviations from time schedules and construction standards for the roads being financed. As a result, the 215.8 km of roads that were supposed to be built initially had to be reduced to a total of just 84 km.

In light of the sharply reduced number of kilometres, effectiveness is evaluated as merely “satisfactory”

Effectiveness rating: 3 (both phases)

Efficiency

Delays were encountered during both the design and execution of the project. Delays at the design stage were due to the long and arduous consultant selection process, revisions to tender documents and bureaucratic hurdles that arose from the transfer of project responsibility from the Ministry of Roads to the new Kenya Rural Roads Authority (KeRRA). Construction management was also distinctly sluggish as a result of unresolved land rights issues as well as tensions between the executing agency and the implementation consultant and between the executing agency and the building contractor. Those were not entirely comprehensible in retrospect. The construction period was extended from 24 to 33 months. However, it is worth noting that tensions between the Kenyan contracting authorities and the building contractor also arose in other nationally financed road construction projects. That phenomenon does therefore not appear to be directly and exclusively related to the FC project. Ultimately, the project’s construction phase was not completed until October 2012, a full three years later than originally planned.

The cost overrun of 100% (despite the significantly shorter length of road constructed) can be explained, on the one hand, by construction standards that were set too low at appraisal, and on the other hand by prices that were also estimated too optimistically. A number of necessary structures, e.g. 7 new bridges, had not been taken into consideration in the feasibility study. The impacts of climate change have manifested themselves in the form of increasingly heavy rainfall in the programme region. As a consequence, the higher construction standards ultimately applied can be evaluated as appropriate. In addition, a general increase in construction costs was also observed in comparable projects (the FC project for the Maai Mahiu-Narok road). Extended construction periods necessitated increased consultancy efforts, which also had a negative impact on total costs. In recent years, cost overruns on donor-funded road construction projects have become increasingly common in Africa.¹ Given the higher construction standard, the costs incurred were just at the upper limit of the cost framework that can be considered realistic for roads of comparable standard (e.g. for national highways). The additional costs were borne almost entirely by the Kenyan side, which led to an unusually high counterpart contribution of nearly 50% of overall financing.

Production efficiency and allocation efficiency were compromised by delays and cost increases - unit costs ultimately rose from EUR 179,000 per kilometre of road to EUR 790,000 per km, along with an al-

¹ African Development Bank (2014), "Study on Road Infrastructure Costs: Analysis of Unit Costs and Cost Overruns of Road Infrastructure Projects in Africa", Statistics Department AfDB, May 2014.

most complete lack of synergy effects with the irrigation measures implemented under the same DC programme (see Relevance). These constraining factors can only be partially compensated for by the increased traffic volume and improvements in marketing structures. Accordingly, efficiency is evaluated as no longer satisfactory.

Efficiency rating: 4 (both phases)

Impact

- An improvement in living conditions for the target groups was defined as the project's intended impact. This was to be measured by an increase in the proportion of high-quality products in agricultural production and an increase in agricultural income in the programme region. From today's perspective, there is much evidence to suggest that the desired effects were achieved. However, this qualitative assessment is based solely on the results of semi-random surveys along the programme road and on telephone interviews with the managers of two tea factories in the road catchment area.
- The proportion of high-quality agricultural products originating from the programme region has increased significantly. No quantitative data is available on the development of cropping patterns. Nonetheless, it is striking that - in comparison with neighbouring roads of lower quality - more produce of higher quality such as tea and bananas are being cultivated along the programme roads. In particular, the proportion of tea – one of the programme region's main products – in agricultural production has increased - also as a result of the project. Thanks to roads' all-weather standard, the harvesting season for tea could be extended from 7 to 12 months a year, leading to a 15-35% yield increase for so-called "green leaf". Shorter transport times and reduced dust pollution also increased the quality of black tea - and therefore of sales prices as well. Kenyan media reports point to distribution conflicts between tea farmers and the managers of tea factories in Meru County. This indicates that smallholders are not benefiting fully from the price increases². Nevertheless, the project did result in an increase in agricultural income from the sale of tea and bananas. Thanks to better road connections, it is now possible for lorries to pick up produce directly at the farm gate, thus reducing the smallholders' (financial) dependency on middlemen. According to reports, farm gate prices have also increased: for instance, a bundle of bananas could be sold for KSH 400 at the time of final inspection, as opposed to KSH 250 previously. In addition, the project has helped to create employment opportunities, at least temporarily, as up to 500 local workers were employed on the construction sites each year during the construction period. Scientific studies reveal³ that road construction projects typically also have a long-term positive impact on employment due to the workforce's increased mobility.
- There is evidence that smaller rural roads in the programme region were upgraded as an indirect result of the project. These positive side-effects, which had not been anticipated, resulted from the fact that the access roads to the three tea factories were upgraded as part of the project. Normally, the cooperatively organised tea factories are independently responsible for the maintenance and development of factory access roads. Thanks to the development of the access roads as part of the project, the factories were able to alternatively use their funds for upgrading smaller rural roads.
- Accidents are an enormous problem in sub-Saharan Africa - and in Kenya as well. Some 3,000 to 3,500 people die on Kenyan roads every year, which represents a very high rate of about 20 deaths per 10,000 vehicles. Some 40-50% of traffic deaths are pedestrians. Immediately after the programme's completion (which also comprised the construction of speed bumps within villages), a number of pedestrians were killed on programme roads. Safety courses were then initiated in primary schools, in order to better inform people of traffic risks. In future projects, even greater attention must be paid to traffic safety early on.
- There is no evidence of other negative side effects, e.g. increased spread of HIV/AIDS, resulting from the project. Furthermore, there is no indication of smallholdings having been displaced by agro-industrial businesses (e.g. large-scale tea and banana cultivation).

² Republic of Kenya, 1st Assembly, 2nd Session, 27th November 2014, "Meru County Tea Report".

³ KfW Studies and Proceedings (2014) - Employment Effects of road construction and access-to-energy interventions - Evidence from a review of the literature.

In conclusion, we rate the overall impact as satisfactory.

Impact rating: 3 (both phases)

Sustainability

The sustainability of the impact made by roads is critically dependent on how well they are maintained. From 2009 on, the institutional set-up in Kenya's road sector has been revised: the Kenya Roads Board serves as the steering body in charge of funding administration, whereas the Kenya Rural Roads Authority (KeRRA) is the organisation responsible for developing and maintaining the rural roads network. This structure has strengthened the institutional framework conditions for road maintenance in Kenya. Although KeRRA appeared relatively weak at the start of the programme, the executing agency's performance capacity appears to have increased significantly since that time. In recent years, KeRRA has benefited from extensive institutional funding, e.g. from the 10th and 11th European Development Fund., This has led to improvements in quality and qualifications in the design and execution of road maintenance measures. As part of this evaluation, the executing agency also independently organised a traffic count on the programme roads.

The institutional reforms have led to fundamental improvements in the allocation of funds for road maintenance. The funds available from the Road Maintenance Levy Fund are increasing continuously, and the funds to which KeRRA is entitled are distributed internally to different districts according to established criteria. Nevertheless, available budgets are still not sufficient to include all classified roads in the programme districts' annual maintenance plans. In light of limited funds, KeRRA has to prioritise. It focuses its maintenance efforts on the road sections that most urgently require maintenance.

Due to the still-incomplete institutional restructuring, it proved difficult to acquire information about the programme roads' maintenance status. An on-site inspection of the programme roads in late 2013 took note of various culverts and drains clogged with garbage or soil this led to the conclusion of little or no routine maintenance having been done on the roads. A further inspection in late 2014 gave a rather more positive impression. According to the executing agency, routine maintenance measures are being performed. Considering the general scarcity of funds, the programme roads' high construction standards - and out of experience with comparable projects in Kenya, it can be assumed that no recurrent maintenance has been carried out thus far. At the same time, it is plausible to assume that funds are being made available for the maintenance of critical road segments, which would ensure their long-term possibility. On a positive note, we observe that KeRRA is adequately aware of the road maintenance problems. This is also borne out by lively discussions at national level with regard to the development of more cost-effective road construction and maintenance procedures.

From today's perspective, the incomplete process of reforming the roads sector represents a significant sustainability risk. Although the responsibility for the maintenance and development of the rural roads network was only transferred to KeRRA in 2009, the 2010 constitution stipulates that the responsibility for construction and maintenance of rural roads will be transferred from KeRRA to the individual counties. This reform was planned for 2015, but has not yet been implemented, despite the counties' lawsuit against KeRRA at the Supreme Court of Kenya. It is expected that this question of responsibility will be resolved in the near future. More precise information on the counties' future maintenance responsibilities and the future availability of maintenance funds from the national budget, was not available at the time of the ex post evaluation. In the interest of ensuring sustainability, it would be desirable to resolve institutional uncertainties as soon as possible.

Sustainability rating: 3 (both phases)

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).