Ex post evaluation – Ghana

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Sector: Road transport (CRS code 21020)
Project: Rehabilitation of the Sogakope-Akatsi road (Federal Ministry of Economic Cooperation and Development (BMZ) no. 2001 65 381)*
Project Executing Agency: Ghana Highway Authority

Ex post evaluation report: 2014

		Project A (Planned)	Project A (Actual)
Investment costs (total)	EUR million	13.28	21.45
Counterpart contribution	EUR million	0.50	0.96
Funding	EUR million	12.78	20.49
of which BMZ budget funds	EUR million	12.78	20.49

*) Random sample 2014

Description: The project consisted of the rehabilitation of the approx. 29 kilometre section of the Ghanaian coastal road (from Accra to the border with Togo) between the towns of Sogakope and Akatsi, which was in urgent need of repair. The project was closely linked to the western connecting Tema-Sogakope leg that was previously financed by FC funds and the eastern section to the border (56km long), the rehabilitation of which was funded by a loan from the African Development Bank AfDB) Ghana.

Objectives: The project's goal was to achieve the efficient and safe handling of traffic on the project road. This was to make a contribution towards reducing the overall economic transport costs in Ghana (overall objective).

Target group: The immediate target group was vehicle operators and the local population who travel on foot or by non-motorised vehicle on the reinforced roadside lanes which run along the highway in both directions. In addition, the project should benefit all those in need of direct or indirect transport services operating on the project road.

Overall rating: 2

Rationale: The project is convincing due to the great significance of the road, the good use that is made of it and the resulting plausible developmental impact. High cost increases led to lower profitability than expected. Financing the maintenance entails risks but, on the whole, the overall developmental assessment can still be rated as good (level 2).

Highlights: The highway is crucially important for transport within Ghana as well as West African transport, and for the Economic Community of West African States (ECOWAS). It is an irreplaceable section of the coastal road that runs along the Atlantic Coast, between two cities of over a million inhabitants, Lagos in Nigeria and Abidjan in the Ivory Coast. The project was the right project at the right time.

- Project
- Average rating for sector (from 2007)
- Average rating for region (from 2007)
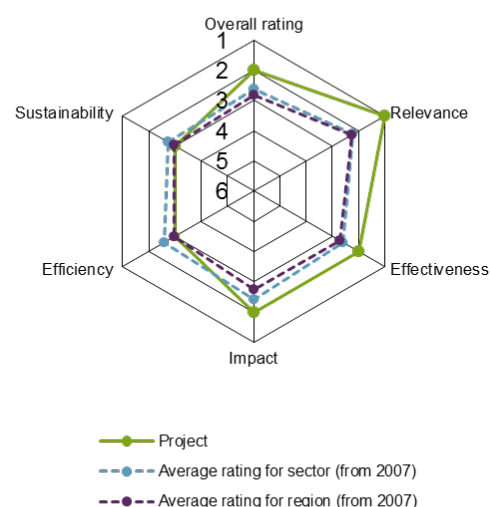
Rating according to DAC criteria

Overall rating: 2

The project was the right project at the right time; all indicators are met (traffic volume, costs and time saving). We therefore assign a good rating for the effectiveness (level 2). The highway is extremely important for Eastern Ghana and for connecting the Economic Community of West African States (ECOWAS). There was no alternative to the project (sub-rating relevance level 1) and the results show that the right decision was made (sub-rating overarching developmental impact, level 2). Due to a 60% increase in costs, the efficiency was far from optimal. Sustainability is only rated as satisfactory (level 3), because the periodical maintenance which will become necessary in five to ten years' time cannot be considered to have been secured in light of the financing situation of the project-executing agency Ghana Highway Authority (GHA). Despite the paramount importance of the sustainability aspect, we believe an overall rating of 2 is justified, given the major significance of the project and the good results.

Relevance

The highway is crucially important for transport within Ghana as well as West African transport, and for the ECOWAS region. It is an irreplaceable section of the coastal road that runs along the Atlantic, between Lagos in Nigeria and Abidjan in the Ivory Coast (both cities with over a million inhabitants). As part of the national road network, it also forms the most important connection between the cities and towns of the eastern coastal regions and the Ghanaian capital Accra, and is the key transport route for cement to be transported to Accra from a cement factory located near the border.

When the project began, the highway was barely passable. There is no railway in Ghana in this direction; the distances are too short for inner-Ghanaian maritime transport and there is a lack of ports in the east. Inter-state maritime trade and transport in the ECOWAS region is not of substantial importance either, especially as the transport times (incl. harbour and reloading times) would be much too long compared with heavy goods vehicle transport on the road. The project is therefore also of major importance for the economic development of Ghana's eastern coastal region.

The project was in keeping with the national sector strategy supported by the donor community and by German FC (formulated in 2005), that provides for improving the transport links and therefore addressing the most important main links first. The project blends in well with the activities of other donors. An AfDB project, comprising the rehabilitation of the section of road that continues on from the FC project up to the Togo border, is also completed apart from the last 500m before the border. The World Bank funded sections of the coastal road to the west of Accra, so that the entire road network will be in a very good condition in a few years' time. All in all, the project's concept met the expectations formulated in the project appraisal report (PAR) in all aspects. The project formed part of the former transport priority area (meanwhile discontinued) in cooperation with Ghana. It is highly relevant and is therefore given a rating of 1.

Relevance rating: 1

Effectiveness

All measures were implemented as planned, the quality was assessed as good in the final inspection in 2009 and the highway was still in very good condition at the ex post evaluation in 2014. All road signs and safety installations are in place, and the traffic light system installed at a crossroads and a weighing station are operational and functioning. The highway layout was appropriate.

The selected extension standard, a two-lane highway with wide roadside lanes for non-motorised traffic meets the requirements of the target group. The transport companies and drivers benefit from a quick and easy connection. The local non-motorised traffic can move safely on the roadside lanes. Safety installations prevent excessive speeds in the towns/villages.

All indicators are reached or exceeded.

Indicator	Status Project Appraisal	Ex post evaluation
Project objective: Project-related reduction in vehicle operating costs, recorded via the condition of the road two years after its opening.	-/-	Project objective: Project-related reduction in vehicle operating costs, recorded via the condition of the road two years after its opening.
Not explicitly stated in the PA, but useful addition: Annual growth in transport on the project highway.	3.0 % p.a. expected or 2,019 vehicles per day in 2014 (1,684 cars, 72 HGV>10t, 23 buses, 74 minibuses)	7.55 % p.a. or 4,433 vehicles per day in 2014 (1,884 cars, 311 HGV>10t, 94 buses, 1,875 minibuses).

Taking into account current traffic volumes, the cost savings amount to EUR 3.63m p.a. The travel time has also been reduced considerably on the stretch of road, which leads to time savings of 10.54 million hours p.a. on current traffic volumes. Evaluating these savings in terms of opportunity costs leads to further savings of EUR 4.02 million per annum. As we did not have a current traffic count at hand from the GHA, we commissioned a traffic count as preparation for this evaluation, which shows considerable increases in all categories. All in all, transport has more than doubled between the time of the project appraisal in 2001 and 2014. Minibuses showed particularly high growth rates, with hardly any traffic in 2001 and heavy goods vehicles (generally articulated lorries with a total weight of 60t), increasing by 1,875 % and 310 % respectively. A comparison of transported people and tonnage also show very significant growth, with increases of 1,450 % and 250 % respectively.

As all indicators are met, the quality is good and traffic volume has increased sharply, we rate the effectiveness of the project with a 2.

Effectiveness rating: 2

Efficiency

The considerable cost increases of 60.3 % (i.e. from EUR 13.28 million to EUR 20.49 million) and time-lag (length of time between expected and until actual completion) of around five years dominate the efficiency assessment. The delays were largely down to the slow implementation on the Ghanaian side and non-compliance with sectoral implementation agreements in the first few years after appraising the project. Insisting on compliance with the implementation agreements is one of the few opportunities FC has to exert sectoral influence and poses the risk of delays. We assess the compliance with the implementation agreements as positive. Nonetheless, the impact on the project costs have negative implications for the efficiency. There were manifold reasons for the cost increases. The more expensive design, with the aforementioned roadside lanes that was not proposed until after the project appraisal, made sense and was correct. An extremely heavy rainy season during construction led to massive damages to the structure and therefore to considerable additional costs. These are general, unforeseeable project risks that could not have been avoided. Much of the cost increases were down to the delayed start in a period during which there was a very sharp increase in all construction costs in Ghana. When the main construction contract was finally assigned, the price was comparatively reasonable and the Chinese construction company completed the work within the timeframe, to a good quality and efficiently.

At EUR 0.73 million per completed road, the costs were in line with similar projects (World Bank, AfDB) in Ghana and the surrounding region. The AfDB and other donors in the transport sector experienced the exact same problems with regards to cost increases and delays.

Despite the sharp rise in costs as well as maintenance costs that were several times higher than planned, the cost-benefit analysis shows an internal rate of return of between 10.1 % and 13.3 %, depending on the scenario. This is higher than the indicator value of 10 % but lower than the values expected in the pro-

ject appraisal. The effects of the cost increase were thus offset by the savings effects (only the vehicle operating costs and not the time savings were taken into account) from a considerably higher volume of traffic. In summary, we assign the efficiency a rating of only 3 due to the cost increases.

Efficiency rating: 3

Impact

We see the overall developmental impact as good. The economic rate of return reached is high, traffic has increased sharply, the nationally and supraregionally important section of road was converted from an obstacle that was difficult to traverse to a fast, easily navigable road that benefits transport users and residents alike. The sharp increase in traffic provides more clientele for the shops, petrol stations, hotels and restaurants located along the road, while the good road corridor facilitates increased settlement of companies dependent on transport infrastructure. In this respect, an indirect economic upturn can be assumed, which can also benefit the poorer social strata. Mobility has clearly increased, vehicle operating costs have fallen and travel times are shorter. The extremely strong increase in passenger transport also shows a considerably higher exchange with the capital city Accra. As most of the heavy goods traffic is accounted for by cement transport (see above) and cement is an essential commodity of sustainable economic development, the road corridor which is now in good condition, contributed significantly to the secure provision of cement in Ghana and above all Accra, and to the economic development as a whole. The extent to which the cross-border, regional traffic has increased in contrast to inner-Ghanaian traffic cannot be substantiated in figures.

The effects of the project on vehicle operating costs and transport times are positive overall for transport costs, even though no data supporting this is available. Savings effects that were plausible per se may have been offset by other factors not related to the project, such as petrol price increases.

While no data is available on higher attendance rates at schools and hospitals, it is plausible that the improved transport connections to Accra have eased access to all facilities typical of a city.

The traffic-related specific exhaust emissions have fallen, as vehicles driven at a continuous speed of 80-100 km/h use significantly less fuel and therefore issue less exhaust than the constant start-up and braking caused by potholes. However, the higher volume of traffic has driven up absolute emissions. Noise pollution produced by continuously flowing traffic is likely to be less now compared with when the project started. We assess the overarching developmental impact with level 2.

Impact rating: 2

Sustainability

Heavy axle loads exponentially damage the roads. At 60t, the permissible maximum weight of heavy goods vehicles in Ghana and the ECOWAS countries is already extremely high (EU: 40t). Axle load controls are therefore extremely important for the sustainability of a road. Ghana recently introduced stricter control activities throughout the country. The consistent decommissioning of overloaded heavy goods vehicles has reduced the ratio of overloaded vehicles from 17.8 % to 4.9 % within one year. A fixed weighing station is located at the start of the project road, coming from the direction of Togo. A visit showed the station was operational; three articulated lorries were laid up there. This is a good prerequisite for a road's long service life. There was no evidence of wheel ruts anywhere, not even on older roads financed previously by FC funds.

Proper maintenance and service remains decisive for the sustainability. Our observation shows that the so-called routine maintenance for relatively new asphalt roads, comprising mainly keeping drainage clear and cutting grass and bushes, appears to be conducted properly and regularly on the GHA roads. The kilometre and cost information stated in the GHA annual report show that this happens sufficiently throughout the country.

When it comes to the so-called periodic maintenance, repairs, eliminating potholes and re-asphalting, the picture is completely different. Although we find the GHA's approaches to planning are appropriate, only a fraction of the planned work is approved and a budget provided. In 2013, only around 10 % of the planned

scope could be realised. While the figures look better for 2014, they are still not enough within the meaning of sustainable road maintenance.

The GHA is financed mainly from funds allocated from the Road Fund and through direct budget allocations. Hopes were raised in the course of the sector reform that solid funding from the Road Fund could reduce the road sector's dependency on the budget. Almost 90 % of the Road Fund itself is funded from a fuel levy that is meanwhile only 1.5 cents per litre and has not been charged since 2005. A significant increase is not expected either in the coming years. Periodic road maintenance is therefore likely to face considerable underfunding in the years ahead. This leads to a deteriorating road network in the medium term. The condition of the project road will undoubtedly remain good for a number of years yet. One can only speculate as to whether upcoming necessary maintenance work will be carried out, if the sector remains underfunded.

All in all, we only rate the sustainability of the project with level 3, despite the good results of the weighing programme and good routine maintenance. This is mainly on account of the underfunding for the maintenance of the Ghanaian road network.

Sustainability rating: 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:

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).