

**Burkina Faso: Rehabilitation of Ouagadougou-Namassa Road, Repair of the
Namassa-Bourzanga Dirt Road, Ouagadougou-Boromo Road**

Ex-post evaluation

OECD sector	21020 / Roads and road traffic	
BMZ project ID	1) Rehabilitation of the Ougadougou-Namassa Road, BMZ No. 1991 65 358 2) Repair of the Namassa-Bourzanga Dirt Road, BMZ No. 1994 66 285 3) Ougadougou-Boromo Road BMZ No. 1995 66 217	
Project-executing agency	1-3) Ministère des Infrastructures, de l'Habitat et de l'Urbanisme (MIHU) – Direction Générale des Routes (DGR)	
Consultant	1-2) Gauff Ingenieure 3) Gelsenconsult/Gitec-Consult	
Year of ex-post evaluation	2005	
	Project appraisal (planned)	Ex-post evaluation (actual)
Start of implementation	1) End of 1992 2) End of 1995 3) 2nd quarter 1996	1) 10/1995 2) 01/1998 3) 2nd quarter 1997
Period of implementation	1) 24 months 2) 27 months	1) 55 months 2) 56 months 3) 40 months
Opening of the roads	1) End of 1994 2) End of 1997 3) Mid-1998	1) 3rd quarter 2000 2) August 2002 3) 4th quarter 2000
Total cost	1) EUR 3.7 million 2) EUR 2.6 million 3) EUR 13.9 million	1) 3,0 Mio EUR 2) 1,9 Mio EUR 3) 17,7 Mio EUR
Counterpart contribution	1) EUR 0.0 million 2) EUR 0.0 Mio 3) EUR 1.8 million	1) EUR 0.0 million 2) EUR 0.0 million 3) EUR 5.5 million
Financing, of which Financial Cooperation (FC) funds	1) EUR 3.7 million 2) EUR 2.6 million 3) EUR 12.1 million	1) EUR 3.0 million * 2) EUR 1.9 million ** 3) EUR 12.2 million***
Other institutions/donors involved	1 -3) none	1-3) none
Performance rating: 1 - 3	3	
• Significance/Relevance: 1-3	3	
• Effectiveness: 1 - 3	3	
• Efficiency: 1 u. 2 3	3 2	

* EUR 151,000 were used to finance measures under the Ouagadougou-Boromo road project. After disbursement the remaining funds will amount to EUR 572,000 and will be used for the project "RN Koupela to the border with Togo (BMZ No. 1999 65 393)".

* * The remaining funds amount to EUR 726,000 and will be used in the same manner as the funds described under 1).

***Including EUR 151,000 remaining from project 1). After disbursement the remaining funds will amount to EUR 4,000. The funds will be used in the same manner as described under 1).

Brief Description, Overall Objective and Programme Objectives with Indicators

(1) Ouagadougou – Namassa Road

The project comprised the rehabilitation of the 74 km section of the national road RN 22 from Ouagadougou to Namassa and Yilou, which is a dirt road. The road connects the capital Ouagadougou with the north of the country, the densely populated Mossi plateau, and the cities of Kongoussi and Djibo.

The project objective is the macro-economically efficient transport on the section between Ouagadougou and Yilou.

Indicators for the achievement of the project objectives are the increase in traffic and a reduction in vehicle operating costs.

The overall objective is to improve traffic conditions in Burkina Faso. An indicator to measure achievement of the overall objective was not defined.

2) Namassa-Bourzanga Road

The project comprised the rehabilitation of a 76 km section of the RN 22 dirt road, which follows north of the section of project road 1 and goes via Kongoussi to Bourzanga.

The project objective was to improve the macro-economic efficiency of transport on this road section.

The indicator for the achievement of the project objective is the traffic volume and transport costs.

The overall objective of the project is to contribute to improving the traffic conditions in Burkina Faso. An indicator to measure achievement of the overall objective was not defined.

3) Ouagadougou-Boromo Road

The project comprises the rehabilitation (including widening of the lanes) of a 173 km section of the asphalted national road RN 1 between Ouagadougou and Boromo. The RN 1 national road connects the capital Ouagadougou with Bobo Dioulasso, the second largest city in the south-west of the country.

The project objective was to manage the traffic volume on this road section at low costs.

The indicators for the achievement of the project objective are the traffic volume and transport costs.

The overall objective of the project was to contribute to maintaining/improving the macro-economically efficiency of transport in the country.

The indicator for the achievement of the overall objective was to achieve an adequate macro-economic rate of return of the project (12%).

From today's point of view the target system of projects 1 to 3 is not adequate since the project objectives should focus on the use of the improved road transport infrastructure. A suitable indicator to measure the achievement of the objectives would be the increase in the traffic volume. As regards the overall objective, from today's point of view the focus should be on making a contribution to growth as a result of the improved transport situation. Besides the macro-economic rate of return, which does, however, establish the growth effects only indirectly through savings in vehicle operating costs, possible target indicators might be indicators relating to the local economic development, e.g. sales development on rural markets or an expansion of agricultural production.

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

1) Ouagadougou-Namassa Road

In addition to the originally planned 58 km section (Ouagadougou-Namassa) it was possible, due to the more favourable results of the tendering procedure (which were caused by the FCFA devaluation), to also rehabilitate the 16 km section from Namassa to Yilou and upgrade it to a modern standard dirt road. Thus, altogether 74 km of the RN 22 were rehabilitated on the existing alignment. The construction works were mainly implemented as planned. A first 15 km section near the city with comparatively heavy traffic was upgraded to have a 7 m pavement width and shoulders of 2 x 1.5 m width. In the further course the entire road was expanded to a 7 m pavement width. In order to improve road safety signposting was improved in particular in the sections of village through roads. To provide protection during rainy seasons eight rain barriers were installed. Altogether 5 lots were put out to tender at the national level and one lot was tendered internationally. All road works were carried out by Burkinabe enterprises. The considerable delays that occurred at the beginning and during construction works were partly due to the lengthy discussions with the Burkinabe side about the standard to be applied in the road expansion and the protracted procedure to obtain approval to the construction contracts by the central procurement commission. Technical problems and delays occurred in the implementation of the project measures, which were caused by the low qualification of the local building contractors. As a result the works were only concluded in the third quarter of the year 2000 (planned: end of 1994). The deficiencies in the execution of construction works were put right in an adequate manner. Substantial cost savings were achieved because the contracts awarded to local construction firms became much cheaper due to the devaluation of the FCFA. On the other hand the costs of consulting services were clearly higher than planned at the time of project appraisal due to the prolonged construction time.

2) Repair of the dirt road from Namassa to Bourzanga

The next section of the RN 22 (project road from Namassa to Bourzanga) was rehabilitated immediately following the Ouagadougou-Namassa project. As the section Namassa-Yilou had already been rehabilitated before (see above) the length of the project section was shorter than had been planned originally. It comprised the section from Yilou to Bourzanga. In deviation from the original project planning, which had envisaged only selected rehabilitation measures, a laterite surface was placed on the entire section of the road. According to the requirements of the Projet d' Ajustement Sectoriel des Transport (PASEC-T) only minimum standards were adhered to during the expansion of the road. The road was constructed with a width of 7.0 metres until the provincial capital of Kongoussi and then with a width of 6.0 metres until Bourzanga. As planned, further measures covered the improvement of road drainage through the lifting of those parts that were situated too deep, the rehabilitation of existing reinforced concrete culverts or the construction of additional culverts as well as the installation of signposts in the villages to improve road safety and the installation of 6 rain barriers. The construction works started considerably later than had been planned, which was due to the fact that the project-executing agency signed the consulting agreement only with a delay of two years. Technically required rectifications in the tendering documents and protracted and lengthy coordination processes led to considerable delays in the conclusion of construction contracts. Construction works under the lot awarded to local construction firms were carried out with many delays, especially due to organisational problems on the part of the local firms. However, no major deficiencies occurred. The result of the rehabilitation measures is a dirt road constructed according to minimum standards. The total cost of the project was clearly lower than originally planned due to the fact that the length of the section to be rehabilitated had been reduced.

3) Ouagadougou – Boromo Road

The bituminous RN 1 road was rehabilitated on a 173 km section from Ouagadougou to Boromo (Ouagadougou-Boromo project road) on the existing alignment and elevation of the road. The 9.0 m crown width of the road was maintained, however, the pavement width was increased by 1.0 metre to 7.0 metres. As a result the remaining shoulders only have a width of 1.0 metre

each. The worn-out road surface was re-used according to a special method together with the existing sub-base layer, on which a new upper sub-base layer was placed in order to strengthen the road. The existing drainage structures are being used as before. In order to improve the drainage, however, an additional six culverts were constructed, the existing trenches were cleaned and in some cases newly built. On the first 56 km section until Sakoincé, in deviation from the original planning and upon intervention of the project-executing agency (which was prepared to finance these changes from its own funds), the bituminous pavement was not applied as a three-layer macadam surface but as a higher-quality asphalt surface, which we consider as acceptable in view of the traffic load on this section. On the remaining section up to Boromo the road was built with a two-layer macadam surface. As planned, the construction works were put to international tender. Due to lengthy administrative approval procedures the construction contract only took effect with considerable delay. Substantial construction defects occurred on the first section, the works for which had been sub-contracted to a local construction firm. However, all defects were rectified in a satisfactory manner by the contractor. As a further protection for this section, which is strongly used by heavy-goods vehicle traffic, we consented to the application of an additional one-layer macadam surface. The financing was provided from residual funds. In the context of these works the construction firm did not fulfil its contractual obligations and discontinued the works before they were finished. Though the project-executing agency was requested to assert its claims to completion against the construction firm it did not do so. For this reason we did finally not consent to the financing of the remaining road section. In consequence no additional macadam surface was placed on this 13 km section. In order to ensure road safety the standard measures were implemented with regard to road markings and signposts. Altogether, as a result of the project measures, this section of the country's most important traffic route has been turned into an appropriate road connection. Due to the constructional changes (asphalt concrete pavement) considerable additional costs occurred, which were financed mainly through an increase in the counterpart contribution.

Key Results of the Impact Analysis and Performance Rating

Impact analysis for projects 1 and 2:

The national road RN 22 Ouagadougou-Namassa-Kongoussi-Bourzanga connects the provinces Bam and Soum in the North of Burkina Faso with the capital as well as other regions and countries situated in the south of Burkina Faso. Both project roads clearly serve the purpose of opening up this region, which was hitherto difficult to access. A sign of this is the traffic volume for all categories of vehicles on the project roads, which increased more strongly than had been expected. This also allows to better exploit the agricultural potential of the area, which is limited due to the existing natural conditions. An indication of the improved situation is, among others, the increase in trade and commerce of all kinds in the provincial capital of Kongoussi. Moreover, the supply of the region with imported goods of daily use at competitive prices was improved.

Achievement of the project objective and overall objective of project 1 (Ouagadougou-Namassa):

Overall, measured by the modified target system, the project objective can be regarded as achieved since the traffic volume on the second part section has developed very dynamically (164 motor vehicles per day at the final evaluation compared with 89 vehicles per day at the time of the project appraisal). As regards the achievement of the overall objective, one has to state that though the economic rate of return of 9% and 4% (risk variant), respectively, is below the level defined at project appraisal (12%) it is still acceptable for a least developed country such as Burkina Faso. The target group of the project is the population living along the road in the catchment area, which can mostly be considered as poor. The population benefited from the project because the exchange with the capital, which is the most important point of reference in the region, has been facilitated. The most obvious indication of this is the fact that after the rehabilitation of the Kongoussi-Ouagadougou section three daily bus connections have been set up (against one bus connection prior to the rehabilitation) in addition to the minibuses and

passenger vehicles that use the road. Agricultural products can now be transported faster and with less difficulties and, according to statements by the population in the area, the supply with goods of daily use, but also with equipment, cement etc. has improved markedly.

Achievement of the project objective and overall objective of project 2 (Namassa-Bourzanga):

As regards the dirt road from Namassa to Bourzanga, measured by the indicator of traffic development, the project objective was more than fulfilled (planned at project appraisal: 62 and 37 vehicles per day; actual at final evaluation: 134 and 84 vehicles per day). Still, these figures show that the savings in transport costs were not sufficient to achieve a positive macro-economic rate of return. The main purpose of the road was to open up the project region. Positive impacts are apparent especially in the area of production of higher quality agricultural products and their marketing. Overall, we consider the achievement of the overall objective as still sufficient, though with some reservations.

Impact analysis for project 2 (Ouagadougou-Boromo):

The section Ouagadougou-Sakoïncé-Boromo of the national road RN 1 is a main connection with the southwest of the country, especially the second largest town of Bobo Dioulasso and, before the crisis in Côte d'Ivoire, to the seaport of Abidjan. Today the road is also used by traffic from Mali, which does not have alternative road connections with the coast, to the ports in Ghana and Togo. Even though there is currently no access to the seaport of Abidjan, the national road RN 1 is still the most frequented road of the country. The region through which the road passes is the centre of cotton production, the country's most important export product. Most of the country's economic activities (industry, construction, transport, energy and commerce/banking/insurance) are located in the Ouagadougou and Bobo Dioulasso areas and their surroundings. As the country's main transport connection the RN 1 constitutes an important route for several provinces in the centre and the west of Burkina Faso.

In particular the population living north of the road in the region around the provincial capital of Koudougou, which is engaged in productive and diversified agricultural activities, is estimated to benefit directly from the road in terms of better marketing opportunities due to improved transport connections, which in turn creates additional incentives to increase production. Due to the adverse natural conditions in the area south of the road the positive impact on the agricultural development there is limited to relatively few areas located in the immediate vicinity of the road. As regards the region north of the road it has to be noted that Koudougou is connected to the project road by a bituminous road to Sakoïncé, from where additional supplies (in particular agricultural produce) are transported to the capital. Official figures on the development of poverty in the project region show a slight improvement in the period from 1998 to 2003. Thus, it seems to be plausible that the project road at least made an indirect contribution to this development.

Achievement of the project objective and overall objective of project 3 (Ouagadougou-Boromo road):

Measured by the indicator of traffic volume, the project objective was achieved on the second and third road sections, however, not on the first part section. In consequence, the totality of project objectives was achieved only partially. Still, measured by the indicator of macro-economic rate of return, the overall objective was even exceeded (target: 12 %; actual: 36%).

The funds available for the ongoing maintenance of the primary road network are relatively high at 1,420 EUR/km and are sufficient to finance comprehensive current maintenance measures. The situation is different when it comes to periodic maintenance. In this area, no funds are provided by Burkina Faso but all measures have to be financed only from donor funds, which are not sufficient to finance the required periodic maintenance for the entire road network. An improvement of the current unsatisfactory situation in the area of periodic maintenance depends on two factors: One prerequisite is the establishment of a Road Fund in the near future in the context of PST-2 and its endowment with sufficient funds. On the other hand the donors provide

financing for the periodic maintenance of the primary road network under PST-2. Since all project roads belong to the primary road network of the country and their overall maintenance condition is satisfactory, and since the Ouagadougou-Boromo main road is of strategic importance for the country we consider the sustainability risks related to the adequate periodic maintenance of the project roads as acceptable.

We rate the developmental effectiveness of the project as follows:

- The impact hypothesis that an improvement of the transport situation might help to open up economic potentials in the project areas and in this way might eliminate a major bottleneck that hampers the economic and social development can be regarded as plausible given the potential that exists in the project area for the development of industry and trade (relevance). As far as the impacts that actually occurred are concerned it has become apparent that due to the improved transport situation and better access to local sales markets the agricultural production in part of the project area has increased. The improved transport situation also had positive impacts on the development of local trade and commerce. These impacts are only partially reflected in the indicator chosen for the overall objective (macro-economic rate of return), which only aims at reducing vehicle operating costs. Taking these positive impacts (opening up of the region) into consideration we regard the criteria of relevance/significance as sufficiently fulfilled for all three projects **(sub-rating 3)**.
- The achievement of the project objectives is satisfactory since the traffic figures forecast at project appraisal have been reached under all projects. The rehabilitated roads are sufficiently used. There are, however, risks in terms of sustainability. Though the project roads are overall in an acceptable condition and the ongoing maintenance works have so far been implemented as required periodic maintenance causes a problem. In this area the own funds of DGR are not sufficient to finance the periodic maintenance of the primary road network. Still, funds have up to now been provided under external donor programmes and as a result the periodic maintenance was sufficient overall. Important donors (World Bank, EU) continue to be engaged on a significant scale in the road sector in Burkina Faso, and this support benefits in particular the periodic maintenance of the roads of the primary network, to which the project roads belong. Moreover, the establishment of a "Road Fund" planned under PST-2 offers the perspective of rising own funds available for periodic maintenance. For this reason we judge the existing sustainability risks as still acceptable. The project's effectiveness is still sufficient **(sub-rating 3)**.
- As far as the production efficiency is concerned we consider the specific investments costs of all projects as adequate, even though in retrospect a higher extension standard would have been justified for some sections. As regards the use of the capacities established (project objective) the macro-economic rate of return of the Ouagadougou-Namassa project (8% and 4% under the risk variant) remained below the target set at the time of project appraisal, but still shows a level that is acceptable for a country like Burkina Faso **(sub-rating 3)**. The macro-economic rate of return for the Ouagadougou-Boromo project (36%) is very high **(sub-rating 2)**. Under the Namassa-Bourzange project the savings in vehicle operating costs were finally not high enough to compensate for the investment costs. Still, substantial additional impacts (opening up of the region) have to be mentioned here, and in consequence we consider the efficiency as still acceptable **(sub-rating 3)**.

Overall, we judge the project's developmental effectiveness to be still satisfactory **(rating 3)**.

As had been envisaged at project appraisal all three projects did not have any gender-specific impacts. The aspect of poverty relevance was not looked at when conducting the project appraisal for the "Ouagadougou-Namassa-Kongoussi-Bourzanga" roads. Both projects tend to have positive effects on agricultural production and may contribute to reducing poverty. As mentioned on the occasion of the project appraisal the Ouagadougou-Boromo road does not

make a direct contribution to reducing poverty. The environmental impacts of the construction measures were negligible because no additional land was consumed and places where building materials had been extracted were again levelled afterwards or were situated on waste land. The projects did not pursue the goal of improving governance.

General Conclusions

The concept development and implementation of sector reforms in the context of a larger transport sector programme, in which several donors participate by providing finance for investments and consultancy, thus, jointly exercising a larger influence, has proven to be effective also in the road sector in Burkina Faso.

The correct establishment and forecast of traffic data is of specific importance in the context of preparation and appraisal of road projects since these factors strongly influence the result of the profitability analysis. In the present case it has become apparent that traffic data can be very volatile and the frequently assumed close relation between traffic and demographic development/general growth development does not always produce adequate forecasts. The most important factors should be taken into account in future road sector projects in the form of scenarios when making forecasts.

If a road transport project is not primarily justified by a reduction in vehicle operating costs but by additional effects in terms of opening up the region concerned (e.g. access to sales/purchase markets and social services) a baseline survey should be conducted in the context of the feasibility study, which will help at the time of the ex-post evaluation to assess whether the intended impacts have indeed been achieved.

Legend

Developmentally successful: Ratings 1 to 3	
Rating 1	Very high or high degree of developmental effectiveness
Rating 2	Satisfactory 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 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.