

Laos – National Road No. 6 Rehabilitation / Phases I + II

Ex post evaluation report

OECD sector	21020 - Road transport	
BMZ project ID	1994 65 543 (Investment Project Phase I) 1994 70 170 (Complementary Measure) 1998 65 932 (Supplementary Project Phase I) 2004 65 815 (Investment Project Phase II)	
Project executing agency	Ministry of Public Works and Transport (MPWT)	
Consultant	GITEC, Düsseldorf	
Year of ex post evaluation report	2010 (Phase II in 2010 sample)	
	Project appraisal (planned)	Ex post evaluation report (actual)
Start of implementation	Phase I: 12/94 Phase II: 2/05	Phase I: 12/94 Phase II: 12/05
Period of implementation	Phase I: 5 years Phase II: 3 years	Phase I: 7 years Phase II: 3 ¼ years
Investment cost	Phase I: EUR 8.0 million Phase II: EUR 5.2 million	Phase I: EUR 18.2 million Phase II: EUR 5.3 million
Counterpart contribution	Phase I: EUR 0.3 million Phase II: EUR 1.2 million	Phase I: EUR 4.7 million Phase II: EUR 1.3 million
Financing, of which Financial Cooperation (FC) funds	Phase I: EUR 7.7 million Phase II: EUR 4.0 million	Phase I: EUR 13.5 million Phase II: EUR 4.0 million
Other institutions / donors involved		
Performance rating	2	
• Relevance	2	
• Effectiveness	2	
• Efficiency	1 (Phase II) / 2 (Phase I)	
• Overarching developmental impact	1	
• Sustainability	3	

Brief description, overall objective and project objectives with indicators

The projects were intended to contribute to the economic development of the region and to help enhance trans-boundary links (overall objective); indicators were not specified. The common project objective was to ensure cost-effective, sustainable, year-round access to the remote and structurally disadvantaged province of Houaphan via National Road 6 as the region's main transport route, the target group being the rural population living along the national road. Success was to be measured against an increase in traffic volume to more than 160 motor vehicles per day and a minimum average travel speed of at least 40 km/h out of town.

The measures of Phase I (including the Supplementary Project) comprised:

- Sections A (92.2 km) and C (84.5 km): section-by-section road repairs and renewal with a new bituminous macadam surface.
- Section B (91.4 km): Upgrade from a dirt road to a bitumen road.
- Engineering services for the development and implementation of a concept for labour-intensive and mechanical routine maintenance.

The measures of Phase II of the project comprised:

- Section A: Roadway reinforcement and renewal of bitumen layer.
- Section C: Roadway reinforcement and widening as well as renewal of the bitumen layer on a subsection of 25 km.
- Additional improvements to the transport infrastructure of villages north of Xamneua.

The two projects of Phase I were implemented in the period from December 1994 to March 2000, the Phase II project from 2005 to 2008. The total length of the road is 268 km. Including the extension, the complementary measure was implemented from 1996 to December 2003. Of the total cost of EUR 23.5 million, EUR 17.5 million was financed in the form of a non-repayable FC financial contribution.

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

The basic concept, the rehabilitation of the National Road on a stretch of 268 km as the main artery for Houaphan Province and parts of neighbouring Xieng Khouang Province in the remote north-east of the country, was maintained. The following adjustments were made in the course of implementation:

- The measures of Phase I (projects 1994 and 1998), besides upgrading section B (91.4 km), were initially intended to include only selective improvements on sections A and C. As traffic volume had risen more strongly – and due to flood damage from the 1996 rainy season, it was decided to fully rehabilitate sections A and C as well.
- Cost-effective tender results and a favourable development in the exchange rate generated savings of EUR 1.1 million in Phase II. These savings were used for the rehabilitation of the access road to a nearby district centre (Houa Mong), for additional improvements to the transport infrastructure of a further three district centres north of Sam Neua, the provincial capital of Houaphan, for culverts along the access road (Ban Phai - Ban Yong) and for improvements to the pavement of an important bus parking lot on the National Road (Nam Neun).

Key results of the impact analysis and performance rating

From the perspective of the road users, the project has reduced the cost of motor vehicle operation. Depending on the vehicle type and the degree of road improvement (rehabilitation, upgrade of gravel road to bitumen road), considerable cost savings and reduced travel times are the result. Moreover, cargo rates and some passenger fares have dropped, and bus links have improved.

Since 2002, Laos has had a road fund designed to cover the cost of maintenance which is financed primarily from a fuel levy. Thanks to the dynamic development of the road maintenance fund, its revenues will be sufficient to meet the maintenance costs

across the country up to the year 2012. This also ensures a sound financial prospect for maintaining the project roads. From the perspective of the executing agency, regular maintenance is an imperative especially with a view to cost effectiveness, because a neglect of maintenance results in three to four times higher expenditure in the long term (ultimately for rehabilitation and/or renewal). Maintenance agreements are in place with local construction firms for most of the project road, but nevertheless the route sections are in an average state of maintenance at best, which will lead to increased repair costs in the medium term.

The improvement to the transport link between Houaphan Province and the main road network was a significant step for regional economic development, evidenced by the numerous new buildings and active construction sites in the provincial capitals of Sam Neua and Phonsavan, among other developments. The improved transport link to the Vietnamese road network is of great economic importance for Houaphan Province as well as for the landlocked country of Laos in general. In future, this importance will even increase with the further expansion of the border crossing at Nameo, which is being planned by the ADB, to the central Vietnamese north-south artery in Thanh Hoa.

The internal rate of return of the project was calculated in Phase II on the basis of a cost-benefit analysis. The benefit only referred to operating cost savings for motor vehicles with at least four wheels, that is, not for motorcycles. Time savings of passengers are reported to have been included in the operating cost rates to a very limited extent only, as was the case in the project appraisal report. The calculated internal rate of return of 21 % p.a. is significantly higher than the initial forecast (17 %).

The socio-economic situation in Xieng Khouang and Houaphan has improved noticeably over the past years. This applies in particular to access to and attendance at schools, healthcare facilities and the supply of electricity. Poverty reduction was neither a primary nor a secondary objective of the appraised projects. However, the system of labour-intensive road maintenance increased the household incomes of poor families. Further poverty-reducing effects result from the generally improved economic and socio-economic situation, which can be attributed at least partially to the improved transport link. Thus, the poverty rate in Houaphan Province decreased from 71.3 % to 50.5 % between 1997/98 and 2007/08.

Women are often in charge of health issues and preparing meals for the families. The improved access to healthcare facilities and markets relieves women's burdens, although gender equality was not an explicit object of the project.

Environmental impacts result from the road rehabilitation project in the form of reduced transport costs and, consequently, an increase in timber felling and removal, which was notable in the early 2000's. At the same time, the economic boost to the project provinces has enabled the population whose livelihoods depended on slash-and-burn farming to find alternative income opportunities, thereby removing pressure from existing forest stands. According to information from the road and forestry authority, timber transports have meanwhile decreased, so that from our perspective the inverse effect, that is, the contribution of the project to the creation of alternative income opportunities and, thus, to reducing slash-and-burn farming, is equally plausible.

The primary objective of contributing to the economic development of the remote and poor regions of Xieng Khouang and Houaphan and, in the course of Phase II, to enhance trans-boundary traffic links, continues to be relevant from today's perspective. The construction of an all-weather bituminous road must be regarded as a necessary prerequisite for this objective. Likewise, the improved transport link to Vietnam is of strategic importance both for the two provinces and for Laos as a landlocked country in

general. The connection and maintenance of the national road network, including its link to the road network of the neighbouring countries, is a high priority in the development planning of Laos. Donor coordination in the road sector is functioning flawlessly. The current German Development Cooperation projects fit into this planning. In summary, we rate the relevance of the project as good (2).

The road link that has been created is serviceable year-round on all sections. According to the responsible provincial departments of the Ministry of Public Works and Transport as well as transport companies operating on the route, the average speed on all sections has risen considerably, and motorised transport has increased much more than initially expected. However, all road sections display signs of wear and tear (notably potholes as well as damage to shoulders and subsidence) due to design and maintenance weaknesses. On some sections this reduces the average speed that can be achieved. We rate the effectiveness of the project as satisfactory (3).

With regard to production efficiency, the favourable unit costs deserve to be emphasised. The moderate construction costs on the one hand and the rapid growth of traffic on the other hand have led to a high economic rate of return of the project in Phase II (21%) and, thus, to a high allocation efficiency. We rate the efficiency of the measures of Phase I, for which no cost-benefit calculation was performed, as good (2) and those of Phase II as very good (1).

The overall objective of the project was to contribute to the economic development of the region and, for Phase II, additionally to encouraging cross-border cooperation. Moreover, at the time of project appraisal of both phases, no specific or informative indicators were defined for the overall objective, yet a number of important socio-economic indicators have improved considerably. The conclusion that the described development was also significantly influenced by the rehabilitation of the project road is, in our opinion, plausible, particularly in regard to the accessibility of education and healthcare facilities, the increase in tourism and electrification. We rate the overarching impact as very good (1).

In assessing sustainability, a distinction has to be made between the fiscal-financial and the functional dimension:

- In financial-fiscal terms, Laos disposes of a road fund whose volume is still not sufficient to finance maintenance costs in total; however, a fuel tax increase – as the main source of revenue for the fund – has been agreed upon with the World Bank for the new *Road Sector Project*. In the medium term, the fund can thus be expected to cover all maintenance costs.
- In functional terms, the mechanical routine maintenance of the project road, in the form currently practised under the *performance-based contracts*, apparently cannot guarantee sufficiently good serviceability of the road at present. The non-mechanical maintenance, in contrast, offers no reason for complaint. Due to the high priority attached by the government of the Lao PDR to the main road network and the willingness displayed in the past by the Ministry of Public Works and Transport and the foreign donors to finance periodic maintenance and rehabilitation, it is to be expected that the substance and serviceability of the project road will be preserved in the long term, if ultimately at higher (repair) costs.

We rate the sustainability of the projects as satisfactory (3).

In consideration of the aspects mentioned above, we rate the overall developmental performance of the projects as good (2).

General conclusions and recommendations

The contracting of private construction firms in the interest of more efficient road maintenance constitutes a necessary but not yet sufficient condition *per se*; it also requires a transparent set of regulations as well as effective control and sanctioning mechanisms on the part of the relevant clients (usually the road construction authorities).

Notes on the methods used to evaluate project success (project rating)

Projects 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:

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| 1 | Very good result that clearly exceeds expectations |
| 2 | Good result, fully in line with expectations and without any significant shortcomings |
| 3 | Satisfactory result – project falls short of expectations but the positive results dominate |
| 4 | Unsatisfactory result – significantly below expectations, with negative results dominating despite discernible positive results |
| 5 | Clearly inadequate result – despite some positive partial results, the negative results clearly dominate |
| 6 | The project has no impact or the situation has actually deteriorated |

Ratings 1-3 denote a positive or successful assessment while ratings 4-6 denote a not positive or unsuccessful assessment

The criterion of 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 an improvement is very unlikely. 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. Ratings 1-3 of the overall rating denote a "successful" project while ratings 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" (rating 3).