

Evaluation Report 2018 - 6

# **Ex-post Evaluation of Regional Road Improvement Project in Cambodia**

**The Export-Import Bank of Korea**

(Government Agency for EDCF)

**EDCF Evaluation Team**

(Evaluated by University of Seoul and Korea Expressway Corporation)

The evaluation was entrusted to the external research team led by Evaluation Project Manager Youngtae Kim, a professor at the University of Seoul, for the purpose of an independent evaluation. The opinion, findings and conclusion or recommendations expressed in this report are those of the external evaluator and do not necessarily reflect the views of Korea Eximbank and EDCF.

## **Report Summary**

### **1. Project Overview**

- The aim of the Ex-post Evaluation of Regional Road Improvement Project in Cambodia is to provide an objective, expert analysis of the performance and limitations of the said project, and to draw lessons and suggestions applicable to the design of similar projects in the future.
- The Regional Road Improvement Project in Cambodia (hereinafter, “Project”) is a development project co-financed by the Economic Development Cooperation Fund (EDCF) and the Asian Development Bank (ADB). The Project funded by EDCF covered the improvement of the total extension of 210km on six road sections in three provinces (i.e. Siem Reap, Kampong Thom and Kampong Cham).
- The purpose of the Project is to improve regional roads in Cambodia for (i) developing regional economy and expanding employment through the revitalization of inter-regional trade between central and remote areas, (ii) improving welfare by increasing the accessibility of local residents to social and economic infrastructure and (iii) promoting balanced national development through the development of underprivileged regions.
- Project Executing Agency: Ministry of Rural Development (MRD)  
Consultant: Sambo Engineering  
Constructor: Hyundai Engineering
- The planned project period was 39 months in total from November 2011 when the loan contract went into effect, to February 2015, including 3 months for consultant employment, 6 months for detailed design, 6 months for contractor employment, and 24 months for construction and supervision. However, the actual project period was 42 months, from 4 months for consultant employment, 5 months for detailed design (including 3 months for contractor selection) to 33 months for construction and supervision.
- The planned project budget to be supported by EDCF was USD 21 million including a reserve fund. The actual project budget was USD 20.97 million, leaving an estimated balance of USD 30,000 balance compared to the original plan. As a result, the actual expense ratio was 99.9% (actual: USD 20.97 million / planned: USD 21 million).

### **2. Evaluation Method and Result**

#### **A. Evaluation Method**

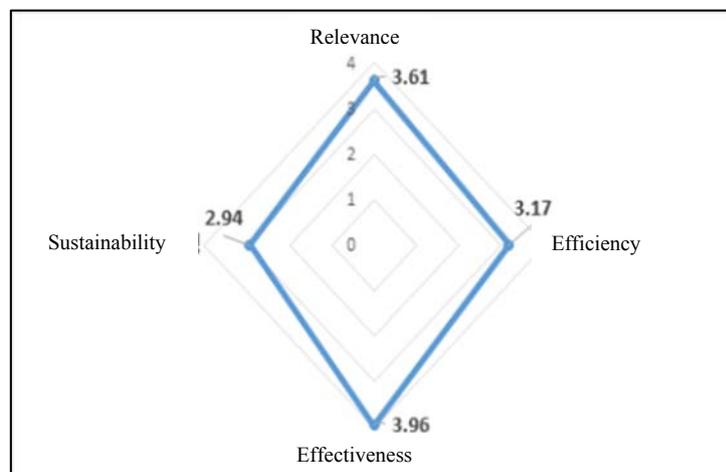
- The ex-post evaluation was performed based on the five OECD DAC criteria.<sup>1</sup> However, it was difficult to achieve meaningful evaluation results in the area of “impact,” i.e. a criterion for assessing the mid- to long-term performance, since the target year for measuring the mid- to long-term performance of the Project has not yet arrived, and there were limitations to a quantitative analysis of the direct causality between the proposed mid- to long-term performance and the Project. As a result, this Project was evaluated only on the other four OECD DAC criteria, i.e. relevance, efficiency, effectiveness and sustainability.

## B. Evaluation Result

- The overall evaluation result was 3.41/4.00 points and the Project was evaluated as “successful.”

<Comprehensive Evaluation Table>

Criteria	Weighting	Rating	Evaluation
Relevance	25%	3.61	Relevant
Efficiency	25%	3.17	Efficient
Effectiveness	25%	3.95	Very Effective
Sustainability	25%	2.93	Sustainable
Cross-cutting Issues	-	-	
<b>Comprehensive Evaluation Rating</b>	<b>100%</b>	<b>3.41</b>	<b>Successful</b>



- (Relevance) The Project focuses on improving 210-km regional roads in three provinces and is consistent with the policy of promoting transportation infrastructure development in rural areas, i.e. one of the Cambodian government’s main strategies for economic growth. It is also conformity with EDCF's support strategy, which sets rural development as one of the key cooperation sectors in Cambodia. ADB’s performance evaluation indicators were utilized instead of new indicators optimized for the EDCF project at the time of planning the Project. Therefore, the project design is rather insufficient due to an absence of effective performance indicators for the scope and size of the Project. The Project was evaluated to be relevant on the whole.
- (Efficiency) Whereas a 9-month delay occurred due to flood-caused inundation and material procurement issues at the beginning of the Project, the Project was completed

<sup>1</sup> Organization for Economic Cooperation and Development, Development Assistance Committee

within the budget scope. In addition, most planned outputs were produced, but the 266E road pavement was not completed and was transferred to the next project on account of flood relief expenditure at the initial stage of the Project. The Project was evaluated to be efficient on the whole.

- (Effectiveness) The Project was evaluated to be very effective as it achieved all of its key short-term goals—increased road traffic, shortened average travel time, and an increased number of days available for using roads.
- (Sustainability) The high interest and participation of the government and residents of the recipient country are positive factors for sustainability. Meanwhile, narrow road width (4.5m) and overloaded vehicles are the main causes of road breakage in the project section. In certain sections, overloaded heavy vehicles are unavoidable due to rocky mountains. However, roads on these sections are seriously damaged as route changes were not made or reduction measures were not taken at the project planning. The road maintenance system is appropriate, but budget shortage is a limitation on continuous maintenance. Although technological and financial sustainability are rather insufficient, the Project was evaluated to be generally sustainable.
- (Cross-cutting Issues) The negative impact of the Project on environment is insignificant. The Project has positive effects such as improved air quality due to a reduction of fugitive dust. In addition, the negative impact of the Project on vulnerable social groups is negligible in terms of economic or gender discrimination. The Project was evaluated as positive on the quality of life and economic activity of local residents.

### **3. Lessons and Recommendations**

#### **A. Lessons**

- The Project improves the traffic efficiency of six road sections (total extension of 210km) in three provinces (i.e. Siem Reap, Kampong Thom and Kampong Cham) in the project area, thereby contributing to local economic development as well as enhanced access of residents to the social and economic infrastructure. The Project was evaluated to be successful over all.

#### **1) Success Factors**

- The success factors for the Project are its close relevance to the development policy and upper-level plan of the Cambodian government and the active support for the Project from the recipient country.
  - The Project is highly consistent with the Cambodian government's policy to promote the development of transportation infrastructure in rural areas, one of its main strategies for economic growth. Therefore, the Cambodian government has a strong will to carry out the Project.
  - In particular, MRD, i.e. the project executing agency, has paid close attention to quality control during the Project and also strived for continuous maintenance and

follow-up projects after completion of the Project, based on its high awareness of the function and importance of the regional roads in Cambodia.

- The high interest and cooperation of local residents in the Project has not only contributed to its smooth implementation, but also helped with continuous maintenance.
  - Local residents have high expectations and interests regarding the Project as it aims to enhance their accessibility to social infrastructure and to improve the road environment and traffic efficiency. This has minimized civil complaints and disputes related to the Project, thereby enabling smooth execution of the Project.
  - As local residents who experienced the visible effects after completion of the Project are highly interested in the maintenance and management of the project section, the project executing agency of the recipient country was able to prepare a more effective maintenance policy.

## 2) Complementary Factors

- Overall, the Project was evaluated to be successful. However, some factors that need to be complemented in part were also found during the evaluation process.
- The Project is a co-financing project by EDCF and ADB. ADB's performance evaluation indicator table, i.e. logical framework, has been utilized instead of new indicators optimized for the EDCF project at the time of planning the Project. Therefore, no effective performance indicators for the scope and size of the Project were prepared.
  - This issue also serves as an obstacle to a specific, consistent evaluation in the interim, final, and follow-up evaluation process.
- The Project was designed without due consideration of road quality and technical aspects at the time of planning of the Project, causing problems as to continuous road maintenance.
  - To address the limitation of the DBST method, which is relatively weak in terms of road pavement durability and was only adopted for economic reasons, it is necessary to control overloaded vehicles passing within the project section, but the field survey shows no control for overloaded vehicles, causing damage to road pavement.
  - The road width of the entire section was designed to be 4.5m due to the limitations of using the existing road. Such narrow road width coupled with travel by heavy vehicles or on the shoulders results in serious damage to the pavement and the shoulder boundary.
  - In certain project sections, overloading heavy vehicles was unavoidable due to rocky mountains. However, roads on the relevant section have been seriously damaged as route changes were not made or reduction measures were not taken at the project planning.

## **B. Recommendations**

- Establish an optimal performance evaluation indicator table taking into account the scope and size of an EDCF project to be co-financed with an MDB
  - It is also necessary to enhance the consistency and effectiveness of future performance management.
  - For effective performance management, an accurate baseline survey should be carried out for measuring indicators when establishing a logical framework and a systematic performance management plan should be developed considering the interim, final, and follow-up evaluation.
- The planning and technical review of the Project that take into account road sustainability are required in the initial phase of the Project
  - If a road pavement method with relatively poor durability, such as DBST, should be considered due to budget constraints, measures shall be taken to minimize road damage by controlling the passage of overloaded vehicles over a certain weight. In some project sections, overloaded heavy vehicles are unavoidable due to rocky mountains. In such case, reduction measures need to be developed, such as controlling overloaded vehicles and applying a very rigid pavement method for the relevant section.
  - As most regional roads are used for daily lives and children's school commute, regulating freight vehicles and traffic speed is essential for traffic safety and should be considered in designing similar projects in the future.
  - A careful review of road width is also required for future similar projects. In particular, a road width of 4.5m is narrow even for passenger cars, and cargo vehicles would need to drive on the shoulder if two were to cross over the path. This is one of the main causes of road pavement damage. In fact, MRD, i.e. the project executing agency of the recipient country, takes this issue seriously and plans to expand the road width up to 5 to 6 meters in future projects.
  - Drain pipes should be installed at new buildings and access roads adjacent to the road in order to ensure proper drainage treatment. Pavement is very vulnerable to inundation in its structural nature, and is prone to damage when such condition continues or reiterates. Therefore, installing drain pipes needs to be promoted at the time of license/approval of or construction management of access roads.
  - Finally, the design of future similar projects should take into sufficient consideration the impact of climate change. Due consideration should be given to the drainage system at the road design phase, against a higher likelihood of causing road damage due to inundation in the aftermath of frequent floods by climate change.
- Prepare a plan for continuous maintenance and management of roads.

- Continuous maintenance is required to ensure that road function and utility are maintained after road construction. The government should establish a comprehensive maintenance plan to maintain the function of the road by determining the criteria and priorities of the repair work and allocating appropriate personnel and materials.
- To maintain proper road functions, continuous maintenance costs and proper inputs are required. Special maintenance costs need to be considered to prepare against serious damage, especially in the Siem Reap regional road.
- Proper control over overloaded vehicles, one of the main causes of road damage, should be taken to minimize such damage. Overloaded vehicle checkpoints should be set up not only at the start point but also in the middle of the project section in order to prevent the traffic of overloaded vehicles.