

Ex-Ante Evaluation (for Japanese ODA Loan)

Southeast Asia Division 2

Southeast Asia and Pacific Department, JICA

1. Basic Information

Country: Kingdom of Cambodia (hereinafter referred to as "Cambodia")

Project: National Road No.5 Improvement Project (Thlea Ma'am - Battambang and Sri Sophorn - Poipet Sections) (II)

Loan Agreement signing date: March 24, 2020

2. Background and Necessity of the Project

(1) Current State and Issues of the Road Sector in Cambodia and the Positioning of the Project

Railway network development has made slow progress in Cambodia, and road transportation plays a central role in domestic transportation. Moreover, Cambodia is located between Thailand and Vietnam and is located in the middle of the Southern Economic Corridor, in which efforts to strengthen connectivity are being made under the Master Plan on ASEAN Connectivity approved at the ASEAN top-level meeting in 2010. Thus, Cambodia is expected to be a regional distribution hub. Cambodia is making a progress in rehabilitating its transportation infrastructure with the aid of the international society, including Japan, World Bank, and Asian Development Bank (hereinafter referred to as "ADB"), since the end of the civil war in 1991. The core parts of road and bridge infrastructure have been almost rehabilitated and constructed. However, regarding existing roads, as sections that have been temporarily repaired after the civil war have aged and some of them are narrow in width, further rehabilitation of the existing roads has become an issue in responding to increased domestic and international logistics resulting from future economic development in Cambodia.

In particular, National Road No.5 is an arterial road in Cambodia and is a part of Asian Highway Route No.1 and the Southern Economic Corridor, and thus, it is expected to function as a main industrial artery in the Mekong region. Although the temporary restoration work has been carried out for the section covered by National Road No.5 Improvement Project (Thlea Ma'am - Battambang and Sri Sophorn - Poipet Sections) (hereinafter referred to as "the Project"), the Road is of poor quality, and traffic volume shows an upward trend. For these reasons, increasing the transportation capacity and improving the logistics efficiency have become urgent issues in responding to increased domestic and international

logistics resulting from future economic development in Cambodia.

In the National Strategic Development Plan 2019-2023 (hereinafter referred to as “NSDP 2019-2023”), the Royal Government of Cambodia shows that it continues to make efforts to rehabilitate and develop the transportation infrastructure as a priority issue and aims at rehabilitating, constructing and widening the single digit national roads over a length of 700 kilometers or more from two-lane double bituminous surface treatment roads to four-lane asphalt concrete roads in the period of the NSDP 2019-2023. In the National Road Network Master Plan (hereinafter referred to as "M/P") formulated in 2006 with the assistance from JICA, improvement to National Road No.5, which is a part of the Southern Economic Corridor, is defined as a priority project, since the project is considered a contribution to national and regional integration.

(2) Japan and JICA’s Cooperation Policy, etc. in the Road Sector and the Positioning of the Project

In the Japanese Development Cooperation Policy for the Kingdom of Cambodia (July 2017), Japan provides assistance for strengthening distribution networks including both hard and soft infrastructure (e.g. roads, ports, the procedures of customs and excise, etc) with the aim of promoting regional connectivity and industrial development, under the priority goal of “Industry development”. Moreover, in the JICA Country Analysis Paper for the Kingdom of Cambodia (March 2014), the analysis results showed that infrastructure development to enhance transportation capacity to Vietnam and Thailand was a priority issue. Therefore, the Project is consistent with Japan and JICA’s country assistance policies and analyses.

JICA has made efforts at infrastructure development and capacity development for maintenance of infrastructure by carrying out the Project for Improvement of National Road No.1 (I) to (IV) and Urban Section (2005-2017, Grant Aid), the Project for Construction of Neak Loeung Bridge (2010-2016, Grant Aid), the Project for Rehabilitation of the Chroy Changwar Bridge (2016-2020, Grant Aid) and other projects undertaken as Grant Aid, as well as the Project for Strengthening Capacity for Maintenance of Roads and Bridges (2015-2018, Technical Cooperation Project), the Project for Capacity Enhancement on Environmental and Social Considerations in Implementing Agency in Road Sector (2017-2020, Technical Assistance Project related to Japanese ODA Loan) and other projects as Technical Cooperation. Moreover, based on the M/P as mentioned above, JICA is currently supporting

improvement of National Road No.5 and signed Japanese ODA Loan Agreement: National Road No.5 Improvement Project (Battambang - Sri Sophorn Section) ((I) in May 2013 and (II) in March 2017); National Road No.5 Improvement Project (Prek Kdam - Thlea Ma'am Section) ((I) in July 2014 and (II) in March 2016); and National Road No.5 Improvement Project (Thlea Ma'am - Battambang and Sri Sophorn - Poipet Sections) ((I) in March 2015). In addition, due to improved distribution network between Thailand and Cambodia resulting from improvement of National Road No.5, it is expected that benefit will be brought to Japanese companies which engage in transportation of raw materials and agricultural products between both countries and which have manufacturing bases in both countries.

Furthermore, in the M/P, National Road No.5 covered by the Project is defined as the most important section that contributes to Cambodia's economic development, and the Project also contributes to strengthening of connectivity within the Mekong region through infrastructure development. Therefore, it is expected that the Project will contribute to the Sustainable Development Goal (SDG) 9 (Build resilient infrastructure, promote inclusive and sustainable industrialization).

(3) Other Donors' Activities

According to Country Partnership Strategy (October 2019), in order to support agriculture commercialization, access to markets and tourism, and facilitate trade, ADB will continue to improve selected national, provincial and rural roads. ADB implemented Road Asset Management Project (2008-2014) in collaboration with World Bank and Australia to build capacity to improve the maintenance and management of roads network, including installation of road signs and repair to damaged sections including National Road No.5. In addition, ADB is supporting improvement, asset management, road safety and etc. of rural roads in ten provinces. World Bank is giving support for improving climate resilience of national roads, provincial roads and rural roads.

Moreover, China has been increasing support for the transportation sector and is the largest donor in the sector. In a rolling plan in the transportation sector from 2020 to 2022, China plans to give support for development of roads over a total length of 732 kilometers in the period of the plan. China also carried out improvement of National Road No.5 (2012-2016), in which it widened the road to four-lane in the section from the environs of Phnom Penh to Prek Kdam Bridge, which is not covered by the Project.

3. Project Description

(1) Project Objective

The objective of the Project is to increase the transportation capacity as well as to improve the logistics efficiency in the section between Thlea Ma'am and Battambang, and Sri Sophorn and Poipet along the National Road No.5 which connects Phnom Penh Capital and Thai border, by improving the condition of existing road and constructing the new bypasses, thereby contributing to economic development of Cambodia.

(2) Project Site / Target Area

Pursat, Battambang and Banteay Meanchey Provinces

(3) Project Component

- 1) Civil works (rehabilitation and widening of the existing road (about 134 kilometers in total length), construction of bypasses (about 12 kilometers in total length), newly construction of 8 bridges, rehabilitation of 19 bridges and widening of 6 bridges, installation of median division (3 meters in width over the whole section), and construction of 6 weigh stations)
- 2) Consulting services (e.g. detailed design, bidding assistance, construction supervision, human resource development / enhancement of the organization)

(4) Estimated Project Cost

47,425 million yen (17,702 million yen of which is covered by yen loans for the Project (II))

(5) Schedule

From March 2015 to June 2024 (112 months in total). Project completion is defined as the commencement of the service of the road (June 2023).

(6) Project Implementation Structure

- 1) Borrower: The Royal Government of Cambodia
- 2) Executing Agency: Ministry of Public Works and Transport (hereinafter referred to as "MPWT")
- 3) Operation and Maintenance System: MPWT

(7) Collaboration and Division of Work with Other Projects and Donors

1) Japan's Assistance Activity

Japan is promoting connectivity in the Mekong region by improving roads in the Southern Economic Corridor through the Project as well as the National Road No.5 Improvement Project (Battambang - Sri

Sophorn) (I) (II) (2013-2020) and National Road No.5 Improvement Project (Prek Kdam - Thlea Ma'am) (I) (II) (2014-2022), which are Japanese ODA Loan projects in progress at present. Moreover, Japan has made efforts to enhance the capacity for maintenance of infrastructure for the executing agency through the Project for Strengthening Capacity for Maintenance of Roads and Bridges (2015-2018, Technical Cooperation Project) and the Project for Capacity Enhancement on Environmental and Social Considerations in Implementing Agency in Road Sector (2017-2020, Technical Assistance Project related to Japanese ODA Loan). The outcomes of these Technical Cooperation are used in infrastructure development projects including the Project.

2) Other Donors' Assistance Activity

Neighbouring Countries Economic Development Cooperation Agency (hereinafter referred to as "NEDA") is giving support for construction of border crossing facilities between Thailand and Cambodia and an access road to National Road No.5 from the border between Thailand and Cambodia through providing a loan to the Royal Government of Cambodia. Each other's project will be coordinated in order to develop an interchange connecting the access road and National Road No.5,

(8) Environmental and Social Considerations / Cross Cutting Issues / Gender Categorization

1) Environmental and Social Considerations

- ① Category: A
- ② Reason for Categorization: The Project falls into the road sector and sensitive characteristics under the JICA Guidelines for Environmental and Social Considerations ((promulgated in April 2010).
- ③ Environmental Permit: An Environmental Impact Assessment (EIA) report for the Project was approved by the Ministry of Environment on October 17, 2014.
- ④ Measures for Pollution Control: The measures will be taken to address air pollution, noise, and vibration during the construction stage, including the regulation of construction working hours, and emission gas control and other measures will be carried out in the service stage.
- ⑤ Natural Environment: Since the Project site is not located in sensitive

areas such as national parks, adverse impact on the natural environment is assumed to be minimal, although the bypass route will partially pass through the boundary of the zone 1 (transition zone) of Tonle Sap Biosphere Reserve. However, additional environmental permissions besides EIA related to the construction activities in the zone 1 are not required. Cutting down of trees will be minimized during the construction stage, and the ecosystems surrounding the Project site will be monitored in the service stage.

- ⑥ Social Environment: The Project involves the land acquisition about 55.7 hectares and the involuntary resettlement of 772 households (including setback), which has been carried out in accordance with domestic procedures in Cambodia and the resettlement action plan. Approximately more than 80% of the land acquisition has been completed as of March, 2020. There were no particular objections to the implementation of the Project in stakeholder meeting regarding resettlement. In addition, it was confirmed in appraisal that no complaints had been sent to the grievance redress mechanism by affected households.
- ⑦ Other / Monitoring: MPWT, which is an executing agency of the Project, will monitor air quality, noise and vibration, waste amount, and influences on ecosystems and other matters during the construction and service stages. Moreover, the Inter-Ministerial Resettlement Committee (hereinafter referred to as "IRC") is monitoring the land acquisition and involuntary resettlement, and external consultant hired by IRC is monitoring the state of paying compensation and residents' living conditions after resettlement.

2) Cross-Cutting Issues

- ① The MPWT obligates contractors to implement AIDS / HIV prevention program as a part of health care for workers.
- ② The Project will contribute to adaptations regarding climate change through climate risk mitigation measures such as raising the level of road surface in the partial sections and proper development of water supply pipes and drainage pipes under the roads in order to prevent further flood damage.

- 3) Gender Categorization: [Gender Project] GI(S) (gender activity integration project)

<Activity Contents / Reason for Categorization>

MPWT formulated “Gender Strategy: Mainstreaming in Public Works and Transport Sector 2016-2020” and has made efforts to create job opportunities for women and to promote women's capacity development. Under the strategy, MPWT is implementing the Project, and in the construction stage, contractors has made efforts to provide facilities for promote employment of women and to increase the proportion of women in unskilled workforce (to more than 10%). Therefore, the Project shall be categorized as a gender activity integration project.

- (9) Other Important Issues: N/A

4. Targeted Outcomes

- (1) Quantitative Effects

- 1) Outcomes (Operation and Effect Indicators)

Indicators	Target roads	Baseline (Actual value in 2012)	Target (2025) [Expected value 2 years after project completion]
Annual average daily traffic (PCU*/day)	Thlea Ma'am - Battambang	6,174	17,223
	Pursat bypass	-	15,418
	Sri Sophorn - Poipet	7,454	18,795
Time Time (minutes)	Thlea Ma'am - Battambang (including the Pursat bypass)	116	144.4
	Sri Sophorn - Poipet	44	50

* PCU: Passenger Car Unit. To show traffic volume, one passenger car is counted as 1 PCU, and other types of vehicles are converted into passenger cars by multiplying them by a given coefficient according to their types.

- (2) Qualitative Effects

Promotion of the investment environment through the improvement of physical

distribution between Thailand and Cambodia, as well as bringing benefits to Japanese companies in Cambodia. Strengthening of connectivity and promoting regional integration. Securing of safe passage, increasing of the transportation capacity and improvement of the logistics efficiency through improving the condition of existing roads. Improvement of safety for pedestrians and etc. through securing shoulders and sidewalks and installing appropriate road safety facilities.

(3) Internal Rate of Return

Based on the following assumptions, Economic Internal Rate of Return (EIRR) of the Project is calculated at 19.9%. Since the Project is a project for construction of a road for which no toll will be collected, Financial Internal Rate of Return (FIRR) is not calculated.

[EIRR]

Cost: Project costs and operation / maintenance costs (excluding tax)

Benefit: Shortening of travel time and reduction in vehicle operating cost

Project Life: 36 years

5. Prerequisites / External Conditions

(1) Preconditions: None in particular.

(2) External conditions: None in particular.

6. Lessons Learned from Past Projects

From the results of the ex-post evaluations of the Project for Improvement of National Highway Route 6, Siem Reap Section (Grant Aid for Cambodia), and the Indus Highway Construction Project (Japanese ODA Loan for the Islamic Republic of Pakistan), it has been learned that reckless driving and overloaded vehicles have frequently caused traffic accidents. A lesson learned is that it is necessary to secure safety through installing ancillary roads facilities and measures for control on overloaded vehicles. Based on the above, the Project plans to install median division (3 m in width over the whole section of the Project) and weigh stations throughout the whole National Road No.5 for securing safety. They are expected to contribute to reduction of traffic accidents.

7. Evaluation Results

The Project is consistent with the development issues and policies of Cambodia, as well as the assistance policies and analysis results of Japan and JICA, and aims at increasing transportation capacity and improving logistics efficiency between Thailand and Cambodia through rehabilitating and widening the existing road and constructing bypasses in the National Road No.5.

Moreover, as the Project is expected to contribute to SDG 9 (Build resilient infrastructure, promote inclusive and sustainable industrialization), it is highly necessary to support implementing the Project.

8. Plan for Future Evaluation

(1) Indicators to be Used in Future Evaluation

As indicated in 4. (1) to (3).

(2) Timing of Future Evaluation

Two years after project completion (ex-post evaluation)

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