

Ex-Ante Evaluation (for Japanese ODA Loan)
Southeast Asia Division 2, Southeast Asia and Pacific Department
Japan International Cooperation Agency

1. Name of the Project

- (1) Country: Kingdom of Cambodia (Cambodia)
 - (2) Project Site/Target Area: Kampong Chhnang, Pursat, Battambang, and Banteay Meanchey provinces (population: approx. 2.8 million in total)
 - (3) Project: Rural Road Connectivity Improvement Project
- Loan Agreement: June 22, 2023

2. Background and Necessity of the Project

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

In Cambodia, road transport plays a key role in domestic transport, with a 90% share of road transport and 10% of rail transport for both passengers and freight (source: Asian Development Bank 2019; hereinafter referred to as "ADB"). The extensions of roads in the country consist of 7,261 km of national roads, 9,031 km of provincial roads, and 47,919 km of rural roads, totaling 64,211 km (August 2022; source: Ministry of Rural Development (MRD) and Ministry of Public Works and Transport), of which rural roads remain at a low level with a road pavement ratio of approximately 9%. Residents in rural areas are adversely affected by poor visibility due to dust during the dry season and road disruption due to torrential rains and flooding during the rainy season. Specifically, floods that occurred in the target area between 2009 and 2019 damaged more than 1,500 km of roads. More than 1.2 million people have been affected by floods in some way, including the isolation of villages due to flooding (source: Cambodia Disaster Damage & Loss Information System).

The Royal Government of Cambodia has identified "Inclusive and Sustainable Development" as a key agenda in its national development plan, "Rectangular Strategy Phase IV" (2018-2023), which focuses on rural development, including the development of rural roads. The MRD, with the cooperation of the ADB, has also formulated a master plan for the development of rural roads nationwide (approved in 2022), and routes that need to be prioritized have been identified among 1,370 important routes.

JICA has been implementing the improvement of National Road No. 5, which is an arterial road and part of the Southern Economic Corridor in Cambodia, by

means of Japanese ODA loan; however, as mentioned above, rural roads are not sufficiently paved in the areas along the road. In this context, the Royal Government of Cambodia requested a Rural Road Connectivity Improvement Project (hereinafter referred to as "the Project") to improve rural roads in the four provinces located alongside National Road No. 5 with the aim of strengthening connectivity with National Road No. 5 and improving the living environment of residents living along the road. The target candidate roads for the Project (hereinafter referred to as "the Sub-projects") have been selected in accordance with the priority routes identified in the aforementioned master plan for the development of rural roads throughout the country.

The Project aims to expand the beneficial effects of National Road No. 5 by improving access to the road, as this will also contribute to the improvement of residents' lives and drive economic activities. The development of rural roads could serve to generate benefits from economic development in rural areas, leading to correction of the disparity between urban and rural communities, thus contributing to the realization of "Quality of Growth". The four target provinces of the Project are also one of the major breadbasket areas in Cambodia, with farmers delivering their produce to a collection point in the region, from where it is then transported by large trucks to Phnom Penh and other destinations along National Road No. 5. Since rice is not limited to domestic consumption but is also Cambodia's top agricultural export, the Project can additionally contribute to food security outside of Cambodia. The rural road development to be implemented under the Project is positioned as an essential priority project for local economic growth in the "Rectangular Strategy Phase IV" (2018-2023) published by the Royal Government of Cambodia.

(2) Japan's and JICA's Cooperation Policy and Operations in the Road Sector

In the "JICA Country Analysis Paper for the Kingdom of Cambodia" (March 2014), it is stated that priority is to be given to "the development of road network systems centered on the Southern Economic Corridor" and that "strengthening the logistics network both in terms of structural and non-structural infrastructure (e.g., roads, ports, customs procedures, etc.) from the perspective of strengthening regional connectivity and industrial promotion" is to be addressed, which is one of the key areas of focus in the "Country Assistance Policy for Cambodia" (July 2017) in promoting industrial development, and the Project is consistent with these analyses and policies. It will also contribute to the strengthening of connectivity in the country under the JICA Global Agenda for

Transportation. In addition, the Project will benefit the pursuit of economic prosperity in the "Free and Open Indo-Pacific" given that it will improve physical connectivity by upgrading the road network in the country. Furthermore, the Project also contributes to SDG Goal 1 (End poverty in all its forms everywhere), Goal 3 Target 3.6 (Halve the number of global deaths and injuries from road traffic accidents), Goal 9 (Build resilient infrastructure, promote inclusive and sustainable industrialization, and foster innovation), and Goal 11 (Make cities and human settlements inclusive, safe, resilient, and sustainable).

(3) Other Donors' Activities

The ADB places emphasis on the development of national and rural roads for the commercialization of agriculture, enhancement of market access, and promotion of tourism and trade. ADB has implemented three phases of the "Rural Roads Improvement Project" to support the improvement and asset management of rural roads and the enhancement of road safety. In the "Rural Roads Improvement Project III" (2019-2025) by ADB, it provided cooperation in the formulation of a master plan for the improvement of rural roads. The World Bank has been helping with the improvement of existing national, provincial, and rural roads and capacity-building of executing agencies through the "Road Asset Management Project" and other programs. Meanwhile, China has increased its support to the transportation and traffic sector as the largest donor in the sector, and its rolling plan for the transportation sector for 2020-2022 includes a total of 732 km of road development support during the period covered, with some roads already in service and others scheduled to be put into service in 2024.

There is no overlap with any of other donor agencies in the scope of support offered under the Project. Meanwhile, the number of linkages with other rural road improvement projects is to be taken into account when prioritizing candidate routes, which may create the possibility of collaboration and synergy with roads supported by other donor agencies.

3. Project Description

(1) Project Description

① Project Objective

The objective of the Project is to strengthen the rural road network, improve the access of people for socio economic activities and adapt to climate change by improving rural roads including bridges and drainage structures in the surrounding provinces of National Road No.5, thereby

contributing to the socioeconomic development in the target area.

② Project Components

i) Civil works ("Sub-project for improvement of rural roads"): Pavement improvement and widening/shoulder improvement of existing roads (About 38 routes, 530 km in total estimated length), with no heavy vehicle traffic, etc. to be taken into account, thus the pavement method is less advanced compared to that of the trunk road (Double Bituminous Surface Treatment (DBST) method, in which asphalt emulsion and aggregate are combined into multiple layers), as well as bridge replacement, drainage facilities, and traffic safety facilities (e.g., signs).

ii) Consulting services: Detailed design, bidding assistance, construction supervision, human resource development and capacity-building of implementing agencies for road operation and maintenance, support for environmental and social considerations, and assistance for traffic safety education and awareness activities.

For the Sub-projects to be implemented under the Project, 38 routes that meet the following prerequisites are considered as candidates and ranked in order of priority based on the selection criteria. The current Sub-projects are tentative proposals, and they may be replaced or added or subtracted during the Project implementation phase. The prerequisites and selection criteria are as follows: For the process of adding and subtracting Sub-projects, it is assumed that routes with high priority based on the selection criteria will be added while routes with low priority will be subtracted.

[Prerequisites]

- Must not have any overlap with any other donor's development plan
- Must be in line with the objective of the Project
- Must not fall under Category A in the JICA Guidelines for Environmental and Social Considerations

[Selection Criteria (Evaluation Indicators)]

- Projected future road traffic volume (projected traffic volume/day)
- Effect of shortening the time required to reach a trunk national road (time required to reach a trunk national road)
- Roads passing through areas of poverty (poverty rate)
- Roads that are at risk of flooding (area at risk of flooding/km)

- Roads with areas of farmland along the road (farmland area/km)
- Number of public facilities (schools, hospitals, pagodas, markets) along the road (number of facilities)
- Roads with a large population along the road (population/km)
- Roads having a number of connections with other rural road development projects (number of roads connected)

③ Project Beneficiaries (Target Groups)

- i) Direct beneficiaries: Residents who utilize the roads (approx. 280,000 people), executing agency-related personnel who receive human resource development and organizational capacity-building.
- ii) End beneficiaries: Residents who receive the benefits of socio-economic development (population of the four target provinces: approximately 2.8 million people).

(2) Estimated Project Cost

28,441 million yen (Japanese ODA loan amount: 23,692 million yen)

(3) Project Implementation Schedule/Cooperation Period

Scheduled from June 2023 to September 2028 (64 months in total). The Project will be completed when all Sub-projects are put into service (August 2027).

(4) Project Implementation Structure

- 1) Borrower: The Royal Government of Cambodia
- 2) Executing Agency: Ministry of Rural Development
- 3) Operation and Maintenance System: Ministry of Rural Development, Provincial Department of Rural Development

(5) Collaboration and Sharing of Roles with Other Donors

1) Japan's Activity

Japan has previously provided support for the National Road No.5 Improvement Project (Battambang and Sri Sophorn Sections) (Phase I) (Phase II)" (Phase I: May 2013, Phase II: March 2017 L/A signing) and other projects funded by ODA loans. The Project aims to improve the rural roads in areas along National Road No. 5, which is currently under construction by other ODA loan project and is expected to generate synergistic effects with the above project as it contributes to the improvement of access to National Road No. 5 for local residents.

2) Other Donors' Activity

N/A

(6) Environmental and Social Consideration

1) Environmental and Social Consideration

① Category: FI

② Reason for Categorization: Sub-projects can not be specified prior to JICA's approval for financing, and they may have environmental impacts under the JICA guidelines for environmental and social considerations (January 2022).

③ Other/Monitoring: In the Project, the executing agency, while receiving assistance from the consultant hired under the ODA loan, is to categorize each Sub-project in accordance with Cambodia's domestic legal system and the JICA Guidelines for Environmental and Social Considerations (promulgated in January 2022), and to take necessary measures for the applicable category. No Category A cases will be included in the Sub-projects.

(7) Cross-Sectoral Issues: The Project contributes to climate change adaptation because it is a road improvement project in a vulnerable flood-prone area, where measures will be taken to reduce road closures due to flooding by raising roads and improving/building new pipe crossings (culverts) to make them passable even during floods. In addition, risks of future climate change impacts have been analyzed for the implementation of the Project, and the results have been reflected in the Project content.

(8) Gender Category: [N/A] ■GI (Gender mainstreaming needs assessment and analysis project)

Reason for Categorization: Although gender-related initiatives were examined with the Royal Government of Cambodia during the appraisal, initiatives that would contribute to gender mainstreaming, including specific metrics were not set. As part of the Project, hiring of female staff and promotion of female managers in the PMU and operation/maintenance management structure will be facilitated.

(9) Other Important Issues: None in particular

4. Targeted Outcomes

(1) Quantitative Effects

1) Outcomes (Operation and Effect Indicators)

Indicators of expected operation and effectiveness are as follows. A baseline and target value for each indicator will be defined on a sample basis when all

Sub-projects are identified.

Indicator	Baseline	Projected Target (2029) [Two years after completion]
Annual Average Daily Traffic (PCU*/day)	-	-
Average Traffic Speed (km/hour)	-	-
Average Travel Time (minutes)	-	-
Impassable Days per Year (days/year)	-	-
Time Zone Population of the Provincial Capital (persons)	-	-
Time Zone Population of Higher-level Medical Facilities (persons)	-	-

*PCU: Passenger Car Unit. One passenger vehicle is counted as 1 PCU, and other vehicles are converted to passenger vehicles by applying certain coefficients.

(2) Qualitative Effects

Improvement of connectivity with National Road No. 5, improvement of the living environment for residents in the surrounding areas of the target route (including National Road No. 5), stable socio-economic development in the surrounding areas of the target route (including National Road No. 5)

(3) Internal Rate of Return

Based on the following prerequisites, the EIRR for the Project would be 23.2% assuming that all the Sub-projects are implemented. Note that FIRR is not calculated since it is not assumed that fees are collected from users, etc.

[EIRR]

Cost: Project costs associated with construction, operation, and maintenance

Benefit: Benefits of reduced travel time and travel expenses

Project Life: 30 years

5. Preconditions and External Factors

- (1) Preconditions: Land acquisition, which is projected to occur on some of the routes, is properly and smoothly implemented by the Royal Government of Cambodia.
- (2) External Factors: Due to national elections that occur during the Project period, there may be delays in government approval procedures, both before and after the election period.

6. Lessons Learned from Past Projects and Application to this Project

The results of the ex-post evaluation of the "ARMM Social Fund for Peace and Development Project" (L/A signed in 2003), a ODA loan to the Republic of the Philippines, suggest that the implementation of a sector loan consisting of multiple Sub-projects is challenging due to the difficulty of managing the overall project portfolio by the lender during the implementation of the project. Accordingly, lessons have been learned to the effect that the target projects should be identified to some extent at the start of projects. In addition, the results of the ex-post evaluation of the "Rural Area Infrastructure Development Project (3)" (L/A signed in 2001) for the Republic of Indonesia indicated that the establishment and operation of a systematic management system, covering from the central office to the field, is indispensable for the supervision of small-scale decentralized projects.

Based on the above lessons learned, the Project aims to identify target Sub-projects as far in advance as possible, and to support coordination among the central, provincial, and field levels in the Project supervision.

7. Evaluation Results

The Project is consistent with the country's development issues and policies, as well as the cooperation policies and analysis by Japan and JICA and contributes to improving connectivity and the living environment of the people living along the roads in the country through the improvement of rural roads. The necessity to implement the Project is high, as it is considered to contribute to SDG Goal 1 (End poverty in all its forms everywhere), Goal 3 Target 3.6 (Halve the number of global deaths and injuries from road traffic accidents), Goal 9 (Build resilient infrastructure, promote inclusive and sustainable industrialization, and foster innovation), and Goal 11 (Make cities and human settlements inclusive, safe, resilient, and sustainable).

8. Plan for Future Evaluation

(1) Indicators to be Used

As indicated in 4 above.

(2) Plan for Future Evaluation

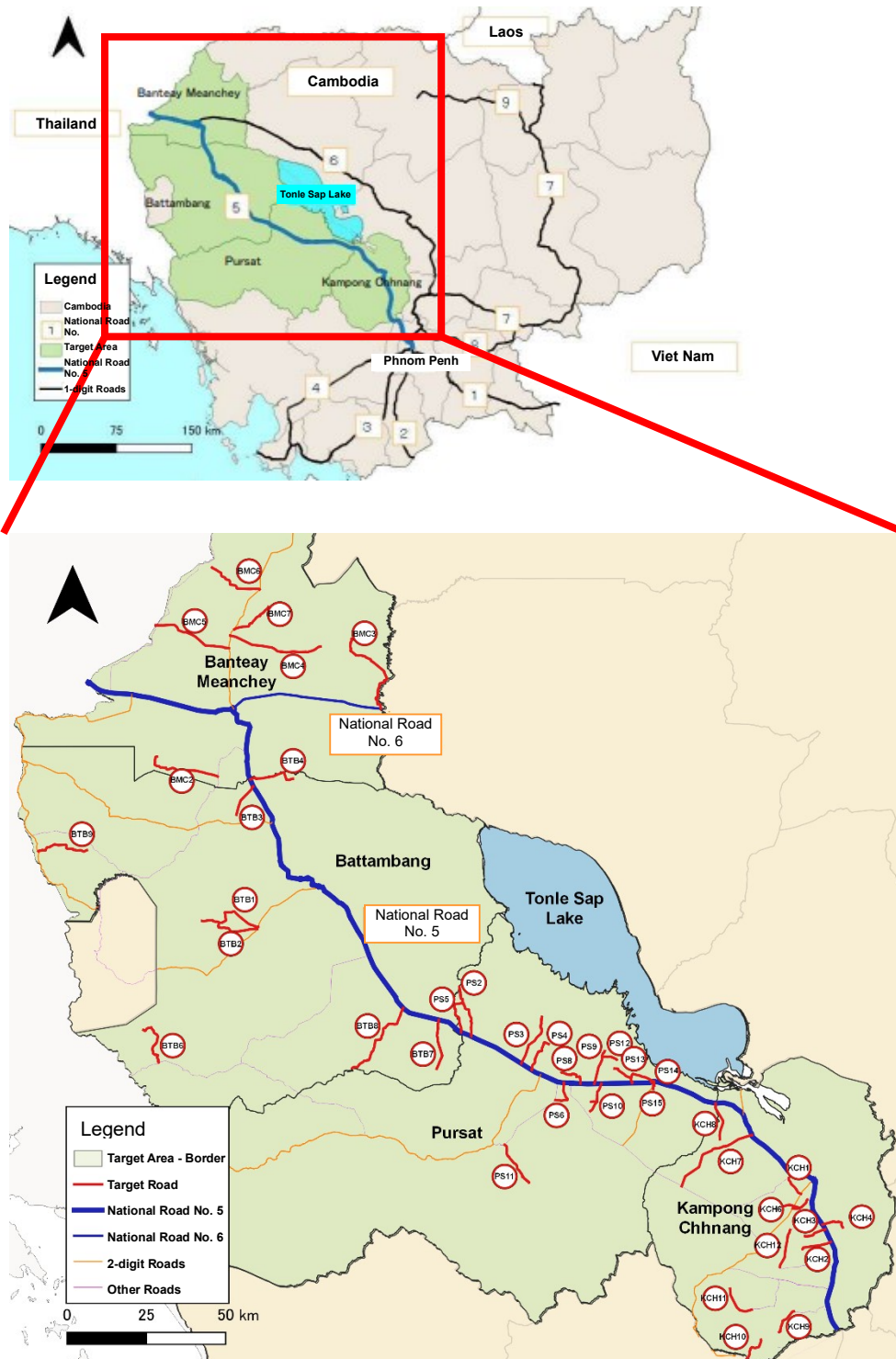
Ex-post evaluation to be conducted two years after project completion.

END

Annex: Rural Road Connectivity Improvement Project Map

Annex:

Rural Road Connectivity Improvement Project Map



Source: JICA “Final Report on Data Collection Survey on Rural Road Connectivity Improvement in Cambodia, Summary” (February 2023)