Ex-Ante Evaluation (for Japanese ODA Loan)

South Asia Division 1, South Asia Department

Japan International Cooperation Agency

1. Name of the Project

（１） Country: India

（２） Project Title: North East Road Network Connectivity Improvement Project (Phase 7)

（３） Project Site/ Target Area: State of Meghalaya (Total Population: about 2.96 million (2011))

Loan Agreement: February 20, 2024

2. Background and Necessity of the Project

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

In India, the National Highway Development Project (hereinafter referred to as “NHDP”) was initiated by the Ministry of Road Transport and Highways (hereinafter referred to as “MoRTH”) in 1998. Under this project, major arterial roads connecting major cities including the Golden Quadrilateral that links the capital Delhi, Mumbai in the west, Kolkata in the east, and Chennai in the southeast have been developed. In 2018, development of the main arterial roads was steadily under way, including the completion of road construction work on the entire section planned in 1998 (7,522km).

On the other hand, the pavement ratio of all rads in the northeast region (States of Arunachal Pradesh, Assam, Sikkim, Tripura, Nagaland, Manipur, Mizoram, and Meghalaya) is 36.0% (relative to the national average of 72.0%), the ratio of two-way two-or-more-lane roads among national roads is 48.0% (relative to 70.9%) (Basic Road Statistics of India 2018-2019). Slope protection works and drainage channels for landslide protection have not been developed in many areas. This delay in road development has impeded the stable flow of people and materials within the region and with other regions in and outside of India, which is attributable to the delay in economic development. In fact, Meghalaya's per capita GDP (2019-2020, latest available data) is 81,098 Indian rupees, well below the national average of 114,958 Indian rupees (Statistic data, Reserve Bank of India), and the Government of India has identified the reduction of regional disparities as one of its top priorities.

The Government of India is promoting the construction of national highways between major cities in the region through “Special Accelerated Road Development Program for North-East” as a means of promoting socio-economic development and reducing disparities in the northeast region. In particular, the

Gelephu-Dalu Corridor, which runs through Bhutan, India, and Bangladesh, is essential from both political and economic perspectives to improve connectivity with other regions of India and neighboring countries. JICA has contributed to the formation of the Corridor by constructing National Highway 51 (between Dalu, Meghalaya, bordering Bangladesh, and Tura, Meghalaya) in “North East Road Network Connectivity Improvement Project (Phase 1)”, the Dhubri-Phulbari Bridge in “North East Road Network Connectivity Improvement Project (Phase 3)”, and the national highway from the Dhubri-Phulbari Bridge to Srirampur, the major trunk road across India and connecting to the East-West Corridor (National Highway 31C) in “North East Road Network Connectivity Improvement Project (Phase 5)”. However, National Highway 127B (between Phulbari and Goeragre in Meghalaya) is the missing link in the Corridor due to its narrow road width and poor road surface condition, so there is a high demand of improving the national highway.

The “North East Road Network Connectivity Improvement Project (Phase 7)” (hereafter referred to as the "Project") will form part of the Gelephu-Dalu Corridor that connects the northeast region of India to Bhutan and Bangladesh by improving National Highway 127B from Phulbari to Goeragre in Meghalaya State. This will enhance connectivity within the region and with other regions both domestically and internationally, and will contribute to the realization of the aforementioned Indian government policy, making it an important project in the road sector in India.

（２）Japan’s and JICA’s Policy Cooperation and Operations in the Road Sector/ Northeast Region (especially in relation to key foreign policies such as the Free and Open Indo-Pacific Partnership (FOIP))

Country Assistance Policy for India (March 2016) formulated by the Government of Japan, stipulates that the country will "develop the critical infrastructure necessary to ensure continued investment and high growth amid the need to achieve inclusive and stable high economic growth." The Policy also identifies "reinforcement of connectivity" as a priority area. With a view to eliminating infrastructure bottlenecks with respect to investment and economic growth, the Policy will support the development of transport infrastructure so as to strengthen connectivity among major industrial cities, economic zones, and regions in the country.

The Project will also contribute to resolving infrastructure bottlenecks to investment and growth in “strengthening connectivity,” which is identified as a

priority area in JICA Country Analysis Paper for India (March 2018), and the Project is consistent with these policies and analyses.

Furthermore, the Project is expected to contribute to the pursuit of economic prosperity in the “Free and Open Indo-Pacific (FOIP)” from the perspective of improving connectivity within and beyond the region. In addition, the Project is consistent with Japan's key foreign policies, such as pursuing cooperation to promote connectivity in the northeast region, as confirmed at the Japan-India Summit in March 2022, and launching “Japan-U.S.-Australia-India (QUAD) Infrastructure Partnership” and promoting sustainable infrastructure development through technical assistance, as announced at the QUAD Summit in September 2021.

（３）Other Donors’ Activities

The World Bank (WB) is financing the Assam State Highway Project (State Highway 46) (March 2012 to September 2019) and the Mizoram State Roads Project (June 2014 to April 2021) in the northeast region. The WB is also providing support (total project cost: US$150 million) to improve connectivity and further develop agriculture and tourism in Meghalaya by repairing and upgrading National Highway 17, State Highway 12, and State Highway 2 in Assam and National Highway 17, State Highway 127, and other roads in Meghalaya through the Meghalaya Integrated Transport Project launched in October 2020.

The Asian Development Bank (ADB) is financing road improvement in the northeast region through the North Eastern State Roads Investment Program Tranche 1 (October 2012 to December 2016) and Project 2 (May 2014 - June 2021). ADB also supports the strengthening of domestic and regional trade corridors (such as Bangladesh-China-India-Myanmar (BCIM) and Bangladesh-Bhutan-India-Nepal (BBIN)) through economic corridor development projects under the framework of South Asia Subregional Economic Cooperation.

3. **Project Description**

（１） Project Description

① Project Objective : The objective of the Project is to improve the connectivity in North Eastern Region of India as well as the connectivity with the other part of India and neighboring countries through establishing and improving National Highway 127B (Phulbari - Goeragre section) in Meghalaya state, thereby promoting regional socio-economic development.

② Project Components:

(a) National Highway 127B: Construction of a national highway between Phulbari and Goeragre, Meghalaya (total length: approx. 63 km, of which approx. 58 km to repair and widen the existing road (including bridges and drainage channels) (widening from the current 1 and 1.5 lanes to 2 lanes each way) and 5 km of new road)

(b) Consulting services (construction supervision, environmental and social considerations, etc.)

③ Project Beneficiaries (Target Groups): Direct beneficiaries (users of the improved roads: about 13 million people), Final beneficiaries (population of Meghalaya that will benefit from economic development around the improved roads: about 2.96 million people, population of the northeast region that will benefit economically from improved connectivity with neighboring countries: about 45.77 million people)

（２）Estimated Project Cost: 24,964 million yen (Japanese ODA loan: 15,561 million yen)

（３）Schedule (Cooperation Period): December 2022 to October 2031 (107 months in total) The Project completion is defined as the start of facility service (October 2026)

（４）Project Implementation Structure

１）Borrower: President of India

２）Guarantor: N/A

３）Executing Agency: Meghalaya Public Works Department (MPWD)

４）Operation and maintenance system: MPWD

（５）Collaboration and Sharing of Roles with Other Donors: N/A

（６）Environmental and Social Consideration

① Category: A

② Reason for Categorization: The Project falls under the sensitive characteristics listed in “JICA Guidelines for Environmental and Social Considerations” (promulgated in April 2010).

③ Environmental Permit: An Environmental Impact Assessment (EIA) report for the Project has already been prepared by MPWD in June 2022 based on “JICA Guidelines for Environmental and Social Considerations” and approved by MPWD in July 2022, although it is not required under the domestic law in India.

④ Anti-pollution measures: During construction, there are concerns

about certain impacts on air quality, water quality, waste, and noise and vibration, but mitigation measures will be taken, including water sprinkling, waste disposal at a government-designated disposal site, maintenance of heavy construction equipment, and installation of soundproof walls. When the facilities are in use, appropriate measures will be taken for air quality, such as planting trees that absorb air pollutants such as dust, and for noise and vibration, limiting the use of whistles, etc., and monitoring will be conducted in accordance with the plan.

⑤ Natural environment: The nearest protected area from the Project site is the Nokrek National Park, but it is approximately 10 km away from the closest point of the Project site and is not subject to a wildlife clearance or forestry permit, as it does not meet the requirements for obtaining a permit for a protected area as stipulated in the Environmental Law and other related laws.

⑥ Social environment: The Project involves land acquisition of approximately 140 ha and involuntary resettlement of 107 households (524 people), and land acquisition, compensation, and support will be provided based on the land acquisition and resettlement plan prepared in accordance with the country's domestic procedures and "JICA Guidelines for Environmental and Social Considerations". The Project site is inhabited by Scheduled Tribes, which are classified as minorities under the Constitution of India. The Scheduled Tribe does not meet some of the four characteristics of Indigenous peoples listed in the World Bank's Operational Policy (OP) 4.10, such as collective attachment to and heavy dependence on land, and cultural, economic, social, and political divergence between the Scheduled Tribe and others in the Project area (all requirements must be met). For the Scheduled Tribe, consideration has been made in the community consultations, resettlement, and livelihood restoration support measures, etc. No specific opposition to the implementation of the Project has been identified during the community consultations on the Project.

⑦ Other/Monitoring: During construction, the 5-year post-project operation and maintenance and warranty period, contractors, etc. will monitor air quality, water quality, waste, noise, soil erosion, etc. under the supervision of PIU. After the maintenance and warranty period, MPWD

will conduct monitoring for each item. The land acquisition and resettlement will be implemented mainly by Municipality of West Garo District in Meghalaya, and will be monitored by MPWD and PIU.

（７） Cross-Sectoral Issues:

① Climate change response: Although traffic volume is expected to increase through the Project, the improved mobility is expected to reduce greenhouse gas (GHG) emissions by an average of 5,989 tons per year, thereby contributing to climate change mitigation.

② Measures against infectious diseases: As part of efforts to prevent the spread of the novel coronavirus infection, a list of measures (36 in total) to be implemented during the formation and implementation of the Project was agreed. This agreement has clarified relevant activities including development of epidemic prevention materials and equipment, improvement of the working environment including the code of conduct, work supervision, and awareness raising. Appropriate monitoring with a constant focus on the impact of the novel coronavirus will be made through the project implementation stage by receiving quarterly reports on the status of implementation of these items from the implementing agency in order to allow the implementing agency to take flexible and suitable actions. In addition, HIV/AIDS measures for construction workers will be implemented by construction contractors during the construction phase.

（８） Gender Category: 【Gender Project】 GI （S） Gender Informed (Significant)

< Details of Activities/ Reason for Categorization> The Project will implement HIV/AIDS countermeasures for construction workers, and will also take concrete measures from a gender perspective to improve the working environment for female workers and address issues such as sexual harassment. The Project will promote the employment of women in construction works and PIUs, as well as gender-oriented efforts such as equal compensation regardless of gender and priority access to livelihood restoration support measures for single parent households. For these reasons, the Project is classified as a “gender activity integration project”.

（９） Other Important Issues: None

4. Targeted Outcomes

（１）Quantitative Effects

１）Outcomes (Operation and Effect Indicators)

Indicator	Subject section /Vehicle type	Baseline (2022)	Target (2028) (2 years after project completion】
Average travel time (minutes)	Phulbari-Goeragre (passenger cars)	146	68
Average travel cost (rupees/km)	Phulbari-Selsella (passenger cars)	15.35	9.90
	Phulbari-Selsella (trucks)	33.83	25.14
	Selsella-Goeragre (passenger cars)	18.13	10.55
	Selsella-Goeragre (trucks)	38.10	25.03
Annual average daily traffic volume (PCU (Note 1)/day)	Phulbari-Selsella	4,500	6,100 (Note 2)
	Selsella-Goeragre	2,750	3,700 (Note 2)
Number of passengers (thousands of passengers/year)	Phulbari-Selsella	5,615	7,516 (Note 2)
	Selsella-Goeragre	4,188	5,623 (Note 2)
Cargo volume (thousand tons/year)	Phulbari-Selsella	79	109 (Note 2)
	Selsella-Goeragre	110	146 (Note 2)

Note 1: Number of passenger car equivalents

Note 2: The figures take into account the diverted traffic of vehicles previously traveling on National Highway 31 in Assam, etc., through the Dhubri Phulbari Bridge, which is under construction under “North East Road Network Connectivity Improvement Project (Phase 3)”, after the bridge is opened.

（２）Qualitative Effects: Improve connectivity with outside India and promote economic development in the northeast region

（３）Internal Rates of Return:

Based on the assumptions listed below, the economic internal rate of return (EIRR) for the Project is 10.5%. Since the Project does not collect tolls and does not generate revenue, the financial internal rate of return (FIRR) is not calculated.

【EIRR】

Cost: Construction costs, operation and maintenance costs (both excluding taxes)

Benefits: Effects of reducing vehicle running costs and travel time costs

Project Life: 35 years

5. External Factors and Risk Control

（１） Preconditions: None

（２） External Factors: The security in the Project area shall not deteriorate significantly.

6. Lessons Learned from Past Projects

From the Ex-post evaluation of the “R&M of Bridges along Arterial Roads Project” (evaluation year: FY2005), an ODA loans to the Republic of Philippines, a lesson was learned that if the executing agency and the construction supervision consultants confirm the appropriateness of the construction period considering the rainy and dry seasons, construction can be completed within a reasonable period and the impact of natural disasters can be minimized. Since West Garo Hills District of Meghalaya, where the Project will be implemented, is a high-rainfall area with an annual rainfall of 3,300 mm, JICA and the executing agency agreed on a schedule that considers the rainy season.

7. Evaluation Results

The Project is consistent with India's development agenda and policies, as well as Japan's and JICA's cooperation policies and analysis, and will also contribute to SDGs Goal 3 (Ensure healthy lives and promote well-being for all at all ages (halve the number of global deaths and injuries from road traffic accidents)), Goal 8 (Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all), Goal 9 (Build resilient infrastructure), and Goal 13 (Combat climate change). Therefore, there is a strong need to support the implementation of the Project.

8. Plan for Future Evaluation

（１） Indicators to be Uses

As described in Section 4. (1) to (3).

（２） Future Evaluation Schedule

Ex-post evaluation: 2 years after the project completion

END

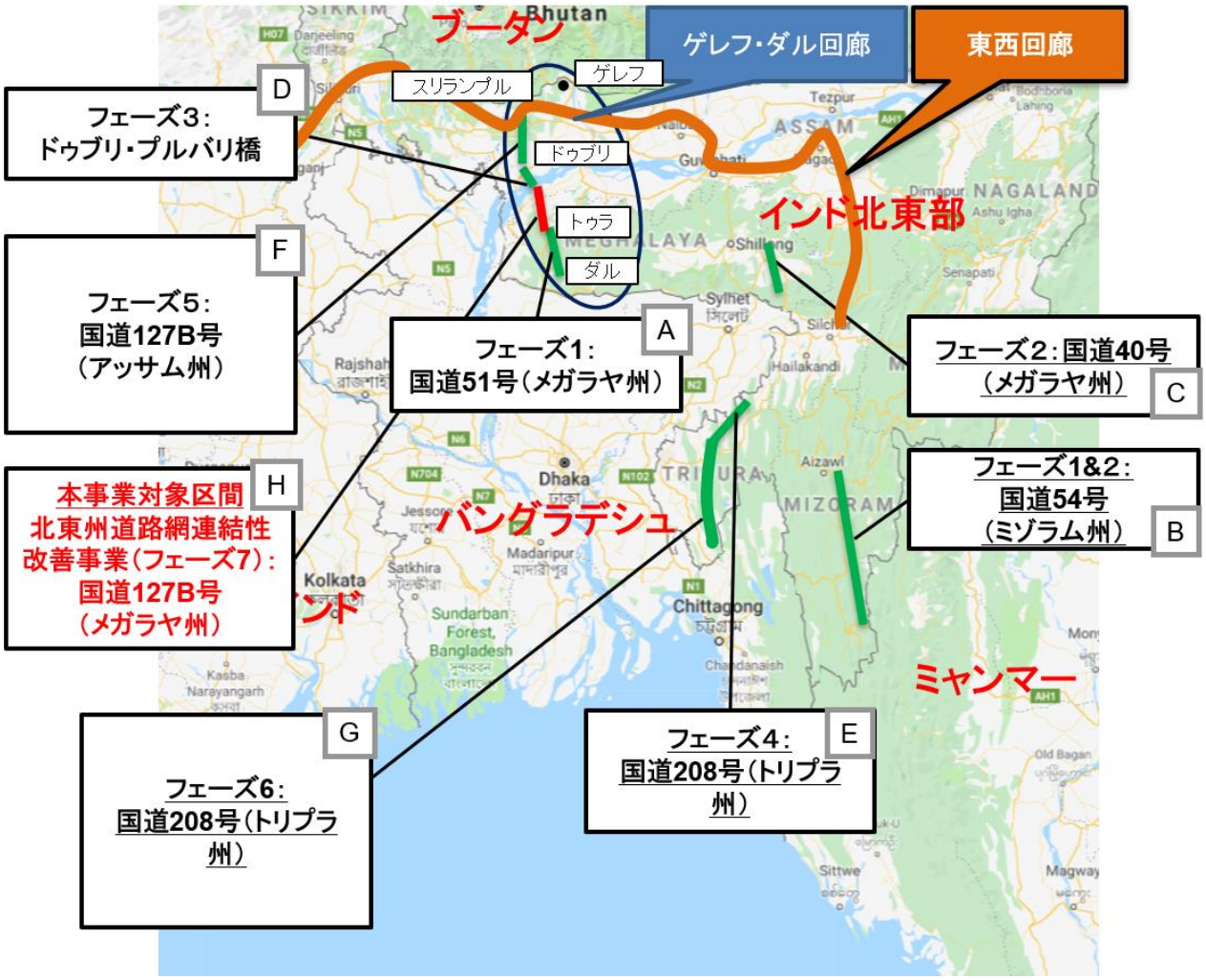
Appendix: Map of “North East Road Network Connectivity Improvement Project (Phase 7)”

Appendix

Map: North East Road Network Connectivity Improvement Project (Phase 7)

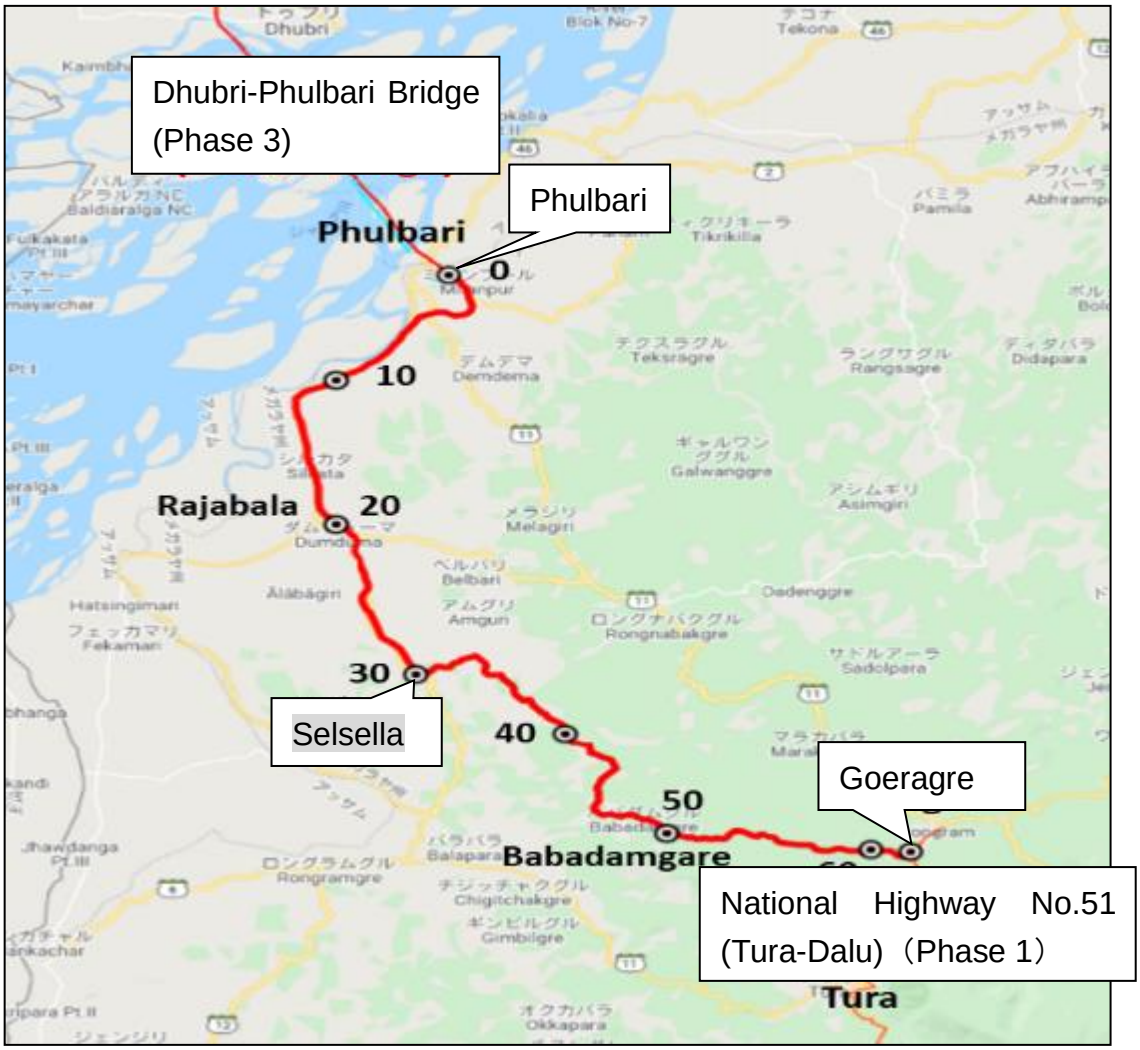
Project Overview Map (including preceding phase projects)

Enlarged Map



(Source: Created by JICA based on www.google.com)

Enlarged map of the routes of the Project



(Source: Created by JICA based on www.google.com)