

# **Appendices**



## Appendix 1 Organizations Visited during the Country Visits

### Bangladesh

Date	Time	Organization	Type
8-Sep	9:00 AM	JICA Bangladesh Office	Others
8-Sep	11:00 AM	ADB Transport	Development Partner
8-Sep	3:00 PM	Economic Relations Division, Ministry of Finance	Government Agency
8-Sep	3:30 PM	Japan-Bangladesh Chamber of Commerce and Industries	Others
9-Sep	9:00 AM	JICA Bangladesh Office	Others
9-Sep	10:00 AM	Capital Freight	Others
9-Sep	10:00 AM	Export Promotion Bureau, Ministry of Commerce	Government Agency
9-Sep	11:00 AM	Bangladesh Customs Department	Government Agency
9-Sep	11:00 AM	International Union for Conservation of Nature and Natural Resources	Others
9-Sep	11:30 AM	Access Freight	Others
9-Sep	3:00 PM	Bangladesh Freight Forwarders Association	Others
9-Sep	3:00 PM	Ministry of Local Government, Rural Development, and Cooperatives, Rural Development and Cooperatives Division	Government Agency
9-Sep	3:30 PM	Ministry of Industries	Government Agency
9-Sep	4:00 PM	Embassy of Japan	Others
9-Sep	5:00 PM	JETRO Bangladesh Office	Others
10-Sep	9:00 AM	Centre for Policy Dialogue	Others
10-Sep	10:30 AM	Ministry of Land	Government Agency
10-Sep	11:00 AM	Roads and Highways Department	Government Agency
10-Sep	11:00 AM	Dhaka Chamber of Commerce and Industries	Others
10-Sep	1:00 PM	Ministry of Communication	Government Agency
10-Sep	12:30 PM	Metropolitan Chamber of Commerce and Industry, Dhaka	Others
10-Sep	2:00 PM	Federation of Bangladesh Chamber of Commerce and Industries	Others
10-Sep	2:30 PM	Hanjin Shipping Co., Ltd.	Others
10-Sep	3:00 PM	Bangladesh Land Port Authority	Government Agency
10-Sep	4:00 PM	Mediterranean Shipping Company	Others
10-Sep	4:30 PM	Bangladesh Railway	Government Agency
11-Sep	9:00 AM	Chittagong Port Authority	Government Agency
11-Sep	10:00 AM	Ministry of Planning	Government Agency
11-Sep	11:00 AM	YKK Group	Others
11-Sep	11:00 AM	Bangladesh Institute of Development Studies	Others
11-Sep	11:30 AM	Bangladesh Institute of International and Strategic Studies	Others
11-Sep	2:00 PM	Customs	Government Agency
11-Sep	3:00 PM	Nippon Express (Nittsu)	Others
11-Sep	5:00 PM	JICA Industry	Others
11-Sep	5:30 PM	JICA Bangladesh Office	Others
11-Sep	6:00 PM	JETRO Bangladesh Office	Others
12-Sep	9:00 AM	Navana Group	Others
12-Sep	10:00 AM	Bangladesh Land Port Authority (Akhaura)	Government Agency
12-Sep	11:00 AM	A.K. Khan & Company Ltd.	Others
12-Sep	12:00 PM	India-Bangladesh Chamber of Commerce and Industry	Others
12-Sep	3:00 PM	Bangladesh Road Transport Authority	Government Agency
13-Sep	10:00 AM	Bangladesh Land Port Authority (Tamabil)	Government Agency
17-Nov	11:00 AM	Power and Participation Research Centre	Others

Date	Time	Organization	Type
17-Nov	2:30 PM	Board of Investment	Others
19-Nov	2:00 PM	Bangladesh Institute of Development Studies	Others
20-Nov	2:00 PM	Ministry of Industries	Government Agency
24-Nov	9:00 AM	Ministry of Communication	Government Agency
24-Nov	2:00 PM	World Bank	Development Partner
24-Nov	4:00 PM	JICA Bangladesh Office	Others
25-Nov	10:00 AM	Roads and Highways Department	Government Agency
25-Nov	-	Narayangunj	Others
28-Nov	5:00 PM	Private Sector Forwarder	Others

#### Bhutan

Date	Time	Organization	Type
28-Oct	9:00 AM	JICA Bhutan Office	Others
28-Oct	11:00 AM	World Bank (Transport and Environment)	Development Partner
28-Oct	2:00 PM	Bhutan Chamber of Commerce and Industry (BCCI)	Others
28-Oct	2:00 PM	Ministry of Home and Cultural Affairs	Government Agency
28-Oct	2:00 PM	National Statistics Bureau	Government Agency
28-Oct	3:00 PM	Ministry of Foreign Affairs	Government Agency
28-Oct	3:00 PM	State Trading Corporation of Bhutan	Others
29-Oct	10:00 AM	Department of Revenue and Customs, Ministry of Finance	Government Agency
29-Oct	11:00 AM	Department of Roads, Ministry of Works and Human Settlement	Government Agency
29-Oct	9:00 AM	Department of Forest, Ministry of Agriculture and Forests	Government Agency
29-Oct	11:00 AM	Bhutan Post	Others
29-Oct	12:00 PM	Ministry of Economic Affairs, Department of Trade	Government Agency
29-Oct	2:00 PM	DHL Express	Others
29-Oct	2:00 PM	Ministry of Information and Communications, Policy Planning Division	Government Agency
29-Oct	2:00 PM	National Environmental Commission	Others
29-Oct	3:00 PM	Leko Peckers	Others
30-Oct	-	Phuentsholing-Jaigaon Border Visit	Government Agency
31-Oct	-	Banglabandha Border Visit	Government Agency

#### India

Date	Time	Organization	Type
2-Sep	9:00 AM	JICA India Office	Others
2-Sep	11:30 AM	Research and Information System for Developing Countries (RIS)	Others
2-Sep	5:00 PM	Embassy of Japan	Others
3-Sep	9:00 AM	World Bank (Transport)	Development Partner
3-Sep	9:00 AM	World Bank (Environment)	Development Partner
3-Sep	10:15 AM	Indian Institute of Foreign Trade (IIFT), Department of Commerce, Ministry of Commerce and Industry	Government Agency
3-Sep	1:00 PM	ADB Transport	Development Partner
3-Sep	1:00 PM	ADB Environment	Development Partner
3-Sep	3:00 PM	Ministry of Development of North Eastern Region (and North Eastern Council Secretariat) with Joint Secretary	Government Agency
3-Sep	4:00 PM	Ministry of Development of North Eastern Region (and North Eastern Council Secretariat) with Secretary	Government Agency

Date	Time	Organization	Type
4-Sep	11:00 AM	Ministry of Home Affairs (Land Port Authority, Department of Border Management)	Government Agency
4-Sep	11:00 AM	National Highways Authority of India	Government Agency
4-Sep	2:00 PM	Japan Chamber of Commerce and Industry in India	Others
4-Sep	3:00 PM	Ministry of Road Transport and Highways	Government Agency
5-Sep	12:00 PM	Ministry of Environment and Forests	Government Agency
5-Sep	2:00 PM	JICA Environment	Others
5-Sep	3:00 PM	Ministry of Road Transport and Highways	Government Agency
5-Sep	4:30 PM	Ministry of Railways	Government Agency
5-Sep	5:00 PM	Ministry of Shipping	Government Agency
6-Sep	11:00 AM	International Union for Conservation of Nature and Natural Resources	Others
6-Sep	11:30 AM	UNESCAP Transport	Development Partner
6-Sep	12:30 PM	Department of Industrial Policy & Promotion	Government Agency
6-Sep	1:00 PM	Central Board of Excise and Customs (under Ministry of Finance, Department of Revenue)	Government Agency
17-Oct	11:30 AM	Federation of Freight Forwarders Association, B G. Somadder & Sons (P) Ltd	Others
17-Oct	11:30 AM	Kolkata Port Trust	Others
21-Oct	3:00 PM	Calcutta Customs House Agent Association	Others
4-Nov	3:00 PM	Department of Works and Housing, Nagaland State Government	Government Agency
5-Nov	11:00 AM	Department of Planning and Coordination, Nagaland State Government	Government Agency
5-Nov	11:30 AM	Indian Institute of Foreign Trade	Others
5-Nov	1:00 PM	Department of Transport, Nagaland State Government	Government Agency
5-Nov	-	Site Visit in Nagaland	-
6-Nov	9:30 AM	Mitsui & Co., Ltd.	Others
7-Nov	9:30 AM	Itochu Corporation	Others
7-Nov	11:30 AM	JETRO India	Others
7-Nov	5:00 PM	Department of Public Works, Mizoram (Roads Division)	Government Agency
8-Nov	10:00 AM	Department of Transport, Mizoram State Government	Government Agency
8-Nov	2:00 PM	Truck Terminal	Others
8-Nov	2:00 PM	Japan Chamber of Commerce & Industry in India	Others
8-Nov	-	Site Visit in Mizoram	-
11-Nov	11:30 AM	Sojitz Corporation	Others
11-Nov	-	Site Visit in West Bengal	-
12-Nov	10:00 AM	Customs Broker	Others
12-Nov	11:00 AM	CCT [Logistics] Group Ltd.	Others
12-Nov	3:00 PM	Department of North Bengal Development, West Bengal State Government	Government Agency
12-Nov	3:00 PM	Special Economic Zone (East and North East Region), Ministry of Commerce and Industry	Government Agency
12-Nov	5:00 PM	Bhabani Roadways	Others
12-Nov	3:00 PM	Directorate General of Foreign Trade	Government Agency
13-Nov	10:30 AM	Federation of Indian Export Organization	Others
13-Nov	1:30 PM	Directorate General of Commercial Intelligence & Statistics	Government Agency
13-Nov	10:30 AM	Commercial Tax Department, West Bengal Government	Government Agency
14-Nov	11:00 AM	Haldia Port	Others

Date	Time	Organization	Type
14-Nov	-	Site Visit in Tripura	-
15-Nov	10:30 AM	Chief Secretary of Tripura	Government Agency
15-Nov	11:00 AM	Public Works Department, Tripura State Government	Government Agency
15-Nov	12:00 PM	Transport Department, Tripura State Government	Government Agency
15-Nov	1:00 PM	Directorate General of Industry and Commerce, Tripura State Government	Government Agency
15-Nov	5:00 PM	Integrated Check Point in Agartala	Government Agency
18-Nov	2:00 PM	Public Works Department, Manipur State Government, ADB Project Director	Government Agency
18-Nov	5:00 PM	Public Works Department, Manipur State Government,,Principal Secretary	Government Agency
19-Nov	11:00 AM	University of Manipur	Others
20-Nov	2:00 PM	North Eastern Council	Government Agency
21-Nov	10:00 AM	Public Works Department, Meghalaya State Government, Secretary	Government Agency
21-Nov	11:00 AM	Public Works Department, Assam State Government, Commissioner	Government Agency
21-Nov	1:00 PM	Public Works Department, Meghalaya State Government, Chief Engineer	Government Agency
21-Nov	3:30 PM	Commercial Tax Department, Assam State Government	Government Agency
22-Nov	11:00 AM	Public Works Department, Assam State Government, Engineer	Government Agency
22-Nov	2:00 PM	Public Works Department, Assam State Government	Government Agency

#### Myanmar

Date	Time	Organization	Type
9-Sep	9:30 AM	Greater Mekong Initiative	Others
9-Sep	11:00 AM	JETRO Myanmar Office	Others
9-Sep	2:00 PM	Japanese Company E (Trading Company)	Others
9-Sep	6:00 PM	Japanese Company F (Trading Company)	Others
10-Sep	10:00 AM	Japanese Company G (Logistics Company)	Others
10-Sep	3:15 PM	Japanese Company H (Trading Company)	Others
11-Sep	10:00 AM	Directorate of Investment and Company Administration	Others
11-Sep	1:00 PM	Union of Myanmar Federation of Chambers of Commerce and Industry	Others
12-Sep	10:00 AM	International Finance Corporation	Others
12-Sep	1:00 PM	Myanmar Agribusiness PCL	Others
13-Sep	10:00 AM	Myanmar Industrial Port Terminal	Others
13-Sep	1:30 PM	Japanese Company I (Trading Company)	Others
4-Nov	2:00 PM	Myanmar International Freight Forwarders Association	Others
6-Nov	3:00 PM	Team Leader, JICA Myanmar Transport Master Plan Study	Others
7-Nov	8:30 AM	ADB Myanmar	Development Partner
7-Nov	3:30 PM	Ministry of Rail Transportation	Government Agency
8-Nov	11:00 AM	Ministry of Transport, Ministry of Construction (Public Works), and Myanmar Railways	Government Agency

### Nepal

Date	Time	Organization	Type
13-Sep	5:00 PM	JICA Nepal Office	Others
15-Sep	11:00 AM	Nepal Freight Forwarders Association	Others
15-Sep	11:00 AM	Ministry of Health and Population	Government Agency
15-Sep	11:00 AM	International Economic Coordination Division, Ministry of Finance	Government Agency
15-Sep	1:00 PM	Apollo Cargo	Others
15-Sep	1:00 PM	Trade Promotion Centre	Government Agency
15-Sep	3:00 PM	Nepal Intermodal Transport Development Board, Ministry of Commerce	Government Agency
15-Sep	3:00 PM	Himalayan Terminals	Others
16-Sep	9:15 AM	International Union for Conservation of Nature and Natural Resources	Others
16-Sep	11:00 AM	SAARC Secretariat	Development Partner
16-Sep	11:00 AM	Ministry of Science, Technology and Environment	Government Agency
16-Sep	11:00 AM	New York Cargo	Others
16-Sep	1:00 PM	World Bank Transport	Development Partner
16-Sep	1:00 PM	World Bank Environment	Development Partner
16-Sep	3:30 PM	Department of Customs, Ministry of Finance	Government Agency
16-Sep	3:30 PM	Ministry of Land Reform and Management	Government Agency
17-Sep	10:00 AM	Federation of Nepalese Chambers of Commerce and Industry	Others
17-Sep	10:30 AM	National Planning Commission	Government Agency
17-Sep	11:00 AM	Department of Railways, Ministry of Physical Planning, Works and Transport Management	Government Agency
17-Sep	12:00 PM	Department of Roads, Ministry of Physical Planning, Works and Transport Management	Government Agency
17-Sep	2:00 PM	Ministry of Physical Planning, Works and Transport Management	Government Agency
17-Sep	2:00 PM	Central Bureau of Statistics, National Planning Commission	Government Agency
17-Sep	2:00 PM	Public Freight	Others
17-Sep	3:30 PM	ADB Transport	Development Partner
17-Sep	4:00 PM	Confederations of Nepalese Industries	Others
18-Sep	11:30 AM	Nepal Foreign Trade Association	Others
19-Sep	10:45 AM	Export Promotion Board, Ministry of Commerce and Supplies	Government Agency
19-Sep	11:30 AM	Ministry of Federal Affairs and Local Development	Government Agency
19-Sep	12:00 PM	Ministry of Foreign Affairs	Government Agency
19-Sep	3:00 PM	South Asia Watch on Trade, Economics and Environment	Others
19-Sep	3:30 PM	Industrial Promotion Board, Ministry of Industry	Government Agency

### Thailand

Date	Time	Organization	Type
16-Sep	9:00 AM	JETRO Thai Office (SME Promotion)	Others
16-Sep	11:00 AM	JETRO Thai Office (Public Relations)	Others
16-Sep	1:30 PM	National Economic and Social Development Board	Others
16-Sep	4:00 PM	Endo Lighting Thailand	Others
17-Sep	10:00 AM	Federation of Thai Industry	Others
17-Sep	2:00 PM	Thai Chamber of Commerce	Others
18-Sep	10:00 AM	Thai India Chamber of Commerce	Others
19-Sep	10:00 AM	Nissan	Others
19-Sep	1:30 PM	Nipro (Thailand) Ltd.	Others
19-Sep	4:00 PM	Yanmar Co., Ltd.	Others

<b>Date</b>	<b>Time</b>	<b>Organization</b>	<b>Type</b>
23-Sep	9:00 AM	International Union for Conservation of Nature and Natural Resources	Others
23-Sep	2:00 PM	Thai Airfreight Forwarder Association	Others
24-Sep	10:00 AM	Thai International Freight Forwarders Association	Others
25-Sep	9:00 AM	JICA Bangkok Office	Others
25-Sep	10:30 AM	World Customs Organizations	Development Partner
26-Sep	10:00 AM	UNESCAP Transport	Development Partner
26-Sep	11:00 AM	Ministry of Social Development and Human Security	Government Agency
26-Sep	1:30 PM	Kintetsu World Express Thailand	Others
26-Sep	2:00 PM	Asian Development Bank, Transport	Development Partner
26-Sep	4:00 PM	World Bank, Transport	Development Partner
27-Sep	9:00 AM	Office of Natural Resources and Environmental Policy and Planning	Government Agency
28-Nov	10:00 AM	National Economic and Social Development Board	Government Agency
28-Nov	2:00 PM	Department of Highways	Government Agency



## Appendix 2a Summary of Proceedings of the First Seminar

### The First Seminar on the JICA Survey on Transport Infrastructure Development for Regional Connectivity in and around South Asia New Delhi, India, 16 January 2014

#### SUMMARY OF PROCEEDINGS

##### I. Introduction

1. The First Seminar (hereinafter the “Seminar”) on the JICA [Japan International Cooperation Agency] Survey on Transport Infrastructure Development for Regional Connectivity in and around South Asia (hereinafter “the Survey”) was held in New Delhi, India, on 16 January 2014. Senior executives in the public and private sectors, the academic and research community, and international development partner organizations attended the Seminar. The seminar program is provided as **Appendix 1** and the list of participants as **Appendix 2**.

2. The rapid economic growth in South Asia and various development movements in Southeast Asia including establishment of an ASEAN [Association of Southeast Asian Nations] Economic Community by 2015 have generated momentum for enhancing regional connectivity both within South Asia and between South Asia and Southeast Asia. In this context, JICA initiated a data collection survey in August 2013 to better understand the current situation and identify the potential and prospects for regional inland transport infrastructure development in South Asia.

3. The aim of the Seminar was to present the draft (interim) survey findings and obtain comments and inputs from diverse stakeholders with a view to enhancing and improving the Survey. Specific aspects presented included: (i) background, (ii) road and rail infrastructure, (iii) logistics and cross-border facilities, and (iv) soft infrastructure.

4. The Seminar was directed by senior JICA staff members, led by Mr. Toru Arai, Director General, South Asia Department, JICA.

##### II. Session 1: Opening

5. Mr. Tamaki Tsukada, Minister (Economic and Development), Embassy of Japan in India, opened the Seminar by warmly welcoming all participants. He explained that Japan is interested in regional connectivity in South Asia because it serves Japan’s growth strategy. Japanese companies operate with highly integrated supply chains across the region. For example, there are many Japanese automotive companies operating in India, but they import many of their components from ASEAN countries. Connectivity between ASEAN and India is therefore crucial for them to be productive. Also, he observed that regional cooperation is a natural attribute of any important bilateral relationship. The partnership of Japan and India will become stronger if the two countries work together in the regional context. As a natural outcome of megaprojects assisted by JICA, it is necessary to expand the horizon further to encompass the economic integration of South Asia and ASEAN. He shared the example of Japanese assistance for transport infrastructure in the Mekong Region, which led to a dramatic increase in the number of Japanese companies operating in the region – this is the kind of vision or scenario Japan has in mind regarding connectivity in South and Southeast Asia. He expressed his wish to see cooperation between Japan and India (and other countries in the region) using the existing regional frameworks including the South Asia Association for Regional Cooperation (SAARC) and ASEAN. He called for a focus on road connectivity (e.g., the ongoing India-Myanmar-

Thailand Trilateral Highway project) and the development of less developed areas (i.e., North East India, Bangladesh, Bhutan, and Nepal), considering that inclusive growth is an important component of regional development. Lastly, he referred to “connectivity of the seas”, with South Asia and ASEAN connected across the Bay of Bengal; he noted opportunities to develop port facilities, e.g., in Tamil Nadu and Chennai, where there is a concentration of Japanese automotive industries. He welcomed today’s initiative by JICA and thanked the countries of the region for their participation. In the forthcoming summit meeting between Japan and India, this topic will be an important agenda item to be discussed by the two leaders.

6. Mr. Sanjiv Ranjan, Joint Secretary (DPA [Development Partner Administration]-III), Ministry of External Affairs, Government of India, noted that a couple of years ago the DPA was established to synergize India’s external assistance, including assistance to neighboring countries. Connectivity is important to unlock human potential; it allows economic agents to exploit their respective comparative advantages. Connectivity with ASEAN countries continues to be a strategic priority of India. A number of initiatives are ongoing or are under active consideration under bilateral frameworks as well as multilateral frameworks (e.g., ADB’s South Asian Subregional Economic Cooperation [SASEC] program, India-ASEAN). He highlighted certain projects, including the India-Myanmar-Thailand Trilateral Highway, linking Moreh in India and Mae Sot in Thailand. An Indian assistance project in Myanmar will by 2016 upgrade to highway standard two sections totaling 280 km well as improve about 70 bridges. He also mentioned the Kaladan Multimodal Transport and Transit Project, which commenced in 2008 with the upgrading of Sittwe Port in Rakhine and has reached an advanced stage of construction; an inland waterway terminal about 150 km upstream of Sittwe is under construction. Work on the Indian side is also ongoing. He further noted that India has several bilateral projects with Bangladesh (e.g., work in India on railway to link with Bangladesh’s railway network), Bhutan, and Nepal (e.g., two rail projects). He concurred with Mr. Tsukada that soft infrastructure (e.g., motor vehicle regulations, sanitary-phytosanitary [SPS] requirements) is important and needs to be addressed along with hard infrastructure; he stated that it is useful to look at these issues when projects are conceived so that they can be properly reflected. He also observed that regional connectivity requires considerable coordination given the multiplicity of ongoing initiatives; there is a need to assure that projects in one country are aligned with projects in neighboring countries. Finally, he urged a pragmatic approach regarding financing and the economic viability of regional connectivity projects.

7. Mr. C. Kandasamy, Director General (Road Development) and Special Secretary, Ministry of Road Transport and Highways, Government of India, discussed regional development corridors (e.g., Asian Highways, the Trilateral Highway), integrated check posts (with 13 proposed in the first two phases), and other initiatives (e.g., the SAARC Motor Vehicle Agreement). He stated that the Indian Roads Congress in its Coimbatore Session in January 2013 adopted a resolution that roads should not only be for vehicles but also for people. He urged a focus on catalytic, mega, greenfield, elevated smart corridors, citing Kolkata–Petrapole–Dhaka–Agartala–Myanmar–Thailand as an example “with potential to inspire”. He noted the need to minimize land acquisition with three-dimensional land utilization. He called for providing multi-modal, multi-sectoral benefits to local people through “active roads”, leading to a “regional welfare community”.

8. Mr. Girish Pillai, Advisor (Infrastructure), Ministry of Railways, Government of India, observed that connectivity between people can make a large difference. He focused on rail connectivity in India’s North East Region. He noted that access to ports for North East India, Bhutan, and Nepal (to Kolkata and Chittagong) requires dramatic improvement. He also identified the need for a quantum increase in rail connectivity between South Asia and Southeast Asia. Projects of immediate concern include Agartala-Sabrum (110 km), Sabrum to Chittagong (60 km), and Belonia-Feni links. In addition, Mr. Pillai noted that the rail link

between Jiribam and Imphal has been sanctioned (approved) and will require INR 4,500 crore between Jiribam and Imphal and INR 2,500 crore between Imphal and Moreh. Also, two railway projects involving Nepal are underway (190 km in total, including a Jogbani–Biratnagar link, at a cost of INR 2,000–2,500 crore), while five lines involving Bhutan have been surveyed (e.g., a 130 km Hasimara–Phuentsholing link costing INR 3,000–4,000 crore).

9. Mr. Toru Arai, JICA, observed that the seminar participants share a strong sense that economic growth in the South Asia region will accelerate over the next 20 years, and that value chains and the movement of goods will change dramatically in terms of both modes and volumes. Enhancing regional connectivity in and around the South Asian region is therefore critical. Issues include road and railway improvements, the construction of modern border facilities, and in the area of soft infrastructure, harmonization of transport-related regulations and rules including transport agreements. Since JICA is keenly interested in being actively engaged in this important area including both hard and soft infrastructure, it has been carrying out the ongoing Survey focusing on land transport infrastructure. They have invited the Asian Development Bank (ADB), the World Bank, and others to share the findings of their work; comments during the seminar will be valuable for enhancing the final survey output, which will be presented in a final seminar to be held in Guwahati, Assam State, on 13 February 2014. In addition, Mr. Arai mentioned that in March 2014 JICA will initiate a complementary survey on strategic development of the regional maritime sector. The two studies/surveys will enable a view of the “complete picture”. In closing, he expressed his hope that the Seminar can provide a venue not only for discussion of regional connectivity, but also for broadening professional networks in this field.

### **III. Session 2: Strengthening Regional Connectivity in and around South Asia**

10. This session addressed the importance of improving regional connectivity in and around South Asia by sharing the Survey’s interim findings and lessons learned from country and development partner experiences.

11. Mr. Yuichiro Motomura, JICA Survey Team Leader and President of PADECO Co., Ltd., presented the Survey’s interim findings. He first provided some essential background, showing that South Asia is at the hub of the region and has huge potential for economic growth, and that traffic volumes will naturally follow, with associated infrastructure requirements, hard and soft. Regarding road and railway infrastructure, he showed that both the road and railway networks offer potential for enhanced connectivity. With respect to logistics and cross-border facilities, he observed that the freight transport and logistics system in the region is not well developed but can be modernized. He also stressed the need to develop soft infrastructure to promote economic growth. Since transshipment is required at most border crossings, through transport would increase efficiency. Since all of the countries have transit requirements, all of the countries can benefit from “win-win” transit arrangements. In addition, inefficient customs and border procedures can be improved. He next introduced potential projects for JICA assistance, including road and railway infrastructure projects along eight corridors, freight transport and logistics projects, and soft infrastructure projects (i.e., pilot corridor and border efficiency projects, projects at the regional level.)

12. Mr. Ronald Antonio Q. Butiong, Unit Head, South Asia Subregional Economic Cooperation (SASEC) Unit, ADB, congratulated JICA for placing high priority on developing regional infrastructure in and around South Asia, and welcomed the Survey, which will complement ADB’s support for regional cooperation projects. He explained that regional cooperation and integration (RCI) is a strategic priority and a core area of operations under ADB’s Strategy 2020. ADB’s Regional Cooperation Strategy for South Asia focuses on transport, energy, and trade facilitation, and promotes a pragmatic approach in planning, preparing, and implementing RCI projects. ADB has provided technical assistance to SAARC

and Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC), supporting, among others, the SAARC Regional Multimodal Transport Study and the BIMSTEC Transport Infrastructure and Logistics Study. Mr. Butiong explained that SASEC is ADB's main platform for supporting RCI in South Asia, including assisting priority projects identified under SAARC and BIMSTEC. ADB is supporting and plans to support SASEC road connectivity projects in Bangladesh, Bhutan, India, and Nepal, which will upgrade sections of SAARC Corridors 4 and 8, and an east-west corridor linking India and Myanmar. ADB's 2014-2016 RCI pipeline for South Asia includes road and rail projects in the SASEC countries, which will address missing links and strengthen capacities of road and rail networks in the SASEC corridors. ADB is also supporting the SASEC trade facilitation sector through a program loan to Bangladesh, Bhutan, and Nepal that will promote customs modernization reforms, national single windows, and trade portals. This is being complemented by capacity building technical assistance on trade facilitation with support from ADB, the Government of Japan (Japan Fund for Poverty Reduction), the Australian Agency for International Development (AusAID, now integrated into the Australian Department of Foreign Affairs and Trade), and the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP). Mr. Butiong stated that SASEC countries gave broad support for a SASEC Trade Facilitation Strategic Framework (2014–2018). The Framework calls for implementation of pilot projects that will yield immediate results in the areas of customs modernization, technical and SPS standards, border crossing infrastructure, and transport facilitation. Mr. Butiong concluded by noting that ADB looks forward to continued close collaboration between ADB and JICA in developing regional connectivity in and around South Asia.

13. Dr. Nagesh Kumar, Director, ESCAP South and South-West Asia Office, and Chief Economist, UNESCAP South and South-West Asia Office, noted the potential of and prospects for strengthening connectivity in South and Southwest Asia. He first discussed connectivity and the underexploited potential of regional economic integration in South and Southwest Asia. Considering that South Asia is the least integrated region in the world, there is huge potential that can be tapped with improved land transport systems. He then focused on transport corridors, noting that when networks are extended, the benefits grow proportionately (“network externalities”). When lagging regions are connected with more prosperous regions, economic activity will increase, especially in the poorer regions, which will balance regional development. Accordingly, he called for seamless connectivity across South and Southwest Asia. With extended corridors, South Asia's potential to emerge as a hub for economic activity can be realized, with each country serving as a (sub)hub. He discussed two UNESCAP proposals for integrating Economic Cooperation Organization (ECO), SAARC, and BIMSTEC transport corridors: (i) a Turkey-Iran-Pakistan-India-Bangladesh-Myanmar road corridor along Asian Highway routes; and (ii) an Istanbul-Teheran-Islamabad-Delhi-Kolkata-Dhaka container railway corridor along Trans-Asian Railway routes. Next, he listed a number of South and Southwest Asia transport corridors. He then observed that the way forward includes adopting a master plan to be developed in phases. Finally, he summarized UNESCAP activities on transport connectivity in South and Southeast Asia.

14. Mr. Atul Agarwal, Senior Transport Specialist, South Asia Sustainable Development, World Bank, presented the World Bank's experience with cross-border initiatives in and around South Asia. He first noted the potential for promoting regional and economic integration in South Asia, which is a key emphasis for the World Bank. He introduced a number of ongoing World Bank Group activities supporting economic and regional integration (e.g., the Nepal[-India] Trade and Transport Facilitation Project). He observed that multilateral institutions can play a bigger role than they do at present – they have access on both sides of borders, and to all of the countries. He observed that synergies between and among multilateral (and bilateral) institutions are important. Many projects that may not look to be regional projects on a prima facie basis can help with regional integration. He discussed potential engagements of the World

Bank in trade and transport facilitation, e.g., promoting India-Nepal-Bangladesh trade (including implementation of a trilateral transit agreement, border post infrastructure, and integrated border management at border crossings linking the three countries) and promoting India-Myanmar-Bangladesh trade (including connecting Kolkata and Haldia Ports to Sittwe Port in Myanmar and onward multimodal connectivity to North East India; and connectivity between Chittagong Port and Mizoram, and Mizoram to Myanmar via Champhai-Zokhawthar). Finally, he called attention to the South Asia Regional Integration Partnership Multi-Donor Trust Fund in which other development partners may participate.

15. Dr. Prabir De, Senior Fellow, Research and Information System for Developing Countries, India, presented on the performance of trade and transport corridors in Eastern Southern Asia, based on 2013 SASEC research assisted by ADB and UNESCAP. Specifically, he discussed the results of a business process analysis for selected products transported along a Nepal Corridor (Kakarbhitta–Panitanki–Phulbari–Banglabandha), along a Bhutan Corridor (Phuentsholing–Jaigaon–Hasimara–Chengrabangha–Burimari), and along another Nepal Corridor (Kathmandu–Birgunj–Raxaul–Kolkata). Specific findings included the need for: (i) reducing the length customs and cargo handling time at the Port of Kolkata through automation and modernization; (ii) faster opening of letter of credit accounts with the help of information and communication technology (ICT); (iii) faster cargo insurance with the help of ICT, engineering, and competition between/among service providers; (iv) use of ICT to obtain permits and certificates; (v) synchronization of cross-border customs; (vi) removal of the regulatory burden on imports and exports; (vii) (minimum) process re-engineering; (viii) acceptance of subregional transit; (ix) development of border infrastructure; (x) national single windows for paperless trade; and (xi) consistent enforcement of basic trade facilitation measures. Based on this analysis, Dr. De recommended a number of specific trade facilitation projects (e.g., cooperation among border agencies, joint customs control and joint border management, development of a SASEC single window, use of modern vehicle tracking systems).

16. Mr. Tomohide Ichiguchi, Senior Representative, JICA India Office, focused on the North East Region of India, which is a priority area for the Government of Japan and JICA because it is important for regional connectivity and because it is one of India's economically lagging regions with inadequate infrastructure. However, given its natural resources and strategic location, the North East Region has potential to become a powerhouse in development, trade, and investment. In addition, political and economic reform in Myanmar highlights the potential for development of the region. Also, Japan has historical and cultural ties with the region. He explained that JICA has several ongoing and planned projects in the region, in various sectors. He noted that JICA cannot assist all of the potential projects mentioned by Mr. Motomura, but it has had advanced discussion on several of the prioritized projects, e.g., with MORTH on improving national highways in the North East Region, to complement improvements under the Special Accelerated Road Development Program in the North East (SARDP-NE). They will explore possibilities for applying Japanese technologies in bridge and tunnel construction and disaster prevention. MoRTH has identified about 10 national highway sections for potential JICA assistance that are important for the development of the North East states, some of which will help unlock regional connectivity with Bangladesh, Bhutan, and Myanmar. While there are a number of challenges (e.g., land acquisition, procurement difficulties), JICA will seek innovative management solutions. Finally, he expressed his hope that these projects will improve regional connectivity and ultimately bring about a more prosperous South and Southeast Asia.

17. Mrs. K. Damayanthi, Joint Secretary, Ministry of Development of North Eastern Region (MDONER), India, thanked JICA for conducting an insightful survey of connectivity improvements in and around South Asia. She observed that the Survey covers both hard and soft infrastructure, and that it lays down objective project evaluation criteria. However, as

observed by Mr. Butiong, ADB, the financial requirements are huge. The North East was seamlessly connected with ports and other areas before Partition but now suffers badly due to poor connectivity. She expressed appreciation for JICA's focus on the region. Mrs. Damayanthi observed that security issues are important, although the use of ICT (e.g., GPS tracking) will address the issue. She stated that the simplification of systems will lead to increased trade (e.g., trade of organic food products from the North East). She noted the importance of harmonizing transport regulations to reduce long delays at borders. She pointed to the potential of "win-win" arrangements between India and Bangladesh. Finally, she observed that if investments are delayed, costs will increase; she stated that "we must seize the moment".

18. Mr. Sagar Krishna Chakraborty, Project Director, Regional Connectivity and Integration (Rail Component) Project, Bangladesh Railway first noted the importance of Bangladesh as a regional transport hub (Chittagong and the potential deep sea port). He pointed out that with ADB assistance Bangladesh Railway has been studying seven subprojects with implications for regional connectivity. Capacity constraints are being addressed. A 20-year master plan is to be developed that will consider gauge harmonization issues. ADB is funding double-lining of the Dhaka-Chittagong section, which will also be assisted by JICA. He noted that the JICA Survey Team could productively take into consideration the ADB Bangladesh Regional Transport Hub technical papers prepared as part of the Regional Cooperation and Integration Project – Rail Component Consultants' Services.

19. Mr. Shishir Kanti Routh, Executive Engineer, Roads and Highways Department, Bangladesh, observed that the road corridors suggested by the Survey are in line with the corridors identified in regional initiatives, e.g., SAARC and BIMSTEC. He noted that they are developing road corridors to allow landlocked countries to use the seaports at Chittagong and Mongla; one cannot derive the full benefits if there are substandard and/or missing sections. The JICA Survey well identified Corridors RO1, RO2, RO3, and RO17. He observed that part of RO3C linking Nepal and Chittagong is being developed with ADB assistance (e.g., Panchagarh-Bangladbanda). While further improvements to increase capacity are more long term, the Panchagarh-Ranpur section is currently not in any study/program and need improvement. He noted that ADB is studying the Jessore-Khulna section, which connects with Mongla. A 44 km section to Silchar along the Bangladesh-China-India-Myanmar (BCIM) Corridor could be included in the JICA Survey. Finally, he noted that a 138 km section along RO7 may be considered because it is necessary for connectivity for connecting Bhutan with Chittagong.

20. Mr. Dophu Dukpa, Senior Regional Transport Officer, Road Safety and Transport Authority, Ministry of Information and Communications, Bhutan, noted that the Seminar was timely since there are a number of ongoing initiatives. He noted that road infrastructure development in Bhutan is constrained by the country's topography. He pointed out that Asian Highways 42 and 28, and SAARC Corridor 8, are important for Bhutan for access to seaports in India and Bangladesh. He noted that within Bhutan the Thimphu-Phuentsholing Road is being upgraded to Asian Highway standard with ADB financing. In addition, he mentioned the Pasakha access road and other components of the ADB SASEC Road Connectivity Project. Finally, he stated that Bhutan accords high priority to construction of a second east-west link in the south of the country.

21. Mr. Tulasi Prasad Sitaula, Secretary, Ministry of Physical Infrastructure and Transport, Nepal, thanked the survey team for its comprehensive study. He concurred that there will be dramatic growth in the region and there is a need to prepare for it. Processing times are lengthy, containerization has not progressed, and access to the sea is poor for Nepal, a landlocked country with topographical constraints. Asian Highways 2 and 42 in Nepal are not up to standard, the railway network needs to be developed, and "last mile connectivity" is inadequate. While the pace is slow, two railway lines and some roads are being developed with bilateral support from India; inland clearance/container depots (ICDs) are being developed with ADB

assistance and an ADB SASEC road connectivity project will soon commence. He thanked the Government of India, JICA, ADB and SASEC, and the World Bank for supporting connectivity initiatives. The corridors from Kathmandu to Kolkata and Chittagong are crucial. He would like to see the SAARC Motor Vehicle Agreement implemented soon. A master plan for integrated connectivity and staged implementation could be a key to success. Finally, he stated that Nepal seeks to benefit from Japanese technology.

22. Ms. Kobkul Motana, Director of Planning Bureau, Office of Transport and Traffic Policy and Planning, Ministry of Transport, Thailand, noted that the Seminar included considerable information that she had not heard before. She welcomed the connection to South Asia but noted the importance of reflecting Myanmar's views. She noted the international agreement on the ASEAN Highway and the ASEAN Transport Action Plan, and identified the need to complete missing links of the Singapore-Kunming Rail Link and the ASEAN Highway (which is part of the Asian Highway network). While these connections are complete in Thailand, they are waiting for connections in their neighboring countries. She stressed the importance of having a good bilateral agreement, even if the hardware is there. For example, they opened the Fourth [Thailand-Lao PDR] Mekong Friendship Bridge last month, but the bilateral agreement establishing traffic rights needs to be refined. She urged JICA to complete a master plan, agreed by the countries, to prioritize projects. Upon completion of Ms. Motana's presentation, Mr. Arai of JICA noted that the participation of Thailand is important for South Asia-Southeast Asia connectivity and because South Asia can learn from the GMS experience in enhancing connectivity.

#### **IV. Session III: Open Discussion**

23. Dr. Mohammed Mahfuz Kabir, Senior Research Fellow, Bangladesh Institute of International Strategic Studies (BISS), stated that 6.5%–7.5% is a more likely growth rate for Bangladesh than 6.0%. He said that India has become a “paradox” since it is a developing country but it exports capital and products; it will be the export hub for the region. Mr. Motomura clarified that the findings reported are interim and the JICA Survey Team will consider these and other comments in finalizing the survey report.

24. Mr. Anil Bamba, Member (Planning and Development), Land Ports Authority of India, asked whether one stop-border posts in Africa include the extraterritorial exercise of sovereign duties. Mr. Motomura clarified that this was the case (e.g., at Chirundu between Zambia and Zimbabwe).

25. Dr. Kabir, BISS, noted that the population of North East India is 40–45 million. Mrs. Damayanthi, MDONER, observed that while this is less than that of other South Asian countries, it is larger than that of some other countries in the region.

26. Dr. Kabir also noted that the foundation stone has been laid for a new port at Kalapara, which may change the transport connectivity situation especially for Bhutan and Nepal. He further noted that the provision of transit rights to North East India is sensitive in Bangladesh; a core committee on transit submitted a report in late 2011, but still diplomatic initiatives are required.

27. Mr. Manab Majumdar, Assistant Secretary General, Federation of Indian Chambers of Commerce and Industry, identified the importance of exploring innovative financing options through public private partnerships (PPPs). Also, he urged greater involvement of the private sector. He observed that if PPP projects are introduced in the context of 2–3 countries, the challenge will become more formidable. He would welcome JICA assistance for brainstorming on this issue.

28. Mr. Khamal Shaleen, Research Associate, South Asia Watch on Trade, Economics and Environment, observed that it is important to consider not only the quantity of transport infrastructure, but also the quality (e.g., it is possible to reinforce road structures so that they can better accommodate the traffic). He queried whether there is a possibility of a regional transit agreement among the SAARC countries, e.g., it is possible to develop a legal framework for transit analogous to that for free trade under the South Asia Free Trade Agreement (SAFTA).

29. Mr. Shri Ram Muivah, Principal Secretary, Transport and Public Works Department, Government of Manipur, noted that JICA has proposed assistance for 10 national highways in North East India, including two in Manipur. He stressed that once an agreement is reached it should be signed on a timely basis. In a prior case with another development partner it took six years to sign an agreement; costs had increased, and the development partner and MDONER were unwilling to shoulder the cost overrun. Accordingly, he urged both JICA and MORTH to make sure that the loan agreement is finalized on a timely basis.

30. Mr. R.B. Rauniar, Managing Director, Interstate Multi-Modal Transport (Pvt) Ltd., called for in-house institutional training and capacity building so that “these areas will not forever be dependent on outside consultants”. Mr. Arai, JICA, noted that this is a good point and stated that JICA will address it in moving from a regional survey to a master plan to implementation.

## **V. Closing Remarks**

31. Mr. Shinya Ejima, Chief Representative, JICA India Office, made the closing remarks. He expressed gratitude for the collective efforts of all who attended the Seminar. He noted that it was a good opportunity to reach common understanding on the importance of enhancing regional connectivity in South and Southeast Asia to continue the dynamic growth of the region. Since the task is huge, it is not possible for it to be undertaken by any one country or development partner. Instead, coordination among countries and organizations associated with regional connectivity is indispensable. Many projects and initiatives are ongoing and it is encouraging that regional connectivity enhancement has started already. JICA appreciates the various comments and suggestions made on the Survey and will incorporate these in the final report. He again stressed the importance of South Asia-Southeast Asia integration and inclusive growth. Finally, he asked for the continued cooperation and support of the seminar participants and looked forward to seeing the participants in Guwahati for the final seminar.



## Appendix 1: Seminar Program

Time	Subject	Speakers
9:30–10:00	<b>Registration</b> Venue: Pre-Function Area	
10:00–10:45	<b>Session 1</b> Venue: The Viceregal	
	<b>Opening Remarks by</b>	Mr. Tamaki Tsukada Minister (Economic and Development), Embassy of Japan in India
	<b>Address by</b>	Mr. Sanjiv Ranjan, Joint Secretary (DPA-III), Ministry of External Affairs, Government of India
	<b>Address by</b>	Mr C. Kandasamy Director General and Special Secretary, Ministry of Road Transport and Highways, Government of India
	<b>Address by</b>	Mr. Girish Pillai Advisor (Infrastructure), Ministry of Railways, Government of India
	<b>Address by</b>	Mr. Toru Arai Director General, South Asia Department, JICA
10:45–11:00	<b>Coffee Break</b>	
<b>11:00–13:30</b>	<b>Session 2: Strengthening Regional Connectivity in and around South Asia</b> <i>This session will discuss importance of improving regional connectivity in and around South Asia by sharing JICA's survey findings on Transport Infrastructure for Regional Connectivity in and around South Asia and lessons learned from country and donor experiences.</i> Venue: The Viceregal	
11:00–11:20	<b>Presentation on JICA Survey Findings</b>	Mr. Yuichiro Motomura Head of JICA Survey Team
11:20–11:35	<b>Presentation on Experiences of Cross-border Initiatives in and around South Asia</b>	Mr. Ronald Antonio Q. Butiong Unit Head, South Asia Subregional Economic Cooperation, Regional Cooperation and Operations Coordination Division, South Asia Department, Asian Development Bank
11:35–11:50	<b>Presentation on Experiences of Cross-border initiatives in and around South Asia</b>	Dr. Nagesh Kumar Director, ESCAP South and South-West Asia Office, and Chief Economist, UN- ESCAP, UN ESCAP South and South- West Asia Office
11:50–12:05	<b>Presentation on Experiences of Cross-border initiatives in and around South Asia</b>	Mr. Atul Agarwal Senior Transport Specialist, South Asia Sustainable Development, The World Bank
12:05–12:15	<b>Presentation on Experiences of Cross-border initiatives in and around South Asia</b>	Dr. Prabir De Senior Fellow, Research and Information System for Developing Countries
12:15–12:25	<b>Potential Projects in and around the North Eastern Regions in India</b>	Mr. Tomohide Ichiguchi Senior Representative, JICA India Office
12:25–12:55	<b>Comments from Concerned Governments</b> <b>Government of India</b>	Mrs. K. Damayanthi Joint Secretary, Ministry of Development of North Eastern Region

<b>Time</b>	<b>Subject</b>	<b>Speakers</b>
	<b>Government of Bangladesh</b>	Mr. Sagar Krishna Chakraborty, Project Director, Regional Connectivity and Integration (Rail Component) Project, Bangladesh Railway Mr. Shishir Kanti Routh, Executive Engineer, Roads and Highways Department
	<b>Government of Bhutan</b>	Mr. Dophu Dukpa Senior Regional Transport Officer, Road Safety and Transport Authority, Ministry of Information and Communications
	<b>Government of Nepal</b>	Mr. Tulasi Prasad Sitaula, Secretary, Ministry of Physical Infrastructure and Transport
	<b>Government of Thailand</b>	Ms. Kobkul Motana, Director of Planning Bureau, Office of Transport and Traffic Policy and Planning, Ministry of Transport
12:55–13:25	<b>Open Discussions</b>	
13:25–13:30	<b>Closing Remarks</b>	Mr. Shinya Ejima Chief Representative, JICA India Office
13:30–14:30	<b>Lunch</b>	

## Appendix 2: List of Participants

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### GOVERNMENT OF INDIA

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**Mr. Sanjiv Ranjan**  
Joint Secretary(DPA-III)  
Ministry of External Affairs

**Mr. C. Kandasamy**  
Director General  
RD&RR  
Ministry of Road Transport and Highways

**Mr. Sunil Kumar Verma**  
Chief Engineer  
Ministry of Road Transport and Highways

**Mr. A.D. James**  
Deputy Secretary  
Ministry of Road Transport and Highways

**Mr. Niraj Verma**  
Joint Secretary  
Ministry of Road Transport and Highways

**Mr. D. Sarangi**  
Chief Engineer  
Ministry of Road Transport and Highways

**Mr. Girish Pillai**  
Advisor (Infrastructure)  
Ministry of Railways

**Mr. Arvind Madhav Singh**  
Joint Secretary  
Ministry of Development of North Eastern  
Region

**Mrs. K. Damayanthi**  
Joint Secretary  
Ministry of Development of North Eastern  
Region

**Mr. Y. S. Shahrawat**  
Chairman  
Land Ports Authority of India  
Ministry of Home Affairs

**Mr. Bamba Anil Kumar**  
Member  
Land Ports Authority of India  
Ministry of Home Affairs

**Mr. A.K. Dutta**  
Director  
DFCCIL

**Mr. V.K. Raina**  
Sea Link Expert  
Consultant

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### GOVERNMENT OF BANGLADESH

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**Mr. Sagar Krishna Chakraborty**  
Project Director, Regional Connectivity and  
Integration (Rail Component) Project  
Bangladesh Railway

**Mr. Abdul Jalil**  
Senior Assistant Secretary  
Ministry of Railways

**Mr. Md. Jamal Uddin Ahmed**  
Joint Secretary  
Roads Division  
Ministry of Communication, Bangladesh  
Secretariat

**Mr. Md. Ishaque**  
Deputy Chief  
Roads Division  
Ministry of Communication, Bangladesh  
Secretariat

**Mr. Shishir Kanti Routh**  
Executive Engineer  
Roads and Highways Department

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### GOVERNMENT OF BUHTAN

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**Mr. Kunzang Wangdi**  
Officiating Director  
Department of Roads  
Ministry of Works and Human Settlement

**Mr. Dophu Dukpa**  
Senior Regional Transport Officer  
Road Safety & Transport  
Ministry of Information and Communications

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**GOVERNMENT OF NEPAL**

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**Mr. Tulasi Prasad Sitaula**

Secretary  
Ministry of Physical Infrastructure and Transport

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**GOVERNMENT OF THAILAND**

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**Ms. Motana Kobkul**

Director of Planning Bureau  
Office of Transport and Traffic Policy and  
Planning

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**GOVERNMENT OF MANIPUR**

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**Shri. Ram Muivah**

Principal Secretary  
Transport and Public Works Department

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**GOVERNMENT OF BIHAR**

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**Mr. Pratyaya Amrit**

Secretary  
Road Construction Department

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**GOVERNMENT OF UTTAR PRADESH**

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**Mr. Khan Masarrat Noor**

Chief Engineer  
Public Works Department

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**ASIAN DEVELOPMENT BANK (ADB)**

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**Mr. Ronald A.Q. Butiong**  
Unit Head, South Asia Subregional Economic  
Cooperation  
Regional Cooperation and Operations  
Coordination Division  
South Asia Department

**Ms. Kavita S. Iyengar**  
Economist  
India Resident Mission

**Mr. Soumya Chattopadhyay**  
Regional Cooperation Consultant

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**THE WORLD BANK**

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**Mr. Atul Agarwal**  
Transport Specialist

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**UNITED NATIONS ECONOMIC AND SOCIAL COMMISSION FOR ASIA AND THE  
PACIFIC**

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**Dr. Nagesh Kumar**  
Director and Chief Economist  
South and South-West Asia Office

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**BANGLADESH INSTITUTE OF INTERNATIONAL AND STRATEGIC STUDIES**

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**Dr. Mohammad Mahfuz Kabir**  
Senior Research Fellow

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**CENTRE FOR POLICY RESEARCH**

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**Mr. K.C. Sivaramakrishnan**  
Chairman

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**RESEARCH AND INFORMATION SYSTEM FOR DEVELOPING COUNTRIES**

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**Dr. Prabir De**  
Senior Fellow

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**SOUTH ASIA WATCH ON TRADE, ECONOMICS AND ENVIRONMENT**

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**Mr. Khanal Shaleen**  
Research Associate

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**EMBASSY OF JAPAN IN INDIA**

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**Mr. Tamaki Tsukada**  
Minister (Economic and Development)

**Mr. Kei Masuda**  
Counsellor (Economic section)

**Mr. Soichiro Yuyama**  
First secretary (Economic and Finance)

**Mr. Hideki Taniguchi**  
Second Secretary (Agriculture & Bhutanese  
Affairs)

**Ms. Miyuki Eguchi**  
Project Formulation Advisor

**Dr. Mohd. Faisal**  
Principal Economic Researcher

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**Dr. Mohd. Faisal**  
Principal Economic Researcher

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**Mr. Hideshi Sasahara**  
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**Mr. Toru Arai**  
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**Ms. Arisa Watanabe**  
Regional Officer  
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South Asia Department

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**JICA INDIA OFFICE**

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**Mr. Shinya Ejima**  
Chief Representative

**Mr. Tomohide Ichiguchi**  
Senior Representative (Deputy Chief  
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**Mr. Chihiro Fukuda**  
Representative

**Ms. Yui Nakamura**  
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**Mr. Anurag Sinha**  
Senior Development Specialist

**Mr. Sanjeev Moholkar**  
Principal Development Specialist

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**JICA EXPERTS**

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**Mr. Keita Nakasu**  
Chief Advisor for Highway/Expressway Policy,  
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**Mr. Kiyoshi Dachiku**  
JICA Expert for Expressway Operations, NHAI

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**Mr. Takashi Hiramatsu**  
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**Mr. Suman Gupta**  
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**JICA BHUTAN OFFICE**

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**Mr. Hidetaka Sakabe**  
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**Mr. Krishna Subba**  
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**Mr. Takaaki Watanabe**  
Managing Director

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**FEDERATION OF INDIAN CHAMBERS OF COMMERCE AND INDUSTRY**

**Mr. Manab Majumdar**  
Assistant Secretary General

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**ITOCHU INDIA PVT. LTD.**

**Mr. Mitsuoka Naoto**  
Executive General Manager

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**JFE ENGINEERING INDIA PVT. LTD.**

**Mr. Izumi Sugibayashi**  
Managing Director

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**Mr. Yoji Kawai**  
Professional Engineer

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**NIPPON KOEI INDIA**

**Mr. Masato Nomura**  
Managing Director

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**NYK LINE (INDIA) LTD.**

**Mr. Mitsuyasu Okimura**  
Managing Director

**Mr. Chander Kaul**  
Branch Manager

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**Mr. Yoshitake Higuchi**  
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**Ms. Masako Hatta**  
Transport Planner I

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**Mr. Michael Chadney**

Transport Planner II

**Mr. Toshiaki Nagaya**

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(Border Facilities and Dry Ports)/Regional  
Freight Transport Specialist I

**Mr. Takayuki Urade**

Industrial Development and Trade Promotion  
Specialist I

**Mr. Shinya Nagaoka**

Environmental and Social Analysis/Social  
Development Specialist

**Mr. Shinichi Kimura**

Project Coordinator/Transport Planning Assistant

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**PADECO**

**Mr. Noriaki Ebii**

General Manager

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## Appendix 2b Summary of Proceedings of the Final Seminar

### The Final Seminar on the JICA Survey on Transport Infrastructure Development for Regional Connectivity in and around South Asia Guwahati, Assam, India, 13 February 2014

#### SUMMARY OF PROCEEDINGS

##### I. Introduction

1. The Final Seminar (hereinafter the “Seminar”) on the JICA [Japan International Cooperation Agency] Survey on Transport Infrastructure Development for Regional Connectivity in and around South Asia (hereinafter “the Survey”) was held in Guwahati, Assam, India, on 13 February 2014. Senior executives in the public and private sectors, the academic and research community, and international development partner organizations attended the Seminar. The seminar program is provided as **Appendix 1** and the list of participants as **Appendix 2**.

2. The rapid economic growth in South Asia and various developments in Southeast Asia including establishment of an ASEAN [Association of Southeast Asian Nations] Economic Community by 2015 have generated momentum for enhancing regional connectivity both within South Asia and between South Asia and Southeast Asia. In this context, JICA initiated a data collection survey on transport infrastructure development for regional connectivity in and around South Asia in August 2013 to better understand the current situation and identify the potential and prospects for regional inland transport infrastructure development in South Asia.

3. The aim of the Seminar was to present the final survey findings reflecting the intensive discussions during the First Seminar held at New Delhi, India, on 16 January 2014, and to deepen discussions on regional connectivity issues in the North East Region of India. Specific aspects presented included: (i) background, (ii) road and rail infrastructure, (iii) soft transport infrastructure, and (iv) cross-border facilities.

4. The Seminar was directed by senior JICA staff members, led by Mr. Yusuke Murakami, Director, South Asia Department, JICA.

##### II. Session 1: Opening

5. Mr. Tamaki Tsukada, Minister (Economic and Development), Embassy of Japan in India, opened the Seminar by expressing his gratitude to the participants. He congratulated the organizer, JICA, in selecting Guwahati to host this seminar because historically as well as at present Assam has enjoyed close links with its neighboring states and countries. He provided an overview of Japan’s bilateral relations in the region, with South Asian and ASEAN countries. He noted that there have been a series of high-level talks and strong cooperation with these countries, including a recent visit to India by Prime Minister Shinzō Abe, during which he proposed USD 2 billion USD equivalent of yen loans to India (the current bilateral program already amounts to USD 3 billion equivalent, making India the largest recipient of Japan’s official development assistance). The bilateral statement from the Summit for the first time addressed the topic of regional cooperation and connectivity, and directed officials to formulate a firm project to realize this vision. Therefore, the Seminar is timely. He observed that geographically North East India is where South and South Asia meet, and these two regions are important strategic investment locations for many Japanese companies, with now more than 1,000 Japanese companies operating in India. He also stressed the importance of the



neighboring countries, e.g., Bangladesh is one of the “next 11” economies following the BRICS.<sup>1</sup> Connectivity can be a “game changer” and can determine the investment behavior of private companies. In ASEAN, while Cambodia and Lao PDR are less developed, there has been a growing presence of Japanese companies because these countries connect the surrounding countries; he noted that Japan and ASEAN have worked together to create the East-West Corridor, which has shortened the travel time between Bangkok and Hanoi from two weeks to a couple of days. Similarly, Japan seeks to turn this vision into a reality in South Asia, to transform this remote area into a thriving hub by establishing the necessary infrastructure. Finally, he stated his hope that a concrete project would emerge from today’s discussions and that one day we might look back at today as “day 1 of our grand vision”.

6. Mr. M.P. Bezbaruah, Honourable Member, North Eastern Council, provided a brief outline of the North East’s expectations from an overall viewpoint. There have been a large number of projects and the implementation of each involves many states and countries; he stated that we must assure complementarities, cost savings, and the sharing of benefits among different projects. These are not always part of the discussion and implementation, and as a result there is often a feeling that nothing is happening. The North East should be part of all discussions and decision making on all issues. India cannot look east without looking at the North East. As stated by a former prime minister, the North East is a “bridgehead” between India and Southeast Asia; Southeast Asia is a “natural extension” of the North East. The region’s annual (nominal) GDP growth rate was 9.5% during the 11<sup>th</sup> plan period, which was greater than the national average. There are shared historical, cultural, and ethnic links that can be leveraged for greater trade and tourism. Connectivity is essential to ending the isolation caused by the partition. He stressed the importance of access to seaports through Bangladesh. He discussed both formal (commercial trade) and border trade. He noted that a systematic approach is needed to identify the comparative advantage of the North East for exports, on which basis steps for improving production efficiency can be taken. He also stressed the importance of improving marketing and transport links. Further, he stressed the importance of creating economic zones; he stated that assistance in this area would be of great help. Investment in connectivity without economic zones may not achieve the objective. He observed that 60% of the Asian Highway network (in the region) is still not of an international standard; also, the concept of roads should be viewed broadly; the Japanese *michi no eki*<sup>2</sup> concept could be usefully applied. In addition, he stressed the importance of air transport infrastructure, e.g., to attract tourists from Thailand. He also mentioned the importance of seamless national waterway connectivity, navigability, and protocol arrangements with neighboring countries to open routes to the sea. Finally, he stressed the importance of inclusive growth.

7. Dr. V.B. Pyarelal, Additional Chief Secretary, Government of Assam, stated that Government of Assam has been seeking to develop transport infrastructure. Regarding roads, he noted that the Public Works Department and other departments have been receiving external assistance. In addition, he discussed the Guwahati metro project, for which the detailed project report will be completed in the next few months; he noted that they may approach external agencies to help finance the project. He also noted assistance for the procurement of 400 buses to start operation in the next few months.

8. Mr. V.L. Patankar, Director General (Road Development) and Special Secretary, Ministry of Road Transport and Highways (MORTH), Government of India, congratulated

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<sup>1</sup> BRICS is the acronym for the association of five major emerging national economies: Brazil, the Russian Federation, India, China, and South Africa.

<sup>2</sup> A *michi no eki* (道の駅) is a roadside station, i.e., a government-designated rest area found along roads. In addition to providing places for travelers to rest, they are also intended to promote local tourism and trade. Shops may sell local produce, snacks, souvenirs, and other goods.

JICA for organizing the seminar in Guwahati. He confirmed the commitment of the Government of India (GOI) to the overall development of the road network under its purview, for the entire country, including the network in the North East region, and the regions around the North East. The GOI has emphasized road development starting 15 years ago, e.g., with the National Highway Development Programme and the Special Accelerated Road Development Programme. He noted that in recent national plans there have been substantial increases in road sector investments (e.g., a 2.5 fold increase from the 11<sup>th</sup> to the 12<sup>th</sup> plan). He observed that while road development by the private sector was to reach 47% during the 12<sup>th</sup> plan period, this has proved to be a huge challenge due to the limited availability of equity and loan financing for the private sector; nowhere in the world has this proportion exceeded 25-30%. Certain steps from the GOI would increase private sector investment in the road sector, but there would be a need to restructure projects to build upon synergies with other sectors to make the projects more attractive. He mentioned a number of initiatives by the GOI to enhance connectivity, e.g., Asian Highways, the Trilateral Highway, the Kaladan Multimodal Transit Transport Project, integrated check posts, the development of roads in border areas. The aim is to move forward quickly to facilitate development of the entire region, to achieve overall social and economic development goals. He thanked JICA for conducting the study, which should formulate results-oriented plans. Finally, he noted that MORTH has already proposed possible JICA assistance projects to the Department of Economic Affairs, Ministry of Finance, “so that the dream for the North East and the entire region can be achieved much faster”.

9. Mr. Murakami, JICA, expressed his sincere gratitude to the seminar attendees. He stated the background and aim of the Seminar, as set out in paragraphs 2 and 3 of this summary of proceedings. He noted that the Seminar was mainly focused on the North East Region of India, as a hub of overland activity for the six survey countries. The North East Region is a priority for JICA’s cooperation with the country, as confirmed in the recent summit of the two countries’ leaders. He mentioned that JICA invited the Asian Development Bank (ADB), the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP), the Research and Information System for Developing Countries (RIS), and JICA’s Bangladesh Office to share insights and experience on cross-border. Also, MORTH’s regional office in Guwahati, the Inland Waterways Authority of India (IWAI), the Northeast Frontier Railway, and the JICA Survey Team will share their views and discuss road and rail infrastructure in the North East in a panel discussion. Comments made during the Seminar will provide valuable inputs for the final survey report. In addition to this study on overland connectivity, he noted that JICA will initiate a survey on strategic development of the maritime sector in the region. Finally, Mr. Murakami asked for continuous cooperation and support so that survey results will lead to the implementation of concrete projects on a timely basis.

10. Mr. Y. Joykumar, Project Director, Public Works Department, Manipur, observed that externally assisted projects in the North East require clearance/approval of the Ministry of Home Affairs, the Ministry of External Affairs, MORTH, and the Ministry of Development of North Eastern Region (MDONER). Such clearance/approval is quite cumbersome and is a major reason for delays in implementation. Mr. Joykumar asked whether the North Eastern Council can move the GOI to implement single window clearance or assign MDONER as the nodal agency for such clearances. Mr. M.P. Bezbaruah, North Eastern Council, also noted the cumbersome clearance/approval processes and expressed a desire to see them streamlined. He observed that while the North Eastern Council broadly follows the priorities of state governments, according to the regional Look East policy most projects are finalized by the various concerned ministries (e.g., the Ministry of External Affairs). He also noted the priority of improving internal air connectivity within the North East.

11. Mr. Ram Muivah, Principal Secretary, Transport and Public Works Department, Manipur, asked about the repayment mechanism for JICA loans for road projects in the region.

Mr. V.L. Patankar, MORTH, observed that while it is a question of time before it is clear which of the mentioned projects will proceed, repayment will be the responsibility of the GOI.

### **III. Session 2: Strengthening Regional Connectivity in and around South Asia (including the North East Region of India)**

12. Mr. Yuichiro Motomura, JICA Survey Team Leader/Transport Infrastructure and Facility Planner, as well as the President of PADECO Co., Ltd., presented the Survey's findings. He first provided some essential background, showing that South Asia (including North East India) is at the hub of the region and has huge potential for economic growth, and that traffic volumes will naturally follow, with associated infrastructure requirements, hard and soft. Regarding road and railway infrastructure, he showed that both the road and railway networks offer potential for enhanced connectivity. He stressed the need to develop soft transport infrastructure to promote economic growth. With respect to logistics and cross-border facilities, he observed that the freight transport and logistics system in the region is not well developed but can be modernized. Since transshipment is required at most border crossings, through transport would increase efficiency. Since all of the countries have transit requirements, all of the countries can benefit from "win-win" transit arrangements. In addition, inefficient customs and border procedures can be improved. He next introduced potential projects for JICA assistance, including road and railway infrastructure projects along eight corridors, soft infrastructure projects (including pilot corridor and border efficiency projects, and projects at the regional level), and freight transport and logistics projects.

13. Ms. Kavita Iyengar, Economist, India Resident Mission, ADB, presented ADB's experience with cross-border initiatives in and around North East India, including South Asian Association for Regional Cooperation (the SAARC Regional Multimodal Transport Study, access to Bangladeshi ports by Bhutan and Nepal), South Asian Subregional Economic Cooperation (updating SASEC transport connectivity), and Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (the BIMSTEC Transport Infrastructure and Logistics Study, the BTILS). She noted that the "building block, multi-speed, multi-track approach" adopted by ADB requires government ownership. Therefore, she discussed initiatives by country, covering India (the India SASEC Road Connectivity Project, regional road improvements, and land customs stations by the GOI), Bhutan (the Bhutan SASEC Regional Road Connectivity Project), Bangladesh (the Bangladesh SASEC Regional Road Connectivity Project and land port development), and Nepal (the Nepal SASEC Road Connectivity Project, the North Eastern State Roads Investment Program). Ms. Iyengar also discussed the Bangladeshi railway sector, including ADB's railway sector multitranche financing facility. She discussed future projects, including capacity enhancement of the existing transport network, the SASEC railway connectivity investment program in Bangladesh, multimodal connectivity between Bhutan and Bangladesh, and "last mile" connectivity. Finally, she discussed various project preparation activities (the Subregional Transport Project Preparatory Facility in Bangladesh, the Transport Project Preparatory Facility in Nepal, new technical assistance projects or design facilities to prepare projects in Bhutan and Nepal, and an update of the BTILS).

14. Dr. Manas Bhattacharya, Senior Consultant, UNESCAP South and South-West Asia Office, introduced various UNESCAP initiatives in (i) connectivity and corridor development, relating to the Asian Highway, Trans-Asian Railway, and dry ports; (ii) identification of transport corridors linking South and Southwest Asia and beyond to leverage the strategic location of the region as a hub for east-west trade; (iii) connectivity for border development; (iv) models of secure and efficient cross-border transport, including a border crossing management information system for goods transport; and (v) policy dialogue in support of greater

connectivity and facilitation. He provided a number of useful web links to UNESCAP research on these topics.

15. Dr. Prabir De, Senior Fellow, RIS, presented on the role of production networks in increasing production in India's North East Region. First, he observed that the Survey provides useful directions for the funding of projects in the region. He discussed North East India and India's Look East Policy and the importance of removing the economic isolation of the region. He stated that borders should be seen as economy-building assets rather than deterrents to development. Dr. De discussed the current trade arrangements of the region (e.g., private sector driven resource links between the North East Region and Bangladesh, transit trade links between the North East Region and Myanmar). He then provided an illustration of emerging production networks in the North East Region, focusing on the example of the North East Region and Bangladesh; he also provided an example of connectivity-induced production networks between the North East Region and Myanmar. Next, he addressed trade facilitation in the North East and introduced the latest developments in regional connectivity, including the ASEAN-India Transit Transport Agreement proposed by the Indian Prime Minister at the ASEAN-India Summit in Brunei in September 2013. Dr. De also introduced a number of new proposals (e.g., new ports and special economic zones; an India-Myanmar-Lao PDR-Viet Nam Corridor, as an example of Look East Indian-ASEAN Connectivity). He then addressed impact assessment, focusing on the effect of improved connectivity on production networks; he reported that less paperwork and red tape, better telecommunications infrastructure, and the availability of warehouses were particularly important for the private sector. He mentioned that a number of measures are necessary to overcome the barriers and support regional connectivity (e.g., integrated transport planning for the North East, improvement of infrastructure and services, harmonization of rules and procedures). He closed with a list of specific recommendations including examples such as the completion of the Trilateral Highway, removal of restrictions on the entry of motor vehicles, implementation of standardized border crossing procedures, electronic submission of trade documents, engagement of international development partners to enhance connectivity.

16. Mr. Kei Toyama, Senior Representative, JICA Bangladesh Office, presented the perspectives and plans of Bangladesh as a hub for regional connectivity. He noted that his presentation was from the JICA point of view but reflected views from Government of Bangladesh counterparts. He began by addressing features and a vision for regional connectivity. Challenges are a result of the region including four least developed countries and three landlocked regions; the countries are asymmetric (in terms of political power, trade balance, and interests) and there are ongoing disputes (regarding land boundaries, water sharing, transit). In addition, he discussed how Bangladesh can contribute as a regional hub for mutual benefit, e.g., by providing access to the Bay of Bengal for landlocked regions; by providing diversified, efficient routes between SAARC and ASEAN. He also discussed the perspectives and plans of Bangladesh, e.g., by addressing bottlenecks in the transport sector and prioritizing major projects such as the Padma Bridge, a potential deep seaport, and special economic zones. He further discussed "wisdom for connectivity" (e.g., the need for consistent political leadership, friendship building among people(s)). He then addressed the road and railway (sub)sectors, noting the shift in priority to rail in the National Integrated Multimodal Transport Policy. He concluded by stating that JICA is happy to work as a honest broker for the region, by providing hardware, software, and wisdom.

17. Mr. Kunzang Wangdi, Officiating Director, Department of Roads, and Mr. Dophu Dukpa, Senior Regional Transport Officer, Road Safety and Transport Authority, stated that: (i) road corridors RO7 and RO 9 are important for regional integration, and (ii) the construction of the Maokhola Bridge on the Southern East-West Highway is important. Mr. Motomura, JICA Survey Team, replied that based on the multi-criteria selection process, each proposed project

was evaluated from the viewpoint of regional connectivity. He stated that the JICA Survey Team would revisit this evaluation but could not guarantee the result.

18. In response to a question from Mr. Muivah, Transport and Public Works Department, Manipur, Dr. Bhattacharya, UNESCAP South and South-West Asia Office, clarified that UNESCAP is not a funding organization but rather it extends technical assistance, conducts research, and provides a forum for discussions among governments.

19. Mr. Tsukada, Embassy of Japan in India, found the argument of connectivity-induced production networks put forward by Dr. De, RIS, to be “intriguing”, but he observed that connectivity is a necessary rather than sufficient condition for production. Mr. Tsukada asked whether there was not a need for a considered industrial policy by the host government for production networks to develop. Dr. De concurred and noted that RIS is now conducting a study on the role of connectivity and domestic industrial policy.

#### **IV. Session III: Panel Discussion on Road and Railway Infrastructure in and around the North East Region**

20. Mr. Tomohide Ichiguchi, Senior Representative, JICA India Office, facilitated the panel discussion.

21. Dr. Chiaki Kuranami, Deputy Team Leader/Regional Transport Infrastructure Facility Planner, JICA Survey Team, made a brief presentation on transport infrastructure in North East India. He noted that while the North East Region is strategically important with many opportunities, there are a number of issues restricting connectivity and delaying project implementation (e.g., varied and difficult terrain, landslides). He explained the Special Accelerated Road Development Programme in North East (SARDP-NE). He also mentioned that the National Highway Authority of India has a number of improvement schemes in the North East, and that ADB and the World Bank are assisting a number of road development projects in the region. He explained the engagement process of the JICA Survey Team, as well as the two-stage evaluation process employed to identify potential projects for JICA assistance/further investigation. He then discussed shortlisted regional road railway corridors and projects in North East India, providing summaries of specific projects and noting that it is not envisaged that JICA will provide assistance for all these projects, but having completed the evaluation process and sifted out lower-performing projects it provides the basis to guide the next steps for JICA. Finally, he jump-started the panel discussion with the following topics: (i) What are the opportunities and constraints in implementing the seven priority projects identified in this survey? (ii) What potential innovative measures can be used to address implementation constraints in the North East Region? Mr. Ichiguchi confirmed that JICA is seriously considering funding certain of the projects mentioned by Dr. Kuranami.

22. Mr. Sudip Chaudhury, Superintending Engineer, Ministry of Road Transport and Highways, Regional Office-Guwahati, presented on road development in the North East Region, by state and by program (e.g., the SARDP-NE). He identified a number of specific issues requiring the attention of state governments (e.g., poor project preparation, the need for state support for advance land acquisition, the need for expedited forest and environmental clearances, delays due to poor performance of contracting agencies). Mr. Ichiguchi observed that funding road development in the region is a key challenge.

23. Mr. M.K. Saha, Director, IWAI, Ministry of Shipping, introduced the Indo-Bangladesh Protocol on Inland Water Transit and Trade, which was agreed pursuant to Article VIII of the trade agreement between the two governments. He observed that the protocol provides alternative connectivity avoiding rail/road connectivity through the already congested chicken's

neck link to the North East; also, it is the only option for the movement of over-dimensional cargo (i.e., cargo too big for a standard container size) to the North East, and is an economical and pollution-free mode of transport for bulk cargo. A problem is that the protocol is renewed or extended only for short periods, and therefore operators and shippers are hesitant to commit to the mode. He also discussed the land customs station at Agartala, reporting that even as an upgraded integrated check post, it is insufficient to serve expected cargo. Mr. Ichiguchi observed that Mr. Saha provided a good introduction to the potential and challenges of regional waterways, a topic not covered by other speakers.

24. Mr. A.S. Garud, Chief Administrative Officer-I (Construction), Northeast Frontier Railway, Office of the General Manager (Construction), Ministry of Railways, presented on railways as a catalyst for development of the North East States. He highlighted services and facilities commissioned in the last ten years, infrastructure projects in progress and planned, and issues of concern and assistance required from the GOI and state governments. Mr. Ichiguchi observed that railway transport is especially important for long-distance, freight transport.

25. Mr. Sagar Krishna Chakraborty, General Manager and Project Director, Bangladesh Railway (BR), thanked PADECO for incorporating its comments; the major points are covered. He stated that BR's financial position is much improved. He reported that ADB is studying seven regional rail projects. Since ADB cannot fund all of these projects, JICA should consider funding some. Dr. Kuranami responded that the JICA Survey Team included three packages of railway projects in the shortlist (two of which cover the seven ADB regional rail projects mentioned by Mr. Chakraborty), but it is up to JICA to proceed from there and further discussions with ADB will be required. Mr. Ichiguchi stated that Mr. Toyama will discuss the matter with BR after returning to Bangladesh.

26. Professor Amar Yumnam, Department of Economics, Manipur University, stated that any project in the North East must earn the trust of the people that it will be implemented sincerely. Mr. Ichiguchi concurred, stating that projects should be owned by the people.

27. Mr. Y. Joykumar, Public Works Department, Manipur, observed that detailed projects reports are not properly prepared and that project sizes are too small. Mr. Chaudhury, MORTH, stated that while there have been some minor improvements, progress is slow. Environmental clearances and land acquisition processes are more difficult in India than in neighboring countries; ideally pre-construction activities would be completed before construction is commenced, but in reality only 30-40% is completed.

28. Mr. Md. Jamal Uddin Ahmed, Joint Secretary Roads Division, Ministry of Communications, Bangladesh Secretariat, noted that the JICA Survey Team prepared a shortlist of 11 road corridors and RO1, RO3, and RO7 were considered priorities. While a number of priority projects are included on the shortlist, he considered that some were not and could be considered for inclusion (e.g., the RO2 missing link). Mr. Ichiguchi stated that the JICA Survey Team's findings should be considered as recommendations, and the Government of Bangladesh can continue discussions with the JICA Bangladesh Office to identify the precise projects that require JICA funding.

## **V. Closing Remarks**

29. Mr. Shinya Ejima, Chief Representative, JICA India Office, made the closing remarks. He expressed gratitude for the collective efforts of all who attended the Seminar, from neighboring countries, from New Delhi, from the North East Region, and from Japan. It was held in Guwahati, a keystone city in the heart of the region; it was not an internal seminar but a regional one involving neighboring countries. The Seminar was practical and results oriented.

JICA stands ready to start financing as soon as possible when projects are ready for implementation; in India, MORTH has already evaluated selected road projects and sent them to the Department of Economic Affairs, Ministry of Finance, for consideration. He observed that the Seminar was “historic” and “epoch making”, since it will be seen as kick starting the enhancement of connectivity among neighboring countries and the North East Region. As many panelists pointed out, the potential of the region is huge; he concluded that there is a need to work on the ground and make sure that benefits of these connectivity projects accrue to the people in the region.

## Appendix 1: Seminar Program

Time	Subject	Speakers
9:30–10:00	<b>Registration</b>	
10:00–11:00	<b>Session 1</b> Venue: TAI Hall	
	<b>Opening Remarks</b>	Mr. Tamaki Tsukada Minister (Economic and Development), Embassy of Japan in India
	<b>Address by</b>	Mr. Pyare Lal Additional Chief Secretary, Government of Assam
	<b>Address by</b>	Mr. M. P. Bezbaruah Hon'ble Member, North Eastern Council, Government of India
	<b>Address by</b>	Mr. V. L. Patankar Director General (Road Development) and Special Secretary, Ministry of Road Transport and Highways, Government of India
	<b>Address by</b>	Mr. Yusuke Murakami Director, Planning Division, South Asia Department, JICA
11:00–11:10	<b>Coffee Break</b>	
11:10–13:50	<b>Session 2</b>	
11:10–11:40	<b>Presentation on JICA Survey Findings on Transport Infrastructure Development for Regional Connectivity in and around the North Eastern Region of India</b>	Mr. Yuichiro Motomura Head of JICA Survey Team
11:40–11:55	<b>Presentation on Experiences of Cross Border Initiatives in and around the North Eastern Region of India</b>	Ms. Kavita Iyengar Economist, India Resident Mission, Asian Development Bank
11:55–12:10	<b>Presentation on Experiences of Cross Border Initiatives in and around the North Eastern Region of India</b>	Dr. Manas Bhattacharya Senior Consultant, ESCAP South and South- West Asia Office
12:10–12:25	<b>Presentation on Experiences of Cross Border Initiatives in and around the North Eastern Region of India</b>	Dr. Prabir De Senior Fellow, Research and Information System for Developing Countries (RIS)
12:25–12:40	<b>Presentation on Experiences of Cross Border Initiatives in and around the North Eastern Region of India</b>	Mr. Kei Toyama Senior Representative, JICA Bangladesh Office
12:40–12:50	<b>Coffee Break</b>	
12:50–13:50	<b>Panel Discussions on Transport Infrastructure in and around North Eastern Region</b>	Mr. Chiaki Kuranami JICA Survey Team  Mr. Sudip Chaudhury Superintending Engineer, Ministry of Road Transport and Highways, Regional Office- Guwahati  Mr. M.K. Saha Director, Traffic, Inland Waterways Authority of India, New Delhi  Mr. A.S.Garud Chief Administrative Officer NF Railways
	<b>Open Discussions</b>	Facilitated by Mr. Tomohide Ichiguchi Senior Representative, JICA India Office
13:50–13:55	<b>Closing Remarks</b>	Mr. Shinya Ejima Chief Representative, JICA India Office
13:55–14:55	<b>Lunch</b>	



## Appendix 2: List of Participants

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### GOVERNMENT OF INDIA

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**Mr. V.L. Patankar**  
Director General (Roads) & Special Secretary  
Ministry of Road Transport and Highways

**Mr. Sudip Chowdhury**  
Superintending Engineer (SE)  
Ministry of Road Transport and Highways

**Mr. Rajnish Kapur**  
Superintending Engineer (SE)  
Ministry of Road Transport and Highways

**Mr. M.P. Bezbaruah**  
Hon'ble Member  
North Eastern Council

**Mr. Arun Roy**  
Director  
Inland Water Authority of India

**Mr. M.K. Saha**  
Director  
Inland Water Authority of India

**Mr. P.K.H. Singh**  
BRES  
Advisor (Transport and Communication)

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### GOVERNMENT OF BANGLADESH

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**Mr. Sagar Krishna Chakraborty**  
General Manager  
Project Director, Regional Connectivity and  
Integration (Rail Component) Project  
Bangladesh Railway

**Mr. Abdul Jalil**  
Senior Assistant Secretary  
Ministry of Railways

**Mr. Md. Jamal Uddin Ahmed**  
Joint Secretary  
Ministry of Communication, Bangladesh  
Secretariat

**Mr. Shishir Kanti Routh**  
Executive Engineer  
Roads and Highways Department

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### GOVERNMENT OF BUHTAN

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**Mr. Kunzang Wangdi**  
Officiating Director  
Department of Roads  
Ministry of Works and Human Settlement

**Mr. Dophu Dukpa**  
Senior Regional Transport Officer  
Ministry of Information and Communications

**Mr. Chunjur Tshering**  
Deputy Collector  
Department of Revenue and Customs

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### GOVERNMENT OF NEPAL

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**Mr. Rabindra Nath Shrestha**  
Joint Secretary  
Ministry of Physical Infrastructure and Transport

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### GOVERNMENT OF THAILAND

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**Ms. Motana Kobkul**  
Director of Planning Bureau  
Ministry of Transport

**Ms. Sakuntha Supakoonsrisak**  
Policy and Planning Analyst  
Ministry of Transport

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### GOVERNMENT OF ASSAM

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**Ajay Barman**  
Executive Engineer (EE)  
Public Works Department

**J. Thakuria**  
Assistant Engineer (AE)  
Public Works Department

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**GOVERNMENT OF NAGALAND**

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**Mr. T. Puro**  
Superintending Engineer (SE)  
Public Works Department

**Mr. Imnajungba**  
Executive Engineer (EE)  
Public Works Department

**Mr. Hozeto**  
Executive Engineer (EE)  
Public Works Department

**Mr. Vikhipu**  
Engineer, Sub-Divisional Officer (SDO)  
Public Works Department

**Mr. Chingkato**  
Engineer, Sub-Divisional Officer (SDO)  
Public Works Department

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**GOVERNMENT OF MANIPUR**

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**Mr. Ram Muivah**  
Principal Secretary  
Transport and Public Works Department

**Mr. Y. Joykumar**  
Project Director  
Public Works Department

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**GOVERNMENT OF MIZORAM**

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**Mr. C. Lalchhuana**  
Joint Secretary  
Public Works Department

**Mr. R. Vanlalutluanga**  
Engineer in Chief  
Public Works Department

**Mr. R.L. Alrinuanga**  
Superintending Engineer (SE)  
Public Works Department

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**GOVERNMENT OF MEGHALAYA**

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**Mr. Bruce Marak**  
Superintending Engineer (SE)  
Public Works Department

**Mr. Megh Tura**  
Superintending Engineer (SE)  
Public Works Department

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**NORTHEAST FRONTIER RAILWAY**

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**Mr. A.S. Garud**  
Chief Administrative Officer

**Mr. Harpal Singh**  
Chief Engineer

**Mr. Ravi Amrahi**  
Deputy Chief Engineer

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**GUWAHATI JAL BOARD**

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**Mr. A. Amit Sahai**  
Managing Director (MD)

**Mr. C.K. Bhuyan**  
Assistant Deputy Director (ADD)

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**ASIAN DEVELOPMENT BANK, INDIA RESIDENT MISSION**

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**Ms. Kavita S. Iyengar**  
Economist

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**UNITED NATIONS ECONOMICS AND SOCIAL COMMISSION FOR ASIA AND THE PACIFIC**

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**Mr. Manas Bhattacharya**  
Senior Consultant

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**RESEARCH AND INFORMATION SYSTEM FOR DEVELOPING COUNTRIES**

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**Mr. Prabir De**  
Senior Fellow

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**BANGLADESH INSTITUTE OF DEVELOPMENT STUDIES**

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**Mr. Mohammad Yunus**  
Senior Research Fellow

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**EMBASSY OF JAPAN IN INDIA**

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**Mr. Tamaki Tsukada**  
Minister (Economic and Development)

**Mr. Shoichiro Yuyama**  
First Secretary (Economic and Finance)

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**JAPAN INTERNATIONAL COOPERATION AGENCY**

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**Mr. Yusuke Murakami**  
Director  
South Asia Department

**Ms. Arisa Watanabe**  
Regional Officer  
South Asia Department

**Mr. Yuichiro Sano**  
Assistant Director  
South Asia Department

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**JICA INDIA OFFICE**

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**Mr. Shinya Ejima**  
Chief Representative

**Mr. Tomohide Ichiguchi**  
Senior Representative

**Ms. Yui Nakamura**  
Project Formulation Advisor

**Mr. Anurag Sinha**  
Senior Development Specialist

**Ms. Miho Yoshikawa**  
Representative

**Mr. Mihir Sorti**  
Senior Development Specialist

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**JICA EXPERTS**

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**Mr. Keita Nakasu**  
Chief Advisor for Highway/Expressway Policy,  
MORTH

**Mr. Tatsuo Takano**  
National Highway Authority of India

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**JICA BANGLADESH OFFICE**

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**Mr. Kei Toyama**  
Senior Representative

**Mr. Suman Gupta**  
Senior Project Manager

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**JICA BHUTAN OFFICE**

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### Appendix 3 Assessment of Major Border Crossing Points in the Region

The following table assesses major border crossing points in the region in terms of traffic, delay time (i.e., border efficiency), and corridor priority. An overall priority for border crossing point is then suggested. Current status, possible project elements, and other possible development partners are then set out.

#### Assessment of Border Crossings in the Region

Border Crossing	Traffic	Delay Time	Priority of Corridor	Overall Preliminary (Notional) Priority Score	Current Status	Development Partners
<i>Bangladesh-India</i>						
Benapole–Petrapole	H (3)	H (3)	H (3)	9	Petrapole is planned as a Phase 1 Indian ICP (there are significant space limitations there). Benapole is managed by BLPA; it serves traffic in both directions and is the main land gateway between the two countries (serving about 70% of the total trade in terms of value, although only about 23% in terms of tonnage); the Benapole land port covers 7.1 ha, including 42,000 m <sup>2</sup> of warehousing allocated to exports (as well as a truck yard with capacity for 700 trucks) and 18,000 m <sup>2</sup> for imports (including a truck yard with capacity for 150 trucks) with a storage capacity of 2,000 tons. An additional 12 ha is to be acquired. ADB will assist border post improvements at Benapole as part of the Bangladesh SASEC Road Connectivity Project. While trade is expected to grow at other BCPs, Benapole is expected to remain Bangladesh's main gateway.	ADB
Bhomra–Ghojdnaga	H (3)	H (3)	H (3)	9	Bhomra is Bangladesh's second largest road border crossing connecting with Kolkata and operates in parallel, rather than in competition with, Benapole (farther north); the potential of this BCP is limited by restrictions on the products that can be handled; Bhomra was originally a simple land customs station but was declared a land port in 2001; current facilities at Bhomra are basic and have limited potential to adapt to modern	

Border Crossing	Traffic	Delay Time	Priority of Corridor	Overall Preliminary (Notional) Priority Score	Current Status	Development Partners
					business and logistical processes; the immediate access road (3 km) is in poor condition; BLPA has acquired 4.7 ha for improvement of this facility, which is required because Benapole is congested; Bhomra is located shorter to Kolkata by at least 15 km compared to Benapole and will be closer to Dhaka than will Benapole after construction of the Padma Bridge.	
Akhaura–Agartala	H (3)	H (3)	H (3)	9	Agartala is a Phase I Indian ICP (opened in November 2013) and India is to assist development of an ICP at Akhaura on the Bangladeshi side; the border offers significant potential since it has direct road and rail links with Chittagong Port; development of the border is a priority of the Government of India.	India
Sona Masjid–Mahdipur	H (3)	H (3)	M (2)	8	Although Sona Masjid has been operational since 1998, no infrastructure or port facilities have been developed by BLPA or Bangladesh Customs; rather the existing infrastructure has been provided by about 50 private sector operators; there are open yards for temporary storage of stone, boulders, and coal, and warehouses for chemicals, agricultural commodities, and seeds; due to the limited inspection facilities, some import items are restricted, as at Burimari below; cold storage facilities have been recommended; infrastructure on the Indian side is limited.	
Burimari–Chengrabandha	M (2)	H (2)	M (2)	6	Chengrabandha is planned as a Phase II Indian ICP (infrastructure is limited at present); this BCP connects Bhutan with Bangladesh via the “chicken’s neck”, the Indian corridor between Bangladesh and Bhutan; despite restrictions on traffic, the BCP is expanding, although serving mainly low-value traffic (e.g., stone); ADB will assist BCP improvements	ADB

Border Crossing	Traffic	Delay Time	Priority of Corridor	Overall Preliminary (Notional) Priority Score	Current Status	Development Partners
					at Burimari as part of the Bangladesh SASEC Road Connectivity Project.	
Hili-Hili	M (2)	H (2)	L (1)	5	Hili serves border trade between Bangladesh and India, including boulders/stone, pulses, fruits, and food grains to Bangladesh and fruit juice, garments, and molasses to India; Hili is planned as a Phase II Indian ICP and has been operated as a BOT concession on the Bangladeshi side since 2005; there are over 50 privately managed warehouses and open yards; Hili suffers from imposition of a restricted list of exports; no major public investment is envisaged here for the foreseeable future.	
Tamabil–Dawki	M (2)	H (2)	H (3)	7	Dawki is a Phase 1 Indian ICP (although infrastructure is limited at present); BLPA has been considering inviting private investors to operate a BOT land port at Tamabil; traffic includes coal, limestone, boulders, and oranges from Bhutan (in season); the overall border operation is well run and no large investment projects are envisaged.	
Banglabandha–Phulbari	L (1)	H (3)	H (3)	7	This BCP mainly serves transit between Nepal and Bangladesh; traffic with India is local and is unstable depending on various administrative issues. BLPA constructed a building at Banglabandha with some associated facilities (offices, warehouse, barracks, parking yard, and boundary wall, on 5 ha). It has been suggested that BLPA should construct a cold storage facility at Banglabandha.	
<i>Bangladesh–Myanmar</i>						
Teknaf–Mongdu	M (2)	M (2)	H (3)	7	Traffic is mainly from Myanmar to Bangladesh, with the main commodities including lentils, paddy, bamboo, spices, fish, and electric goods; a concession was granted in 2006 for the (successful) construction of jetties and warehouses.	

Border Crossing	Traffic	Delay Time	Priority of Corridor	Overall Preliminary (Notional) Priority Score	Current Status	Development Partners
<i>Bhutan–India</i>						
Phuentsholing–Jaigaon	H (3)	M (2)	H (3)	8	This BCP serves over 85% of Bhutan’s import trade by value and volume and 65% of its export trade by value and volume; traffic is transshipped to smaller Bhutanese trucks (two axles carrying ten tons) en route to Thimphu or the Pasakha industrial estate; with ADB assistance, a mini dry port is to be constructed along with a new border gate to alleviate congestion in the city, as well as a new road connecting the industrial estate directly with India. Jaigaon is planned as a Phase II Indian ICP.	ADB
Gomtu–Makrapara	L (1)	L (2)	L (1)	4	Gomtu is one of a series of BCPs between West Bengal and Samtse in Bhutan; most of the traffic serves cement factories.	
Samdrup Jongkhar–Daranga	M (2)	L (1)	H (3)	6	Samdrup Jongkhar is the main gateway to eastern Bhutan; it includes Samdrup Jongkhar gate itself and Matnaga/Phuntshok Rabtenling gate; export traffic consisting mainly of gypsum passes the former gate, while the latter gate is used for the export ferro silicon and coal; an industrial park is planned in Samdrup Jongkhar, which will lead to increased traffic.	
<i>Myanmar–India</i>						
Tamu–Moreh	M (2)	M (2)	H (3)	7	Moreh is a Phase 1 Indian ICP; there is only border trade of an agreed list of commodities at this BCP.	
<i>Myanmar–Thailand</i>						
Myawaddy–Mae Sot	M (2)	L (1)	NA	NA	A second Thailand–Myanmar Friendship Bridge is under construction; the Greater Mekong Subregion Cross-Border Transport Agreement has not yet been implemented at this BCP.	
<i>Nepal–India</i>						
Birgunj–Raxual	H (3)	M (2)	M (2)	7	Raxual in the Indian state of Bihar is a Phase 1 Indian ICP (the first India–Nepal ICP to be constructed, with completion scheduled by the end of 2014) and India is to assist development of an ICP at Birgunj; the BCP is the main	World Bank



Border Crossing	Traffic	Delay Time	Priority of Corridor	Overall Preliminary (Notional) Priority Score	Current Status	Development Partners
					gateway for Nepal of consumer goods from India and third countries; Birgunj now includes a rail-based ICD and a road-based customs terminal; customs inspection is undertaken in a 2.6 ha yard adjacent to the border; all cargo from third countries is unloaded for customs inspection and reloaded onto Nepalese trucks; the World Bank has prepared a loan to Nepal for a Nepal–India Trade and Transport Facilitation Project, which among other things, will improve the infrastructure at Birgunj (and Bhairahawa) ICD, as well as SPS laboratories.	
Biratnagar–Jogbani	H (3)	M (2)	H (3)	8	Jogbani is a Phase 1 Indian ICP and India is to assist development of an ICP at Biratnagar.	
Belahiya–Sunauli (Bhairahawa)	H (3)	M (2)	H (3)	7	The Belahiya–SunauliNautanawa BCP is about 8 km from Bhairahawa; Sunauli is planned as a Phase 2 Indian ICP, and India is to assist development of an ICP on the Nepalese side. Heavy rains and use have caused severe damage to the surface of the ICP pavement. This is one of busiest BCPs for bilateral trade and passengers due to the proximity of Lumbini, the birthplace of Lord Gautam Buddha. The World Bank has prepared a loan to Nepal for a Nepal–India Trade and Transport Facilitation Project, which among other things, will improve the infrastructure at Bhairahawa (and Birgunj) ICD, and for the improvement of SPS laboratories.	
Kakarbhitta–Panitanki	M (2)	L (3)	H (3)	8	Panitanki is planned as a Phase 3 India ICP. Located in Nepal’s eastern development region, the BCP has strategic importance since it can serve not only traffic from India, but also provide access to Bangladesh and Bhutan. A new ICD was completed at Kakarbhitta in 2010 with ADB assistance, with operation by	ADB

Border Crossing	Traffic	Delay Time	Priority of Corridor	Overall Preliminary (Notional) Priority Score	Current Status	Development Partners
					the Nepal Intermodal Transport Development Board. Trade with Bangladesh has been limited due to restrictions on Nepalese trucks entering Bangladesh to unload.	
Nepalgunj–Rupaidiha	M (2)	M (2)	M (2)	6	This BCP is located in the far western Terai region of Nepal. Nepal Customs recently commenced work on a facility at the border to replace a facility located 1 km from the border.	

Abbreviations: ADB = Asian Development Bank, BCP = border crossing point, BLPA = Bangladesh Land Port Authority, BOT = build-operate-transfer, ICD= inland clearance depot, ICP = integrated check post

Notes: (i) Border crossings within a country pair listed in approximate order of cross -border traffic. (ii) Traffic (2012): below 100,000 tons = low (L), 100,000–800,000 tons = medium (M), and over 800,000 tons = high (H). (iii) Delay time: less than 1 day (L), 1–2 days = medium (M), and more than 2 days = high (H). (iv) Corridor priority: unlisted (U), longlisted (only) (L), and shortlisted (S). (v) Overall priority at this stage notionally assessed by (a) assigning 3 points for high traffic, 2 points for medium traffic, and 1 point for low traffic; (b) assigning 3 points for high (long) delay time, 2 points for medium low time, and 1 point for low delay time; (c) assigning 3 points for border crossing points on shortlisted corridors, 2 points for border crossing points on longlisted corridors (only), and 1 point for border crossing points on unlisted corridors.

Source(s): JICA Survey Team [drawing on various sources, e.g., (i) PADECO Co., Ltd., *TA No. 6435-REG: Preparing the South Asia Subregional Cooperation. Transport Logistics and Trade Facilitation Project (Cross-Border Regime Component), Final Report*, November 2011; (ii) Egis International with Egis India, *ADB TA-7650 (REG): Regional Transport Development in South Asia, Draft Final Report*, June 2013, pp. 29–32, 40 (iii) Prabir De, Abdur Rob Khan, and Sachin Chaturvedi, *Transit and Trade Barriers in Eastern South Asia: A Review of the Transit Regime*, 2008; and (iv) Prabir De, *Performance of Strategic Border-Crossings*, Asia-Pacific Research and Training Network on Trade Working Paper Series, No. 56, 2008, pp. 35–40.]

## Appendix 4 Calculation of Gains from Transport Cost Reductions Assuming the Implementation of Through Transport Arrangements

In this appendix the benefits of through transport including transport cost reductions for Bhutan, India, and Nepal from developing functional corridors for transit traffic through Bangladesh and the gains of Bangladesh from transport business opportunities have been estimated assuming the implementation of through transport arrangements. This exercise has been undertaken based on the unit transport cost per distance by mode by country and current transport volume by route developed in ADB TA-7650: Regional Transport Development in South Asia (Draft Final Report, June 2013). The transport routes considered in this estimation are basically the same as those considered in the ADB TA. On the other hand, some assumptions in this appendix on transport cost by route are different from those made by the ADB TA. For example, although transshipment time at some borders is assumed to be 24 hours by the ADB TA, it was assumed to be zero in this estimation because realization of the optimal situation regarding through transport was assumed. Information on transport distance by country by mode by route was also compiled from various sources because such data were not shown clearly in the ADB TA report. Transport volume by route after the development (i.e., with realization of through transport in the region) was estimated in this study and this differs from the transport volume by route in the ADB TA, which applied different assumptions.

The subject transport routes and transport cost<sup>1</sup> and generalized transport cost<sup>2</sup> by route are shown in Tables A4.1, A4.2, and A4.3. For calculation of generalized transport costs consisting of transport cost and cargo time cost, the cargo time value of USD 6.69/hour/truck calculated described in the ADB TA was applied along with an assumed average cargo load of 14 tons per truck. Transport speed was assumed to be 30 kph for road, 20 kph for railway, and 10 kph for inland waterway on average including dwell time and time for rest.

Considering the transport cost and generalized cost by route, transport volume after development by origin and destination pair was estimated. If the route of the lowest transport cost and that of the lowest generalized cost are the same for one origin and destination pair, it was assumed that 100% of the traffic between that origin and destination pair would take that route. On the other hand, if the route of the lowest transport cost and that of the lowest generalized cost are different, it was assumed that some percentage of the total traffic between that origin and destination pair would take the route of the lowest transport cost and the rest would take the one of the lowest generalized cost. For example, in the case of traffic between Phuentsholing and Mongla Port, it was estimated that 70% of traffic would pass take BH-RO2 (a road route), which has the lowest generalized cost, while 30% would go take BH-RA2 (a railway route), which has the lowest transport cost. For traffic between Birgunj and Mongla Port, it was assumed that 40% would take NE-RO1 (a road route) and 60% would take NE-RA2 (a railway route). In the case of transport between Biratnagar and Mongla Port, it was estimated that 20% would go by NE-RO3 (a road route) while 80% would pass through NE-RA4 (a railway route).

The calculation of the benefits from reduction in transport cost and generalized cost by route estimated from traffic volume by route above and cost per route per ton is shown in Table A4.4.

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<sup>1</sup> Transport cost was defined as the sum of out-of-pocket cost for land transport and port charges.

<sup>2</sup> Generalized cost was defined as the sum of transport cost and cargo time cost. Cargo time cost was assumed proportional to transport time and weight.

**Table A4.1: Road Corridors Considered for Estimation of Gains**

	Mode	Corridor			
		Corridor ID	Origin/Destination	Route	
Before development	Road	BH-RO1	Phuentsholing	Kolkata Port	via Jaigaon, Jalpaiguri, Siliguri, Kishanganj, Raidani, Maldah, Baharampur, Krishnanagar, Barasat
	Road	BH-RO4(1) Before	Sandup Jongkhar	Kolkata Port Kolkata City	via Daranga, Rangia, Bongaigaon, Jalpaiguri, Siliguri, Kishanganj, Maldah, Baharampur, Krishnanagar, Barasat (same as above)
	Road	BH-RO4(2) Before	India NE States (Guwahati)	Kolkata Port Kolkata City	(same as above) (same as above)
	Road	NE-RO1	Birguni	Kolkata Port	via Raxaul, Motihari, Muzaffarpur, Bihat, Bihar Sharif, Nawada, Barhi, Bardhaman, Howrah
	Road	NE-RO2	Biratnagar	Kolkata Port	via Jogbani, Forbesganj, Purnia, Dalkhola, Maldah, Baharampur, Krishnanagar, Barasat
	Road	BH-RO1 (same)	Phuentsholing	Kolkata Port	via Jaigaon, Jalpaiguri, Siliguri, Kishanganj, Raidani, Maldah, Baharampur, Krishnanagar, Barasat
After development	Road	BH-RO2	Phuentsholing	Mongla Port	via Jaigaon, Burimari, Changrabandha, Bogra, Nator, Kushtia, Jessore, Khulna
	Road	BH-RO3	Phuentsholing	Chittagong Port	via Jaigaon, Burimari, Changrabandha, Bogra, Siragani, Tangail, Dhaka, Comilla, Feni
	Rail	BH-RA2	Phuentsholing	Mongla Port	via Jaigaon, Siliguri, Haldibari, Nilphamari, Jaypurhat, Jessore, Khulna
	Inland Waterway	BH-IW-1b	Phuentsholing	Chittagong Port	Road to Jogghopa via Jaigaon. The Jamuna River to Baghabari. Then, the Padma River, the Meghna River and Sandwip Channel.
	Road	BH-RO4(1) After	Sandup Jongkhar	Kolkata Port Kolkata City	via Shillong, Sylhet, Dhaka (same as above)
	Road	BH-RO4(2) After	India NE States (Guwahati)	Kolkata Port	(same as above)
	Road	BH-RO5(1)	Sandup Jongkhar	Chittagong Port	via Daranga, Guwahati, Shillong, Silchar, Comilla, Feni
	Road	BH-RO5(2)	India NE States (Guwahati)	Chittagong Port	via Shillong, Silchar, Comilla, Feni
	Road	NE-RO1 (same)	Birguni	Kolkata Port	via Raxaul, Motihari, Muzaffarpur, Bihat, Bihar Sharif, Nawada, Barhi, Bardhaman, Howrah
	Inland Waterway	BH-IW-3b	Sandup Jongkhar	Chittagong Port	Road to Guwahati via Daranga. The Jamuna River to Jogghopa, Dhubri and Baghabari. Then, the Padma River, the Meghna River and Sandwip Channel.
	Rail	NE-RA2	Birguni	Mongla Port	via Raxaul, Muzaffarpur, Bihat, Hathida, Asansol, Bardhaman, Howrah
	Inland Waterway	NE-IW-1	Birguni	Kolkata Port	Road to Patna via Raxaul. River to Kolkata via Ganga, Bhagirathi and Hoodhley.
	Road	NE-RO2 (same)	Biratnagar	Kolkata Port	via Jogbani, Forbesganj, Purnia, Dalkhola, Maldah, Baharampur, Krishnanagar, Barasat
	Road	NE-RO3	Biratnagar	Mongla Port	via Jogbani, Forbesganj, Purnia, Dalkhola, Maldah, Sonamasjid, Rajshahi, Natore, Jessore, Kalna
	Rail	NE-RA4	Biratnagar	Mongla Port	via Joghani, Forbesganj, Purnia, Katihar, Maldah, Singhabad, Rohanpur, Rajshahi, Darsana, Jessore, Khulna

Source: Based on Egis International in association with Egis India, *ADB TA-7650 (REG): Regional Transport Development in South Asia, Draft Final Report*, June 2013

**Table A4.2: Calculation of Transport Cost by Route**

	Mode	Route		Distance (km)						Transport cost by country				Transport cost by route (US\$/ton)			Port charge (US\$/ton)	Total transport cost (US\$/ton)		
		Corridor ID	Origin/Destination	(Road)			(Rail/ Waterway)			Total	(Road)		(Rail/ Waterway)		Bangla	India			Total	
				Bangla	India	total	Bangla	India	total		Bangla	India	Bangla	India						
Before development	Road	BH-RO1	Phuentsholing	Kolkata Port	0	768	768	0	0	0	768	0.037	0.051	0	0	0.00	39.17	39.17	5.63	44.80
	Road	BH-RO4(1) Before	Sandup Jongkhar	Kolkata Port	0	1,118	1,118	0	0	0	1,118	0.037	0.051	0	0	0.00	57.02	57.02	5.63	62.65
				Kolkata City	0	1,118	1,118	0	0	0	1,118	0.037	0.051	0	0	0.00	57.02	57.02	0.00	57.02
	Road	BH-RO4(2) Before	India NE States (Guwahati)	Kolkata Port	0	1,040	1,040	0	0	0	1,040	0.037	0.051	0	0	0.00	53.04	53.04	5.63	58.67
				Kolkata City	0	1,040	1,040	0	0	0	1,040	0.037	0.051	0	0	0.00	53.04	53.04	0.00	53.04
Road	NE-RO1	Birgunj	Kolkata Port	0	849	849	0	0	0	849	0.037	0.051	0	0	0.00	43.30	43.30	5.63	48.93	
Road	NE-RO2	Biratnagar	Kolkata Port	0	607	607	0	0	0	607	0.037	0.051	0	0	0.00	30.96	30.96	5.63	36.59	
After development	Road	BH-RO1 (same)	Phuentsholing	Kolkata Port	0	768	768	0	0	0	768	0.037	0.051	0	0	0.00	39.17	39.17	5.63	44.80
	Road	BH-RO2	Phuentsholing	Mongla Port	598	110	708	0	0	0	708	0.037	0.051	0	0	22.13	5.61	27.74	4.61	32.35
	Road	BH-RO3	Phuentsholing	Chittagong Port	684	110	794	0	0	0	794	0.037	0.051	0	0	25.31	5.61	30.92	9.13	40.05
	Rail	BH-RA2	Phuentsholing	Mongla Port	0	160	160	0	560	560	720	0.037	0.051	0.040	0.040	0.00	30.56	30.56	4.61	35.17
	Inland Waterway	BH-W-1b	Phuentsholing	Chittagong Port	0	150	150	780	0	780	930	0.037	0.051	0.015	0.023	11.70	7.65	19.35	9.13	44.90
	Road	BH-RO4(1) After	Sandup Jongkhar	Kolkata Port	543	363	906	0	0	0	906	0.037	0.051	0	0	20.09	18.51	38.60	5.63	44.23
				Kolkata City	543	363	906	0	0	0	906	0.037	0.051	0	0	20.09	18.51	38.60	0.00	38.60
	Road	BH-RO4(2) After	India NE States (Guwahati)	Kolkata Port	543	282	825	0	0	0	825	0.037	0.051	0	0	20.09	14.38	34.47	5.63	40.10
				Kolkata City	543	282	825	0	0	0	825	0.037	0.051	0	0	20.09	14.38	34.47	0.00	34.47
	Road	BH-RO5(1)	Sandup Jongkhar	Chittagong Port	457	268	725	0	0	0	725	0.037	0.051	0	0	16.91	13.67	30.58	9.13	39.71
	Road	BH-RO5(2)	India NE States (Guwahati)	Chittagong Port	457	187	644	0	0	0	644	0.037	0.051	0	0	16.91	9.54	26.45	9.13	35.58
	Road	NE-RO1 (same)	Birgunj	Kolkata Port	0	849	849	0	0	0	849	0.037	0.051	0	0	0.00	43.30	43.30	5.63	48.93
	Inland Waterway	BH-W-3b	Sandup Jongkhar	Chittagong Port	0	81	81	700	260	960	1,041	0.037	0.051	0.015	0.023	10.50	10.11	20.61	9.13	29.74
	Rail	NE-RA2	Birgunj	Mongla Port	0	0	0	0	941	941	941	0.037	0.051	0.040	0.040	0.00	37.64	37.64	4.61	42.25
	Inland Waterway	NE-W-1	Birgunj	Kolkata Port	0	202	202	0	905	905	1,107	0.037	0.051	0.015	0.023	0.00	31.12	31.12	5.63	48.54
Road	NE-RO2 (same)	Biratnagar	Kolkata Port	0	607	607	0	0	0	607	0.037	0.051	0	0	0.00	30.96	30.96	5.63	36.59	
Road	NE-RO3	Biratnagar	Mongla Port	413	271	684	0	0	0	684	0.037	0.051	0	0	15.28	13.82	29.10	4.61	33.71	
Rail	NE-RA4	Biratnagar	Mongla Port	0	0	0	0	626	626	626	0.037	0.051	0.040	0.040	0.00	25.04	25.04	4.61	29.65	

Note: Unit transport cost per distance and port charges were based on Egis International in association with Egis India, *ADB TA-7650 (REG): Regional Transport Development in South Asia, Draft Final Report*, June 2013.

Source: This Survey

**Table A4.3: Calculation of Generalized Cost by Route**

	Mode	Route			Transport time (hour)					Cargo time cost per route (US\$/ton)	Generalized cost (US\$/ton)
		Route ID	Origin/Destination		(Road)	(Rail/Waterway)	Transshipment/waiting	Border-crossing	Total		
Before development	Road	BH-RO1	Phuentsholing	Kolkata Port	25.60	0.00	0.00	0.00	25.60	12.29	57.09
	Road	BH-RO4(1) Before	Sandup Jongkhar	Kolkata Port	37.27	0.00	0.00	0.00	37.27	17.89	80.54
				Kolkata City	37.27	0.00	0.00	0.00	37.27	17.89	74.91
	Road	BH-RO4(2) Before	India NE States	Kolkata Port	34.67	0.00	0.00	0.00	34.67	16.64	75.31
				Kolkata City	34.67	0.00	0.00	0.00	34.67	16.64	69.68
	Road	NE-RO1	Birgunj	Kolkata Port	28.30	0.00	0.00	0.00	28.30	13.58	62.51
Road	NE-RO2	Biratnagar	Kolkata Port	20.23	0.00	0.00	0.00	20.23	9.71	46.30	
After development	Road	BH-RO1 (same)	Phuentsholing	Kolkata Port	25.60	0.00	0.00	0.00	25.60	12.29	57.09
	Road	BH-RO2	Phuentsholing	Mongla Port	23.60	0.00	0.00	0.00	23.60	11.33	43.67
	Road	BH-RO3	Phuentsholing	Chittagong Port	26.47	0.00	0.00	0.00	26.47	12.70	52.75
	Rail	BH-RA2	Phuentsholing	Mongla Port	5.33	36.00	0.00	0.00	41.33	19.84	55.01
	Inland Waterway	BH-IW-1b	Phuentsholing	Chittagong Port	5.00	78.00	0.00	0.00	83.00	39.84	84.74
	Road	BH-RO4(1) After	Sandup Jongkhar	Kolkata Port	30.20	0.00	0.00	0.00	30.20	14.50	58.73
				Kolkata City	30.20	0.00	0.00	0.00	30.20	14.50	53.10
	Road	BH-RO4(2) After	India NE States	Kolkata Port	27.50	0.00	0.00	0.00	27.50	13.20	53.30
				Kolkata City	27.50	0.00	0.00	0.00	27.50	13.20	47.67
	Road	BH-RO5(1)	Sandup Jongkhar	Chittagong Port	24.17	0.00	0.00	0.00	24.17	11.60	51.31
	Road	BH-RO5(2)	India NE States	Chittagong Port	21.47	0.00	0.00	0.00	21.47	10.30	45.88
	Road	NE-RO1 (same)	Birgunj	Kolkata Port	28.30	0.00	0.00	0.00	28.30	13.58	62.51
	Inland Waterway	BH-IW-3b	Sandup Jongkhar	Chittagong Port	2.70	96.00	0.00	0.00	98.70	47.38	77.12
	Rail	NE-RA2	Birgunj	Mongla Port	0.00	47.05	0.00	0.00	47.05	22.58	64.83
	Inland Waterway	NE-IW-1	Birgunj	Kolkata Port	6.73	90.50	0.00	0.00	97.23	46.67	95.21
	Road	NE-RO2 (same)	Biratnagar	Kolkata Port	20.23	0.00	0.00	0.00	20.23	9.71	46.30
Road	NE-RO3	Biratnagar	Mongla Port	22.80	0.00	0.00	0.00	22.80	10.94	44.66	
Rail	NE-RA4	Biratnagar	Mongla Port	0.00	31.30	0.00	0.00	31.30	15.02	44.67	

Note: Unit cargo time cost per distance is based on Egis International in association with Egis India, *ADB TA-7650 (REG): Regional Transport Development in South Asia, Draft Final Report*, June 2013.

Source: This Survey

**Table A4.4: Calculation of Benefits from a Reduction in Transport Cost and Generalized Cost Reduction by Route  
(Assuming Traffic Volumes of 2011)**

Beneficiary (country)	Origin/Destination		Current Situation				Situation after Development				Cost Reduction per ton		Annual transport volume estimated (ton, 2011)	Total Cost Reduction	
			Current Route	Mode	Current Cost (US\$/ ton)	Generaliz ed cost (US\$/ ton)	Route after development	Mode	Cost after development (US\$/ton)	Generalized cost after development (US\$/ton)	Transport Cost Reduction (US\$/ton)	Generalized cost reduction (US\$/ton)		Annual transport cost reduction (US\$, 2011)	Annual general ized cost reduction (US\$, 2011)
Bhutan	Phuentsholing	Mongla Port	BH-RO1	Road	44.80	57.09	BH-RO2	Road	32.35	43.67	12.45	13.42	94,862	1,181,031	1,273,047
Bhutan	Phuentsholing	Mongla Port	BH-RO1	Road	44.80	57.09	BH-RA2	Rail	30.77	55.01	14.03	2.08	40,655	570,391	84,563
Bhutan	Sandup Jongkhar	Kolkata City	BH-RO4(1) Before	Road	57.02	74.91	BH-RO4(1) After	Road	38.60	53.10	18.42	21.81	832	15,316	18,135
India	India NE States	Kolkata City	BH-RO4(2) Before	Road	53.04	69.68	BH-RO4(2) After	Road	34.47	47.67	18.57	22.01	539,677	10,021,804	11,878,293
Bhutan	Sandup Jongkhar	Chittagong Port	BH-RO4(1) Before	Road	62.65	80.54	BH-RO5(1)	Road	39.71	51.31	22.94	29.23	7,484	171,671	218,743
India	India NE States	Chittagong Port	BH-RO4(2) Before	Road	58.67	75.31	BH-RO5(2)	Road	35.58	45.88	23.09	29.43	4,857,094	112,150,298	142,944,273
Nepal	Birgunj	Mongla Port	NE-RO1	Road	48.93	62.51	NE-RO1	Road	48.93	62.51	0.00	0.00	211,721	0	0
Nepal	Birgunj	Mongla Port	NE-RO1	Road	48.93	62.51	NE-RA2	Rail	42.25	64.83	6.68	-2.32	317,582	2,121,446	-736,790
Nepal	Biratnagar	Mongla Port	NE-RO2	Road	36.59	46.30	NE-RO3	Road	33.71	44.66	2.88	1.64	119,445	344,003	195,890
Nepal	Biratnagar	Mongla Port	NE-RO2	Road	36.59	46.30	NE-RA4	Rail	29.65	44.67	6.94	1.63	477,782	3,315,804	778,784

Source: This Survey

Based on the calculation of benefits from transport cost and generalized cost by route shown in Table A4.4, the total (annual) benefits of each country were calculated as shown in Table A4.5.

**Table A4.5: Estimated Benefits from Transport Cost and Generalized Cost Reduction by Country (Assuming 2011 Traffic Volumes)**

Country	Benefits from Transport Cost Reduction (USD)	Benefits from Generalized Cost Reduction (USD)
Bhutan	1,938,409	1,594,487
India	122,172,102	154,822,566
Nepal	5,781,253	237,885
<b>Total</b>	<b>129,891,765</b>	<b>156,654,938</b>

Source: This Survey

Also, the gains of Bangladesh were calculated as a sum of: (i) income from port charges from cargo from/to Bhutan, India, and Nepal; and (ii) income from land transport enterprises of Bangladesh for traffic from/to Bhutan, India and, Nepal. It was assumed that opportunities for land transport business for transporters in Bangladesh will be proportional to the transport distance in Bangladesh within the total transport distance. Under this assumption, the (annual) income for land transport enterprises in Bangladesh for traffic from/to Bhutan, India, and Nepal was estimated as USD 95.2 million. In addition, the (annual) income of Bangladesh from port charges was estimated as USD 50.2 million as shown in Table A4.6. Thus, the total (annual) gains to Bangladesh were estimated as USD 145.4 million.

**Table A4.6: Estimated Income of Bangladesh from Port Charges (Assuming 2011 Traffic Volumes)**

	Port Charge (USD/ton)	Transport volume	Gain (USD)
Chittagong Port	9.13	4,864,577	44,413,592
Mongla Port	4.61	1,262,047	5,818,037
<b>Total</b>	–	<b>6,126,624</b>	<b>50,231,628</b>

Source: This Study

The results calculated in this appendix should be considered indicative rather than definitive.



## Appendix 5 Evaluation of Natural and Social Environmental Impacts of Shortlisted Projects

Country (BAN/BHU/IND/NEP)	Project Reference	Project Type (r: road, rw: railway, b: bridge)	A+/-: Significant positive (+)/negative (-) impact is expected. B+/-: Positive (+)/negative (-) impact is expected to some extent. C+/-: Extent of positive/negative impact is unknown. (A further examination is needed to clarify the impact). D: No impact is expected																	
			Natural Environmental Factors									Social Environmental Factors								
			Overall Natural Impacts	Air Quality	Water Quality	Waste	Noise and Vibration	Protected Areas	Ecosystem	Hydrology	Topography and Geology	Impacts during Construction	Overall Social Impacts	Resettlement	Living and Livelihood	Heritage	Landscape	Ethnic Minorities and Indigenous Peoples	Working Conditions	Impacts during Construction
Bangladesh	RA1-a	rw	C-	D	C-	D	C-	C-	C-	D	D	C+	C+	C-	A+	D	D	D	C+	C+
	RA9-a	rw	D	D	C-	D	C-	D	D	D	D	C+	D	C-	C+	D	D	D	C+	C+
	RO1-a	r	C-	C-	C-	D	C-	C-	C-	D	D	C+	D	C-	C+	D	D	D	C+	C+
	RO17-a	b	D	D	C-	D	D	D	D	D	D	C+	C+	C-	C+	D	C+	D	C+	C+
	RO17-b	r	C-	C-	C-	D	C-	C-	C-	D	D	C+	D	C-	C+	D	D	D	C+	C+
	RO2-a	r	D	C-	C-	D	C-	D	D	D	D	C+	C-	C-	C-	D	D	D	C+	C+
	RO2-b	r	D	C-	C-	D	C-	D	D	D	D	C+	C-	C-	C-	D	D	D	C+	C+
	RO2-c	b	D	D	C-	D	D	D	D	D	D	C+	C+	C-	A+	D	C+	D	C+	C+
	RO3-a	r	D	C-	C-	D	C-	D	D	D	D	C+	D	C-	C-	D	D	D	C+	C+
RO3-b	r	D	C-	C-	D	C-	D	D	D	D	C+	D	C-	C-	D	D	D	C+	C+	
RO3-c	r	D	C-	C-	D	C-	D	D	D	D	C+	D	C-	C-	D	D	D	C+	C+	
Bhutan	RO7-a	r	C-	C-	C-	D	C-	C-	C-	D	A-	C+	C+	C-	A+	D	D	C-	C+	C+
	RO7-b	r/b	C-	C-	C-	D	C-	C-	C-	D	A-	C+	C+	C-	A+	D	C+	C-	C+	C+
	RO7-c	r	C-	C-	C-	D	C-	C-	C-	D	A-	C+	C+	C-	A+	D	D	C-	C+	C+
India	RO15-a	r/b	D	C-	C-	D	C-	D	C-	D	C-	C+	D	C-	A+	D	C+	C-	C+	C+
	RO16-a	r	D	C-	C-	D	C-	D	C-	D	C-	C+	C+	C-	C+	D	D	C-	C+	C+
	RO2-d	r	C-	C-	C-	D	C-	D	C-	D	A-	C+	C+	C-	C+	D	D	C-	C+	C+
	RO9-a	r	D	C-	C-	D	C-	D	C-	D	C-	C+	D	C-	C+	D	D	C-	C+	C+
	RO9-c	r/b	C-	C-	C-	D	C-	D	C-	D	C-	C+	C+	C-	A+	D	C+	C-	C+	C+
	RO9-d	r/b	C-	C-	C-	D	C-	D	C-	D	C-	C+	C+	C-	A+	D	C+	C-	C+	C+
	RO17-e	r	C-	C-	C-	D	C-	C-	C-	D	A-	C+	C+	C-	C+	D	D	C-	C+	C+
	RO2-f	r	D	C-	C-	D	C-	D	D	D	D	C+	C-	C-	C-	D	D	D	C+	C+
	RO2-g	r	D	C-	C-	D	C-	D	D	D	D	C+	C-	C-	C-	D	D	D	C+	C+
RO2-h	r	D	C-	C-	D	C-	D	D	D	D	C+	C-	C-	C-	D	D	D	C+	C+	
Nepal	RO3-f	r	C-	C-	C-	D	C-	D	C-	D	A-	C+	C+	C-	C+	D	C+	C-	C+	C+
	RO3-g	r	C-	C-	C-	D	C-	C-	C-	D	A-	C+	C+	C-	C+	D	D	C-	C+	C+
	RO3-i	r	D	C-	C-	D	C-	D	D	D	D	C+	C+	C-	C+	D	D	C-	C+	C+
	RO3-j	r	C-	C-	C-	D	C-	C-	C-	D	A-	C+	C+	C-	C+	D	D	C-	C+	C+
	RO3-k	r	C-	C-	C-	D	C-	C-	C-	D	A-	C+	C+	C-	C+	A+	D	D	C-	C+

Source: This Survey

## Appendix 6 Regional Economic Corridor (Road and Railway) Evaluation Summary Tables

### A6.1 Regional Road Corridor Evaluation Summary Table

Regional Economic Corridors (Road)			Strategy Document Review / References					Qualitative corridor evaluation					Shortlist	
Countries	Ref	Route	SAARC 10 Priority Corridors 2006 (SAARC Corridor No.)	SASEC 6 Priority Corridors 2004 (SASEC Corridor No.)	BCIM Middle (M) or, Southern route (S)*	BIM-STE Key routes for Develop-ment 2008	Asian Highway As per AH mapping, 2010	Connectivity  Number of Countries Served	Strategy/Plans  Linkages to Regional Strategy and Plans	Synergies with Potential, Planned, or Completed Development Partner Projects	Economics  Industrial Growth Potential	Deliverability  Ease of Implemen- tation (use of existing infrastructure)		Total score
Bangladesh– (Myanmar)– (Thailand)	RO1	Chittagong–Cox’s Bazar–[Teknaf]–(Myanmar)– (Thailand)	No	No	Yes (S)	No	Part	2	1	2	2	1	8	Y
Bangladesh–India– (Myanmar) – (Thailand)	RO2	Kolkata–[Petrapole/ Benapole]–Dhaka–Sylhet– [Sutarkhandi/Sheola]– Imphal–[Moreh]–(Myanmar)	No	No	Yes (M)	Part	Part	2	2	2	2	1	9	Y
Bangladesh–India– Nepal	RO3	Chittagong/ Mongla–Dhaka–[Banglabandha]–Phulbari– [Kakarvitta]–Kathmandu	Yes (4)	Yes (9)	Part (S)	Part	Yes	2	2	2	1	2	9	Y
Bangladesh–India	RO4	Jamuna Bridge–Shibganj– [Sona Masjid]–Malda	Yes (9)	No	No	No	Part	1	2	0	0	1	4	N
	RO5	Chittagong–[Akhaura]–[Agartala]	Yes (6)	Part (5a)	Part (S)	Part	Part	1	2	1	1	2	7	Y
	RO6	Kolkata–[Petrapole/ Benapole]–Jessore–Dhaka– branches to Mongla and Chittagong Ports	No	Yes (5a)	Part (S)	Part	Part	1	2	2	2	1	8	N*
Bangladesh	RO19	Spur of RO2 from Faridpur to potential port at Kalapara	No	No	No	No	No	1	0	0	2	1	4	N
Bangladesh–India– Bhutan	RO7	Chittagong/ Mongla–[Burimari]–Chengrabandha– Jaigon–[Phuentsholing]–Thimphu	Yes (8)	Part (5a)	Part (S)	Part	Part	2	2	1	1	1	7	Y
Bhutan–India	RO8	Thimphu–[Phuentsholing]–Jaigon–Kolkata	Yes (3)	Yes (3a)	No	Part	Part	1	2	0	1	1	5	N
Bhutan–India– Bangladesh–India	RO9	[Samdrup Jongkhar]–Guwahati–[Tamabil]–Shillong– Sylhet–Dhaka onward to India via other corridors	Yes (5)	Part (5a)	Part (M)	Part	Part	2	2	2	1	1	8	Y
Bhutan–India–Nepal	Combination of RO8 and RO3													
India–(Myanmar)– (Thailand)	RO14	North East Region–Mizoram–[Myanmar]–[Thailand]	No	No	No	No	No	2	0	2	2	1	7	Y
	RO2	Kolkata–[Petrapole/Benapole]–Dhaka–Sylhet– [Tamabil]–Imphal–[Moreh]–(Myanmar)	No	No	Yes (M)	Part	Part	2	2	2	2	1	9	Y
	RO15	North East Region’s East–West Corridor–Moreh– [Myanmar]–[Thailand]	No	No	Part (M)	No	Part	2	1	2	1	1	7	Y
	RO16	Guwahati–Dimapur–Kohima–Imphal–[Moreh]– (Myanmar)	No	No	Part (M)	No	Part	2	1	2	1	1	7	Y
India–Bangladesh– (Myanmar)– (Thailand)	Combination of See RO61 and RO16													
	RO17	Chittagong–Ramgarh–Sabroom–Agartala–North Eastern Region	No	No	No	No	Part	1	1	2	2	1	7	Y
India–Bangladesh– India–(Myanmar)– (Thailand)	RO2	Kolkata–[Petrapole/Benapole]–Dhaka–Sylhet– [Tamabil]–Imphal–[Moreh]–(Mandalay)	No	No	Yes (M)	Part	Part	2	2	2	2	1	9	Y
	RO10	(Delhi)–Kolkata–[Petrapole/Benapole]–Dhaka– [Akhaura]/[Agartala]–connections through North East region of India	Yes (1)	Part (5a)	Part (M)	Part	Yes	1	2	2	2	1	8	N*
India–Bhutan	RO7	Chittagong/Mongla–[Burimari]–Chengrabandha– Jaigon–[Phuentsholing]–Thimphu	Yes (8)	Part (5a)	Part (S)	Part	Part	2	2	1	1	1	7	Y
	RO8	Thimphu–[Phuentsholing]–Jaigon–Kolkata	Yes (3)	Yes (3a)	No	Part	Part	1	2	0	1	1	5	N
India–Nepal	RO11	Kolkata/Haldia–[Raxaul]–[Birgunj]–Kathmandu	Yes (2)	Yes (1a)	No	Yes	Part	1	2	0	1	2	6	N
	RO12	New Delhi–[Nepalgunj]–Kathmandu	Yes (7)	No	No	No	Part	1	2	0	0	2	5	N
	RO13	Lucknow–Sunauli–[Bhairahawa]–Kathmandu	Yes (10)	No	No	No	Part	1	2	0	0	2	5	N
	RO18	Kathmandu–AH2–Delhi	No	No	No	No	Yes	1	1	2	1	1	6	N
Nepal–India	See corridors 3, 11, 12, 13, and 18 as described above													
Nepal–India– Bangladesh	RO3	Chittagong/Mongla–Dhaka–[Banglabandha]–Phulbari– [Kakarbhitta]–Kathmandu	Yes (4)	Yes (9)	Part (S)	Part	Yes	2	2	2	1	2	9	Y
Nepal–India–Bangladesh– (Myanmar)–(Thailand)	Combination of RO3 and RO1													
Nepal–India–(Myanmar)– (Thailand)	Combination of RO3, RO8 then RO15													

\*Whilst corridors RO6 and RO10 scored 7 or above in the evaluation, they are both not shortlisted because they are covered in full by other corridors

Abbreviations: ADB = Asian Development Bank, AH = Asian Highway, BCIM = Bangladesh-China-India-Myanmar, DD = detailed design, FS = feasibility study, JICA = Japan International Cooperation Agency, N = no, NH = National Highway, SARDP-NE = Special Accelerated Road Development Programme in the North East, Y = yes

Note: The “Southern Route” has been included for now, but indications are that BCIM may solely focus on the “Middle Route”.

Source: This Survey

## A6.2 Regional Rail Corridor Evaluation Summary Table

Regional Economic Corridors (Rail)			Strategy Document Review / References					Qualitative corridor evaluation					Total Score	Shortlist
Countries	Ref	Route	SAARC 5 Priority Corridors 2006 (SAARC Corridor No.)	SASEC 6 Priority Corridors 2004 (SASEC Corridor No.)	Draft SAARC Agree- ment (SAARC Ref)	Trans Asian Railway (TAR) (as per TAR mapping, 2011)	UNESCAP Rail Corridors	Connectivity  Number of Countries Served	Strategy/Plans  Linkages to Regional Strategy and Plans	Economics  Synergies with Potential, Planned, or Completed Development Partner Projects	Economics  Industrial Growth Potential	Deliverability  Ease of Implemen- tation (use of existing infrastructure)		
Bangladesh–Myanmar–(Thailand)	RA1	Chittagong–Cox’s Bazar–[Teknaf]–[Myanmar]	No	No	No	Part	No	2	1	1	2	1	7	Y
Bangladesh–India–(Myanmar)–(Thailand)	RA2	Delhi–Kolkata–Gede/Petrapole–Darshana/Benapol–Dhaka–Shahbazpur–Maishashan–Imphal–Moreh–(Myanmar)	Yes (1)	No	Yes (2.i)	Yes	Part	2	2	1	2	1	8	Y
Combination of RA8 and RA10														
Bangladesh–India–Nepal	RA3	Birgunji–Raxaul–Singhabad–Rohanpur–Mongla/Chittagong Ports	Yes (4)	No	Yes (5.i)	Part	Part	2	2	0	1	1	6	N
	RA4	Biratnagar–Jogbani–Radhikapur–Biroi–Khulna–Mongla Port	Part (4)	No	Yes (5.ii)	Part	No	2	2	1	2	0	7	Y
	RA5	Bardibas–Inarwa–Jaynagar–Radhikapur–[Biroi]–Khulna–Mongla	No	No	Yes (5.iii)	Part	No	2	2	1	2	0	7	Y
	RA6	Kakarbhitta–Phulbari (India) / Kakarbhitta–Panachagarh (Bangladesh)	No	No	No	No	No	2	0	2	2	1	7	Y
	RA7	Nepal TAR East–West Corridor and connections to India	No	No	No	Yes	No	1	1	1	2	0	5	N
Bangladesh–India	RA3	Birgunji–Raxaul–Singhabad–Rohanpur–Mongla/Chittagong Ports	Yes (4)	No	Yes (5.i)	Part	Part	2	2	0	1	1	6	N
	RA4	Biratnagar–Jogbani–Radhikapur–Biroi–Khulna–Mongla Ports	Part (4)	No	Yes (5.ii)	Part	No	2	2	1	2	0	7	Y
	RA5	Bardibas–Inarwa–Jaynagar–Radhikapur–[Biroi]–Khulna–Mongla	No	No	Yes (5.iii)	Part	No	2	2	1	2	0	7	Y
	RA8	Imphal–Agartala–Akhaura/ Gangasagar–Chittagong Port	No	No	Yes (3)	No	No	1	2	1	1	1	6	N
	RA9	Kolkata–Gedes/Darsana–Padma River crossing–Dhaka–Chittagong	Yes (1,3,4)	Yes (5b)	No	Yes	Part	1	2	1	2	1	7	Y
	RA2	Delhi–Kolkata–Gede/Petrapole–Darshana/Benapol–Dhaka–Shahbazpur–Maishashan–Imphal–Moreh–(Myanmar)	Yes (1)	No	Yes (2.i)	Yes	Part	2	2	1	2	1	8	Y
	RA10	Delhi–Kolkata–Gede/Petrapole–Darshana/Benapol–Dhaka–Akhaura/Gagasagar–Agartala–(North East India)	Part (1,4)	No	Yes (2.ii)	Yes	Part	1	2	1	1	1	6	N
	RA11	Birgunji–Raxaul–Kolkata Port/Haldia	Yes (3)	No	Yes (4)	Yes	Yes	1	2	1	1	1	6	N
	RA6	Kakarbhitta–Phulbari (India) /Kakarbhitta–Panachagarh (Bangladesh)	No	No	No	No	No	2	0	2	2	1	7	Y
	Bangladesh–India–Bhutan	RA12	Mongla/Chittagong–Chilahati–Haldibari–Hasimara–(Bhutan)	No	No	Yes (7)	Part	No	2	2	0	1	1	6
Bhutan–India	RA12	Mongla/Chittagong–Chilahati–Haldibari–Hasimara–(Bhutan)	No	No	Yes (7)	Part	No	2	2	0	1	1	6	N
	RA13	Kolkata–Hasimara–Phuentsholing	No	No	No	No	No	1	0	0	1	0	2	N
India–Bangladesh–India	RA2	Delhi–Kolkata–Gede/Petrapole–Darshana/Benapol–Dhaka–Shahbazpur–Maishashan–Imphal–Moreh–(Myanmar)	Yes (1)	No	Yes (2.i)	Yes	Part	2	2	1	2	1	8	Y
	RA10	Delhi–Kolkata–Gede/Petrapole–Darshana/Benapol–Dhaka–Akhaura/Gagasagar–Agartala–(North East India)	Part (1,4)	No	Yes (2.ii)	Yes	Part	1	2	1	1	1	6	N
India–Nepal	RA11	Birgunji–Raxaul–Kolkata Port/ Haldia	Yes (3)	No	Yes (4)	Yes	Yes	1	2	1	1	1	6	N
	RA4	Biratnagar–Jogbani–Radhikapur–Biroi–Khulna–Mongla Port	Part (4)	No	Yes (5.ii)	Part	No	2	2	1	2	0	7	Y
	RA5	Bardibas–Inarwa–Jaynagar–Radhikapur–[Biroi]–Khulna–Mongla	No	No	Yes (5.iii)	Part	No	2	2	1	2	0	7	Y
	RA14	Extension to connect to Vishakhapatnam Port	No	No	No	No	No	0	0	0	2	1	3	N
	RA6	Kakarbhitta–Phulbari (India) / Kakarbhitta–Panachagarh (Bangladesh)	No	No	No	No	No	2	0	2	2	1	7	Y
	RA7	Nepal Trans-Asian Railway East–West Corridor and connections to India	No	No	No	Yes	No	1	1	1	2	0	5	N
India–Bangladesh–(Myanmar)–(Thailand)	RA2	Delhi–Kolkata–Gede/Petrapole–Darshana/Benapol–Dhaka–Shahbazpur–Maishashan–Imphal–Moreh–(Myanmar)	Yes (1)	No	Yes (2.i)	Yes	Part	2	2	1	2	1	8	Y
Combination of RA8 and RA10														
India–(Myanmar)–(Thailand)	See RA2 as reviewed above See RA8 as reviewed above													
India–Bhutan	RA12	Mongla/Chittagong–Chilahati–Haldibari–Hasimara–Bhutan	No	No	Yes (7)	Part	No	1	2	1	1	1	6	N
	RA13	Kolkata–Hasimara–Phuentsholing	No	No	No	No	No	1	0	0	1	0	2	N
Nepal–India	See RA4, RA5, RA6, RA11, RA14 as reviewed above													
Nepal–India–Bangladesh	See RA3, RA4, RA5, RA6 as reviewed above													
Nepal–India–Bangladesh–(Myanmar)–(Thailand)	Combination of Nepal-India-Bangladesh corridors as described above plus RA1													

## Appendix 7 Multi-Criteria Evaluation of Potential Projects for JICA Assistance (Road and Rail)

Country	Project Type	Project Ref	Project Name	CONNECTIVITY / FREIGHT & LOGISTICS		STRATEGY/PLANS			ECONOMIC / INDUSTRY			ENVIRONMENT / SOCIAL		SOFT COMPONENT	DELIVERABILITY		TOTAL SCORE <small>Based on weighting factors</small>	PRIORITY FOR JICA ASSISTANCE*	
				Potential Freight Time Savings	Facilitates connectivity to port(s) for landlocked countries	Strategic Importance	Alignment with JICA strategy	Expected synergies with potential/ planned Development Partner projects	Estimated level of future traffic	Economic growth potential	Importance of project for industry	Social Environment (see environmental chapter for more details)	Natural Environment (see environmental chapter for more details)	Transit facilitation potential	Project Readiness	Ease of Infrastructure implementation (e.g. major constraints)			
Bangladesh	Road	RO1-a	AH-41 Chittagong to Cox's Bazar	1	1	1	1	2	1	2	0	1	1	0	2	1	2.6	Medium	
Bangladesh	Road	RO1-b	AH-41 Cox's Bazar to Teknaf	1	0	1	1	1	0	2	0	2	0	0	1	0	1.6	Low	
Bangladesh	Road	RO2-a	AH-1 Benapole to Jessore	1	0	2	1	2	2	2	2	0	1	0	1	2	3.1	High	
Bangladesh	Road	RO2-b	AH-1 Jessore to Bhatipara	0	1	2	1	2	2	2	2	0	1	0	1	0	2.7	High	
Bangladesh	Road	RO2-c	Padma Bridge	0	0	2	2	2	2	2	2	2	1	0	2	0	3.1	High	
Bangladesh	Road	RO3-a	AH-2 Rangpur to Beldanga	2	2	2	1	2	0	2	0	1	1	1	0	0	2.5	Medium	
Bangladesh	Road	RO3-b	AH-2 Beldanga to Panchagarh	2	2	2	1	2	0	2	0	1	1	1	0	0	2.5	Medium	
Bangladesh	Road	RO3-c	AH-2 Panchagarh to Banglabandha	2	2	1	0	0	0	1	0	1	1	1	0	1	1.5	Low	
Bangladesh	Road	RO17-a	Feni River Bridge Ramgarh (Sabroom)	1	0	1	2	0	0	1	0	2	1	1	0	1	1.8	Medium	
Bangladesh	Road	RO17-b	Chittagong to Ramgarh (Sabroom) alt 1: via NH-1 (AH-41), R151 then R152	2	1	1	2	0	1	1	0	1	1	1	0	2	2.3	Medium	
Bangladesh	Road	RO17-c	Chittagong to Ramgarh (Sabroom) alt 2: via R160, R151 then R152	1	0	0	2	0	0	1	0	0	1	1	0	0	1	Low	
Bangladesh	Rail	RA1-a	Regional Transport Hub: Dohazari to Cox's Bazar (ADB RCI subproject 4: Construction of single line metre gauge from Dohazari to Cox's Bazar via Ramu and Ramu to Gundum)	1	1	1	1	2	1	2	0	2	0	0	2	0	2.4	Medium	
Bangladesh	Rail	RA1-b	Regional Transport Hub: Long term sub-projects connecting Sonadia I) Comilla-Chittagong-Sonadia; II) Comilla-Chord Line-Fatullah-ICD-Dhaka; III) ICD (Dhaka South)-Jessore-Benapole-India); IV) Dhaka-Akhaura-India	Various long term projects requiring separate review at a later stage														n/a	Low
Bangladesh	Rail	RA1-c	Other ADB RCI Projects - in addition to Dohazari to Cox's Bazar there are 6 other sub-projects (ADB have not noted these for JICA assistance yet)	Various projects requiring further discussions between JICA and ADB														n/a	Medium
Bangladesh	Rail	RA9-a	Loan Assistance for the Dhaka-Chittagong Railway Development Project	2	2	2	2	0	1	2	1	1	1	1	2	1	3.3	High	
Bhutan	Road	RO7-a	Bridge on the ADB SASEC Northern Bypass of Phuentsholing	2	2	2	2	2	0	1	1	2	1	2	1	0	3.1	High	
Bhutan	Road	RO7-b	ADB SASEC Northern Bypass of Phuentsholing (including road section and bridge)	2	2	2	1	2	0	1	1	2	1	2	1	0	2.9	High	
Bhutan	Road	RO7-c	Mao-khola Bridge on Southern East-West Highway Corridor (SEWH)	0	1	0	1	1	0	1	1	2	1	2	0	0	1.5	Low	
Bhutan	Road	RO7-d	Sections of Southern East-West Highway (SEWH)	1	1	0	1	1	0	1	1	2	0	2	0	0	1.6	Low	
Bhutan	Rail	RO7-e	Potential Rail connection Thimphu-Airport-Phuentsholing	1	2	1	0	0	0	1	0	2	0	2	0	0	1.4	Low	
India (Assam)	Road	RO15-a	2-laning of alternative route Barak Valley (Silchar) - Guwahati Road via Harangajao-Turuk Plus Tezpur Bridge	0	1	1	2	0	0	1	0	1	1	1	1	1	1.7	Medium	
India (Manipur)	Road	RO16-a	NH-2 (old NH-39) Imphal to Kohima	0	0	1	2	1	0	1	0	2	1	1	1	1	1.8	Medium	
India (Manipur)	Road	RO2-e	State road between Imphal and Kakching	0	0	0	2	0	1	2	0	1	0	1	0	0	1.2	Low	
India (Manipur/Assam)	Road	RO2-d	NH-37 (old NH-53) Imphal to Jiribam (plus bridge in Silchar Assam)	1	0	2	2	1	1	2	0	2	0	1	0	0	2.1	Medium	
India (Meghalaya)	Road	RO9-a	NH62: between Dudhanai and Dalu and extension NH-51 between Tura and Dalu	0	0	0	2	1	2	2	1	1	1	1	0	1	2.1	Medium	
India (Meghalaya)	Road	RO9-b	2 laning of Williamnagar to Nengkra	0	0	0	0	0	0	2	1	1	1	1	0	0	0.9	Low	
India (Meghalaya)	Road	RO9-c	Dawki to Shillong NH-40 and construction of Dawki bridge	0	2	2	2	0	2	2	1	2	0	1	0	0	2.5	Medium	
India (Meghalaya/Assam)	Road	RO9-d	NH-44 NHAI scheme from Jowai to Assam border plus the NH-44 Badarpurghat Bridge	0	1	1	2	0	2	2	1	2	1	1	0	0	2.2	Medium	
India (Mizoram)	Road	RO14-a	NH-54 2 laning from Aizawl to Tuipang	0	0	1	2	2	1	1	0	2	0	0	1	0	1.8	Medium	
India (Nagaland)	Road	RO16-b	NH-150 2 laning from Kohima to Nagaland/Manipur border	0	0	0	2	1	0	1	0	2	0	1	0	0	1.1	Low	
India (Nagaland)	Road	RO16-c	NH-155 2 laning of Mokochung to Jessami	0	0	0	2	1	0	1	0	1	0	1	1	0	1.2	Low	
India (Nagaland)	Road	RO16-d	NH-61 2 laning from Wokha (km 70) to Tuli (km 220)	0	0	0	2	0	0	1	0	1	1	1	1	0	1.1	Low	
India (Tripura)	Road	RO17-d	Improvement of State road from Kukital southbound towards Sabroom (top section)	2	0	0	0	0	1	2	0	2	0	1	1	0	1.5	Low	
India (Tripura)	Road	RO17-e	NH-44a 2 laning/ realignment from Manu to Tripura/Mizoram Border	2	0	0	2	0	0	2	0	2	0	1	1	1	1.9	Medium	
India (West Bengal)	Road	RO2-f	Haldia-Raichak-Kukrahati-east of NH-117-bypass Barasat and joins NH-34	0	1	1	1	1	2	2	1	0	1	0	0	0	1.9	Medium	
India (West Bengal)	Road	RO2-g	Crossing of Proposed RO17-d project and Kolkata Basanti Road up to Basanti-Canning-Gosaba	0	1	1	1	1	2	2	1	0	1	0	0	0	1.9	Medium	
India (West Bengal)	Road	RO2-h	Chakdah on NH34 to Bongaon (additional improvements to the previous ADB 2 laning)	0	1	1	1	1	2	2	1	0	1	0	1	1	2.1	Medium	
Nepal	Road	RO3-d	ADB road section spur: Leguwaghat-Tumlingtar	0	0	0	0	2	0	1	0	2	0	1	2	0	1.3	Low	
Nepal	Road	RO3-e	ADB road section spur: Thankot-Mlekhu tunnel (3km) - SEE PROJECT RO3-F	n/a see RO3-f														n/a	see RO3-f
Nepal	Road	RO3-f	Thankot-Nagdhunga-Naubise Tunnel	2	2	1	2	0	0	2	0	2	0	1	1	0	2.3	Medium	
Nepal	Road	RO3-g	ADB road section spur Ghinaghat-Biratchowk	1	1	1	0	1	0	2	0	1	0	1	2	0	1.8	Medium	
Nepal	Road	RO3-h	ADB road section spur Bhedetar-Rabi-Ranke.	0	0	0	0	2	0	2	0	1	0	1	1	0	1.2	Low	
Nepal	Road	RO3-i	Nepal-India road section via Kakarbhitta	2	2	2	0	0	0	2	0	1	1	1	1	1	2.3	Medium	
Nepal	Road	RO3-j	Project for the Improvement of Surabinayak - DhulikeI Road	1	1	1	2	0	0	2	0	2	0	1	1	2	2.3	Medium	
Nepal	Road	RO3-k	Kathmandu - Terai Fast Track Project	1	1	1	0	0	0	2	0	2	0	1	1	0	1.5	Low	
Nepal	Rail	RA6-a	Nepal-India rail via Kakarbhitta	2	2	0	0	0	0	1	0	2	0	1	0	0	1.3	Low	

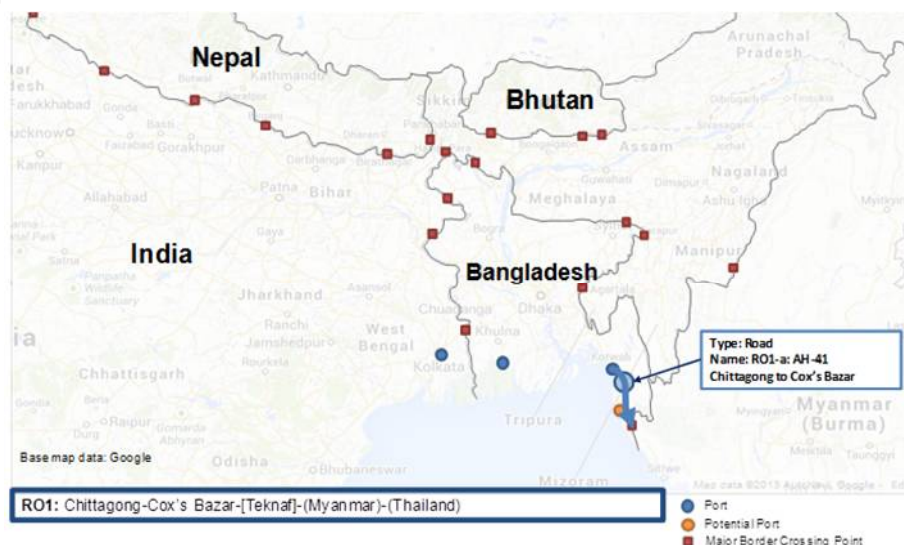
Note: Since the multi-criteria analysis and review process was undertaken, two additional road section projects have been proposed by stakeholders on corridors RO15/16, although further work and information is required to develop these proposals. \*High (projects scoring 2.7 or higher), Medium (projects scoring between 2.6 and 1.7), Low (projects scoring 1.6 or lower).

## Appendix 8 Project Profiles

### A8.1 Road and Rail Infrastructure Projects

<b>Project Ref:</b> RO1-a <b>Country:</b> Bangladesh <b>Sector:</b> Road <b>Project Type:</b> Loan	<b>PROJECT NAME:</b> <b>AH-41 Chittagong to Cox's Bazar</b>	<b>PRIORITY:</b>
		<b>Medium</b>
<b>Corridors</b>	RO1: Chittagong-Cox's Bazaar-[Teknaf]-(Myanmar)-(Thailand)	
<b>Project Description</b>	The project involves upgrading of 135 km of Asian Highway 41 (National Highway 1) between Chittagong and Cox's Bazar. It is part of a wider corridor connecting Bangladesh with Myanmar at Gundum. The existing condition of the 133-km section between Chittagong-Cox's Bazar is 2-lane asphalt concrete surfaced across flat or gently rolling terrain traversing many towns and bazaars.	
<b>Project Status</b>	A feasibility study has been completed with detailed design and contract documents to be prepared by October 2014. Prequalification, tendering, evaluation, and contract awards will continue to July 2015.	
<b>Social and Natural Environmental Impact</b>	Overall natural environment impact: D Overall social environment impact: D	
<b>Economic and Financial Considerations</b>	The project could help unlock economic benefits from improved connectivity to Chittagong and a potential new seaport. A July 2013 presentation by the Roads and Highways Department reported the estimated cost for Chittagong-Cox's Bazar to be USD 430 million.	
<b>Counterpart Agency/Agencies</b>	Roads and Highways Department (RHD), Bangladesh	
<b>Critical Success Factors</b>	<ul style="list-style-type: none"> <li>• Priorities and progress of various connections to Myanmar including those from the North East Region of India</li> <li>• Potential cofinancing with ADB</li> <li>• A potential new seaport at Sonadia would have a major impact on this route</li> <li>• Onward connection from Cox's Bazar to Teknaf not included in this project; this section has harsh terrain and has a difficult section close to Teknaf.</li> </ul>	

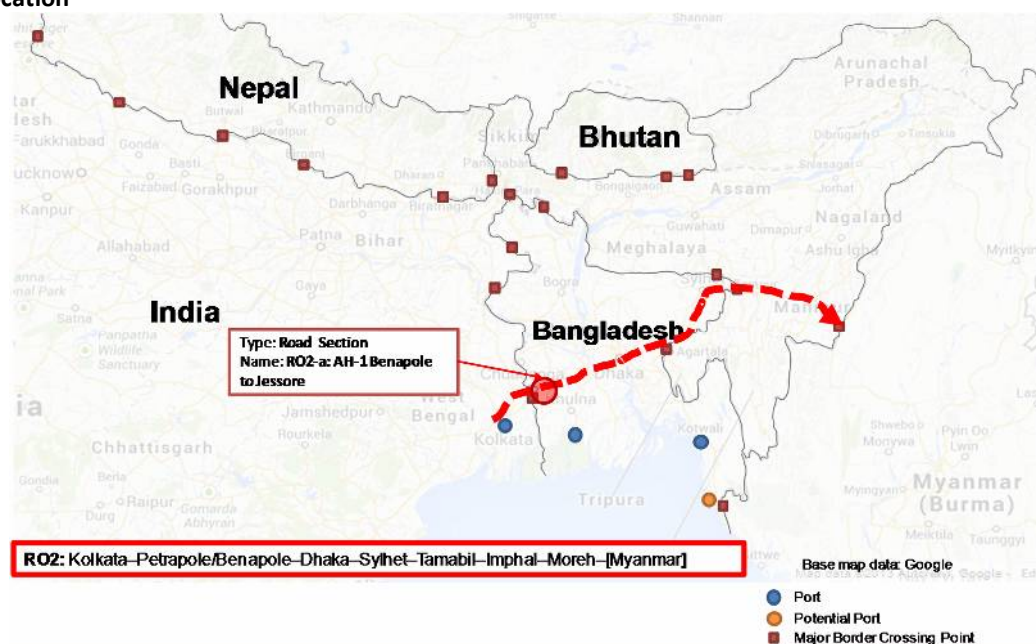
#### Location





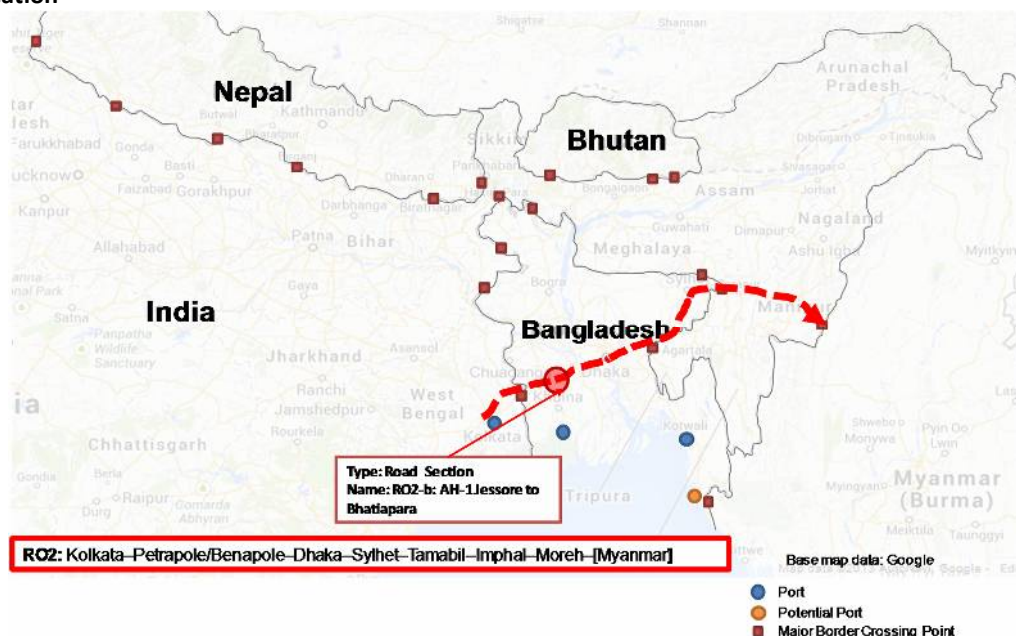
<b>Project Ref:</b> RO2-a <b>Country:</b> Bangladesh <b>Sector:</b> Road <b>Project Type:</b> Loan	<b>PROJECT NAME:</b> <b>AH-1 Benapole to Jessore</b>	<b>PRIORITY:</b> <b>High</b>
<b>Corridors</b>	RO2: Kolkata–[Petrapole/Benapole]–Dhaka–Sylhet–[Sutarkhandi/Sheola]–Imphal–[Moreh]–(Myanmar)	
<b>Project Description</b>	The project entails upgrading of 38 km of Asian Highway 1 to Benapole (on the border with India). Benapole is the most important and busiest international border crossing point in Bangladesh. This is a strategically important route and part of major corridors such as those of SAARC (Corridors 1 and 5) and BCIM.	
<b>Project Status</b>	In discussions with ADB’s Bangladesh Resident Mission, it was noted there is an ADB TA for this route but there is potential for JICA assistance. In addition, in 2007 UNESCAP completed a prefeasibility study examining two alternatives.	
<b>Social and Natural Environmental Impact</b>	Overall natural environment impact: D Overall social environment impact: C-	
<b>Economic and Financial Considerations</b>	Improvement of the road will lead to a reduction in travel time to Dhaka for regional transport and will have a positive impact on GDP. The UNESCAP prefeasibility study estimated the construction costs (reconstruction work and change of alignment, and other work) as USD 60,210,000 and USD 34,210,000 for alternative-1 and alternative-2, respectively. The work was divided into three construction years (2008–2010). ADB is undertaking an updated feasibility study.	
<b>Counterpart Agency/Agencies</b>	Roads and Highways Department (RHD), Bangladesh	
<b>Critical Success Factors</b>	<ul style="list-style-type: none"> <li>• Strategically the project scores high, but it is dependent on the corridor being developed (e.g., the Padma Bridge, development of momentum with the BCIM route) since current traffic may not justify major upgrading works.</li> <li>• FS/DD required.</li> <li>• ADB is studying the section but noted potential for JICA assistance.</li> </ul>	

**Location**



<b>Project Ref:</b> RO2-b <b>Country:</b> Bangladesh <b>Sector:</b> Road <b>Project Type:</b> Loan	<b>PROJECT NAME:</b> <b>AH-1 Jessore to Bhatiapara</b>	<b>PRIORITY:</b> <b>High</b>
<b>Corridors</b>	RO2: Kolkata–[Petrapole/Benapole]–Dhaka–Sylhet–[Sutarkhandi/Sheola]–Imphal–[Moreh]–(Myanmar)	
<b>Project Description</b>	The project involves upgrading of 59 km of Asian Highway 1 (Bhatiapara-Kalna FG 3km, Kalna FG-Narail 24 km, Narail-Jessore 32 km). It is a strategically important route for the future as part of major corridor plans when the Padma Bridge is constructed. Some sections are below AH Class II and AH Class III	
<b>Project Status</b>	In discussions with ADB’s Bangladesh Resident Mission, it was noted that there is an ADB TA for this route but there is potential for JICA assistance. No FS/DD has been undertaken as yet.	
<b>Social and Natural Environmental Impact</b>	Overall natural environment impact: D Overall social environment impact: C-	
<b>Economic and Financial Considerations</b>	The improvement of the road will lead to a reduction in travel time to Dhaka for regional transport and will have a positive impact on GDP. Although no feasibility studies have been undertaken, for indicative purposes an initial cost estimate of USD 224 million was prepared. <sup>1</sup>	
<b>Counterpart Agency/Agencies</b>	Roads and Highways Department (RHD), Bangladesh	
<b>Critical Success Factors</b>	<ul style="list-style-type: none"> <li>• Strategically the project scores high, but it is dependent on the corridor being developed (e.g., the Padma Bridge, development of momentum with the BCIM route) since current traffic may not justify major upgrading works.</li> <li>• FS/DD required.</li> <li>• ADB is studying the section but noted potential for JICA assistance.</li> </ul>	

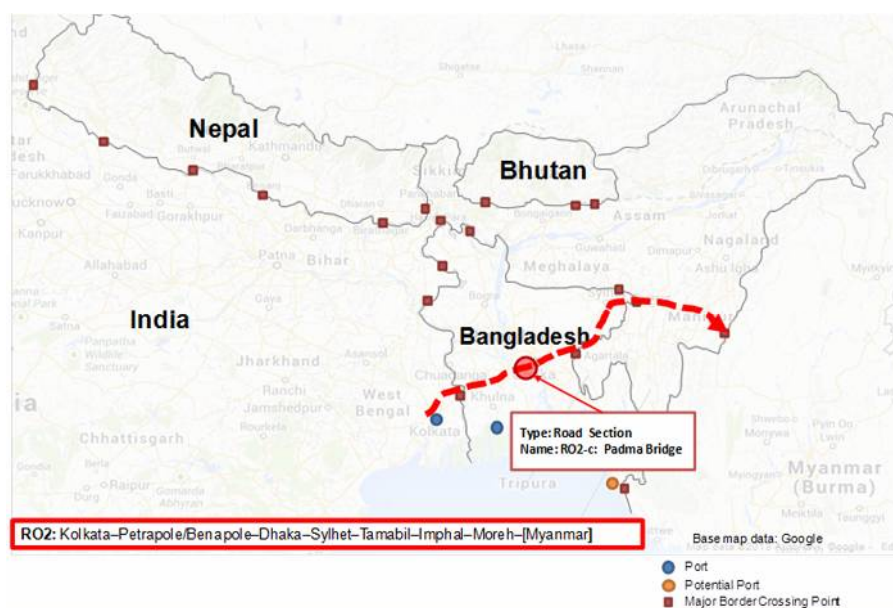
**Location**



<sup>1</sup> Assuming 59 km of widening from 2 to 4 lanes (AH-Class-I) using a unit cost of USD 3.8 million/km (based on RHD assumptions for project RO1-a/b, but increased in consideration of any additional costs from potentially poorer conditions of sections of the existing road and other factors; land acquisition costs have not been included.).

<b>Project Ref:</b> RO2-c <b>Country:</b> Bangladesh <b>Sector:</b> Road <b>Project Type:</b> Loan	<b>PROJECT NAME:</b> <b>Padma Bridge</b>	<b>PRIORITY:</b> <b>High</b>
<b>Corridors</b>	RO2: Kolkata–[Petrapole/Benapole]–Dhaka–Sylhet–[Sutarkhandi/Sheola]–Imphal–[Moreh]–(Myanmar)	
<b>Project Description</b>	This is a strategically significant bridge project previously included in JICA funding until the project was shelved due to governance issues. The proposed Padma Multipurpose Bridge will be the second-largest fixed crossing in Bangladesh, and will connect the southwest region (SWR) with the rest of the country. The bridge will provide direct links between two major seaports of the country and will be an integral part of AH1 and the Trans-Asian railway network. The distance from Dhaka to nearly all major destinations in the SWR will be reduced by 100 km or more with greater reduction in transport time (World Bank Project Appraisal Document, January 2011).	
<b>Project Status</b>	The project was previously ready for implementation, but is currently off the table until the government can meet requested terms.	
<b>Social and Natural Environmental Impact</b>	Overall natural environment impact: D Overall social environment impact: C+	
<b>Economic and Financial Considerations</b>	The project will boost the GDP of the SWR and the country and generate substantial employment opportunities. The project was to be financed by an International Development Association credit of USD 1,200 million), an ADB credit of USD 76 million and loan of USD 539 million, a JICA credit of USD 400 million, an Islamic Development Bank loan of USD 140 million, and funds from the Government of Bangladesh (about USD 560 million). The total cost would be about USD 2,915 million with a tax content estimate of 19.5% (about USD 549.1 million). (World Bank Project Appraisal Document, January 2011).	
<b>Counterpart Agency/Agencies</b>	Roads and Highways Department (RHD), Bangladesh	
<b>Critical Success Factors</b>	<ul style="list-style-type: none"> <li>• Currently off the table until the government can meet terms.</li> <li>• Strategically scores high, but dependent on the corridor being developed.</li> </ul>	

**Location**

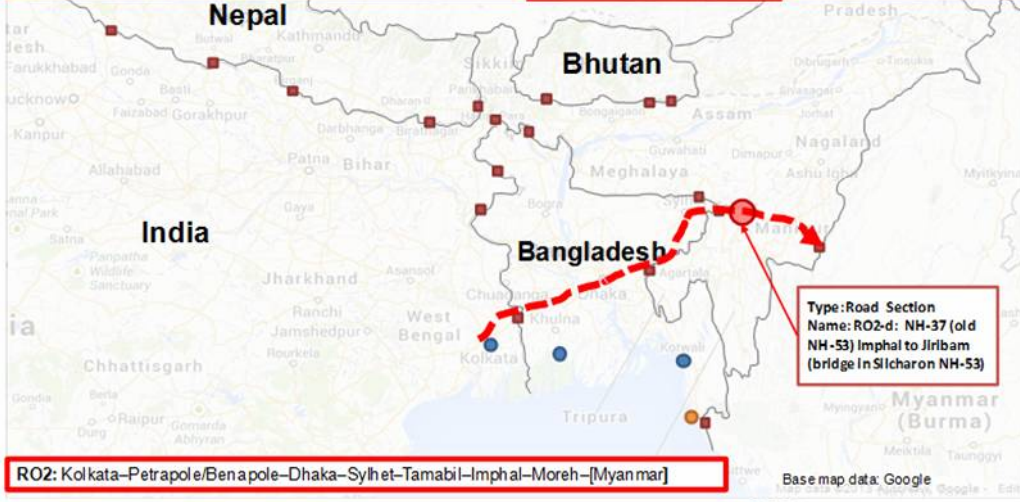




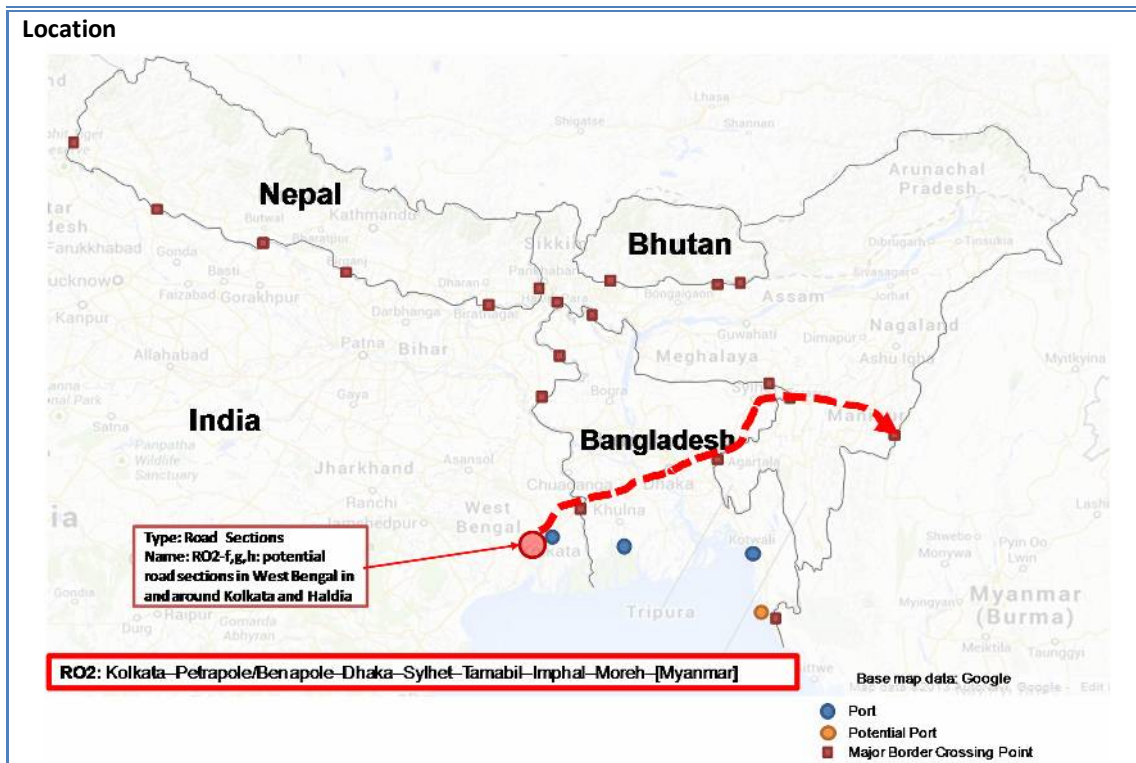
<b>Project Ref:</b> RO2-d <b>Country:</b> India <b>Sector:</b> Road <b>Project Type:</b> Loan	<b>PROJECT NAME:</b> <b>NH-37 (old NH-53) Imphal to Jiribam (plus bridge in Silchar Assam)</b>	<b>PRIORITY:</b> <b>Medium</b>
<b>Corridors</b>	RO2: Kolkata–[Petrapole/Benapole]–Dhaka–Sylhet– [Sutarkhandi/Sheola]–Imphal–[Moreh]–(Myanmar)	
<b>Project Description</b>	The project entails upgrading of NH-37 (old NH-53) Imphal to Jiribam (plus Sadarghat bridge over the Barak River in Silchar, Assam, and also on NH-53) – it involves rehabilitation of an existing bridge and construction of a new bridge. The Imphal to Jiribam section forms part of a key long term strategic (BCIM) route. While there are some good sections towards Imphal, generally the terrain of the route is harsh.	
<b>Project Status</b>	The Ministry of Road Transport and Highways (MoRTH), India, is proposing JICA assistance. The project is to be transferred from the Border Roads Organisation (BRO) to MoRTH. There is no detailed project report (DPR) yet.	
<b>Social and Natural Environmental Impact</b>	Overall natural environment impact: C- Overall social environment impact: C+	
<b>Economic and Financial Considerations</b>	The project can assist in unlocking economic benefits from the wider regional corridor that it pertains to. Although no feasibility studies have been undertaken, for indicative purposes an initial cost estimate of USD 774 million was prepared. <sup>2</sup>	
<b>Counterpart Agency/Agencies</b>	MoRTH (if successfully transferred from BRO)	
<b>Critical Success Factors</b>	<ul style="list-style-type: none"> <li>• Subject to transfer from BRO to MoRTH.</li> <li>• Completion of DPR and addressing of terrain and deliverability constraints.</li> <li>• Wider development of corridor across Bangladesh, India, and Myanmar.</li> <li>• Discussions with MDONER are required regarding the Sadarghat Bridge on NH53.</li> </ul>	

<sup>2</sup> Assuming about 215 km of widening using a unit cost of USD 3.6 million/km (based on similar rates for projects in North East India and other examples from India Gujarat Maritime Board Rates data 2010-11): 2 laning = 2 laning x 1 = USD 1.2 million / km, bridges = 5% / km = 50 m x 6 m x 2 laning = 600 m<sup>2</sup> x USD 3,000 / m<sup>2</sup> = USD 1.8 million / km, and Others = 5% / km = 50m x 6 m x 2 laning = 600 m<sup>2</sup> x USD 1,000 / m<sup>2</sup> = USD 0.6 million / km; land acquisition costs have not been included).

**Location**

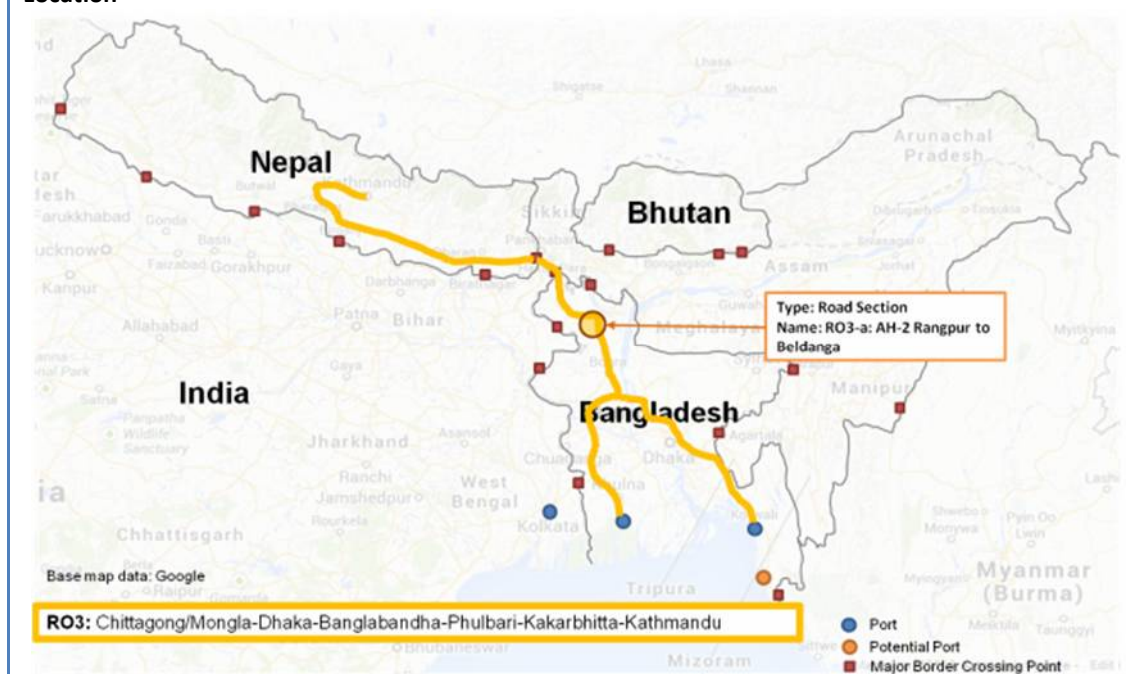


<p><b>Project Ref:</b> RO2-f, g, h <b>Country:</b> India <b>Sector:</b> Road <b>Project Type:</b> Loan</p>	<p><b>PROJECT NAME:</b> <b>(i) Crossing of proposed RO17-d project and Kolkata Basanti Road up to Basanti-Canning-Gosaba; (ii) Haldia-Raichak-Kukrahati-east of NH-117-bypass Barasat and joining NH-34; and (iii) Chakdah on NH34 to Bongaon</b></p>	<p><b>PRIORITY:</b> <b>Medium</b></p>
<p><b>Corridors</b></p>	<p>RO2: Kolkata–[Petrapole/Benapole]–Dhaka–Sylhet–[Sutarkhandi/Sheola]–Imphal–[Moreh]–(Myanmar)</p>	
<p><b>Project Description</b></p>	<p>There have been several attempts to improve road connectivity for the Kolkata-Haldia port network and some projects are in progress. The West Bengal Highways Department has recently initiated a network prioritization study for state highways in West Bengal that will review improvement projects (the study is to be completed in March 2014). There are a number of concept projects including the following: (i) Crossing of Proposed RO17-d project and Kolkata Basanti Road up to Basanti-Canning-Gosaba; (ii) Haldia-Raichak-Kukrahati-east of NH-117-bypass Barasat and joining NH-34; and (iii) Chakdah on NH34 to Bongaon (additional improvements to the previous ADB 2 laning).</p>	
<p><b>Project Status</b></p>	<p>These potential projects are suggestions by the West Bengal Public Works Department (PWD)/West Bengal Highway Development Corporation Ltd (WBHDCL), but they are purely at the concept stage. These projects will be reviewed as part of the ongoing PWD/RITES study (due March 2014).</p>	
<p><b>Social and Natural Environmental Impact</b></p>	<p>Overall natural environment impact: D Overall social environment impact: C-</p>	
<p><b>Economic and Financial Considerations</b></p>	<p>This package of projects can help unlock economic benefits from improved connectivity to the Kolkata-Haldia port network. These projects are purely conceptual at this stage with no alignments drawn. Cost estimates will be developed in due course, partly through the ongoing PWD/RITES study (due March 2014).</p>	
<p><b>Counterpart Agency/Agencies</b></p>	<p>WBHDCL and West Bengal Public Works Department</p>	
<p><b>Critical Success Factors</b></p>	<p>These projects are currently at concept stage and require studies to specify alignments and land acquisition requirements.</p>	



<b>Project Ref:</b> RO3-a <b>Country:</b> Bangladesh <b>Sector:</b> Road <b>Project Type:</b> Loan	<b>PROJECT NAME:</b> <b>AH-2 Rangpur to Beldanga</b>	<b>PRIORITY:</b>
		<b>Medium</b>
<b>Corridors</b>	RO3: Chittagong/Mongla-Dhaka-[Banglabandha]-Phulbari-[Kakarbhitta]-Kathmandu	
<b>Project Description</b>	The project involves improvements to the Asian Highway 2 section linking Rangpur to Beldanga Beldanga and Panchagarh (67 km). It forms part of SAARC Highway Corridor 4 providing access for landlocked Nepal to Bangladeshi ports. The current road condition is poor. The project would build on ADB improvements to the Panchagarh to Banglabandha AH-2 section.	
<b>Project Status</b>	Since there has not been any study or program yet, further work including feasibility studies are required.	
<b>Social and Natural Environmental Impact</b>	Overall natural environment impact: D Overall social environment impact: D	
<b>Economic and Financial Considerations</b>	The project would unlock economic benefits by providing access for landlocked Nepal to Bangladeshi ports. Although no feasibility studies have been undertaken, for indicative purposes an initial cost estimate of USD 214 million was prepared. <sup>3</sup>	
<b>Counterpart Agency/Agencies</b>	Roads and Highways Department (RHD), Bangladesh	
<b>Critical Success Factors</b>	<ul style="list-style-type: none"> <li>Strategically the project scores well, but it is dependent on the Nepal-India-Bangladesh corridor being developed (including required soft improvements) as current traffic may not justify major upgrading works.</li> <li>FS/DD required.</li> </ul>	

**Location**

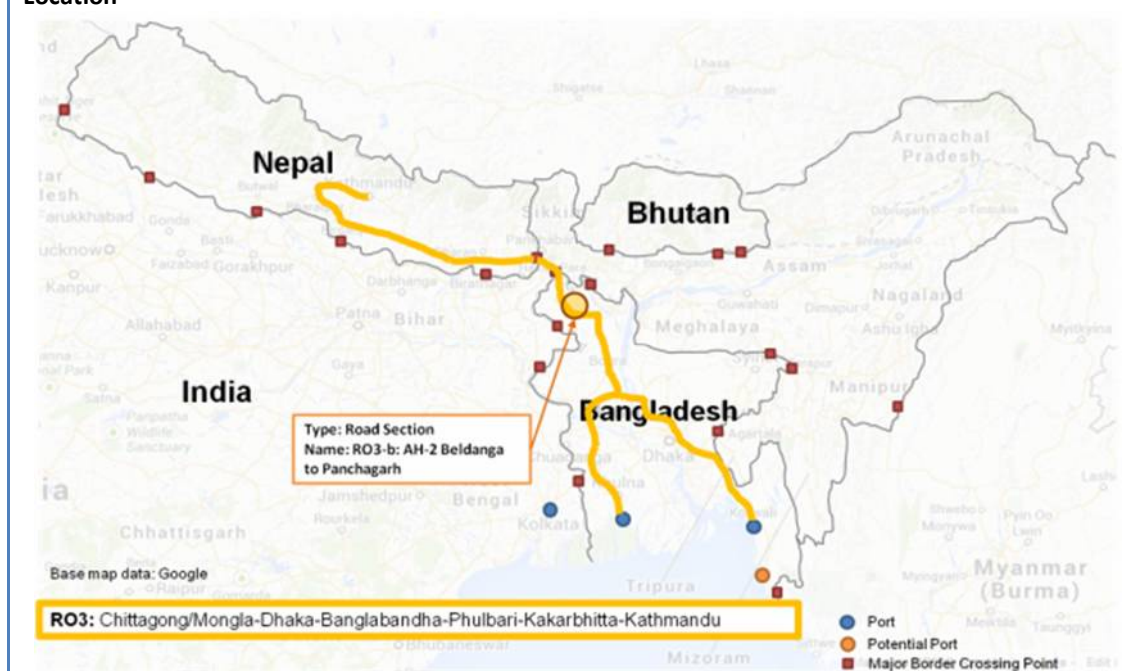


<sup>3</sup> Assuming 67 km of widening from 2 to 4 lanes (AH-Class-I) using a unit cost of USD 3.2 million/km (RHD assumption for RO1-a/b; excluding any land acquisition costs).



<b>Project Ref:</b> RO3-b <b>Country:</b> Bangladesh <b>Sector:</b> Road <b>Project Type:</b> Loan	<b>PROJECT NAME:</b> <b>AH-2 Beldanga to Panchagarh</b>	<b>PRIORITY:</b>
		<b>Medium</b>
<b>Corridors</b>	RO3: Chittagong/Mongla-Dhaka-[Banglabandha]-Phulbari-[Kakarbhitta]-Kathmandu	
<b>Project Description</b>	The project involves improvements to the Asian Highway 2 section between Beldanga and Panchagarh (76 km). It forms part of SAARC Highway Corridor 4 providing access for landlocked Nepal to Bangladeshi ports. The current road condition is poor. The project would build on ADB improvements to the Panchagarh to Banglabandha AH-2 section.	
<b>Project Status</b>	Since there has not yet been any study or program, further work including feasibility studies are required.	
<b>Social and Natural Environmental Impact</b>	Overall natural environment impact: D Overall social environment impact: D	
<b>Economic and Financial Considerations</b>	The project would unlock economic benefits by providing access for landlocked Nepal to Bangladeshi ports. Although no feasibility studies have been undertaken, for indicative purposes an initial cost estimate of USD 243 million was prepared. <sup>4</sup>	
<b>Counterpart Agency/Agencies</b>	Roads and Highways Department (RHD), Bangladesh	
<b>Critical Success Factors</b>	<ul style="list-style-type: none"> <li>Strategically the project scores well, but it is dependent on the Nepal-India-Bangladesh corridor being developed (including required soft improvements) as current traffic may not justify major upgrading works.</li> <li>FS/DD required.</li> </ul>	

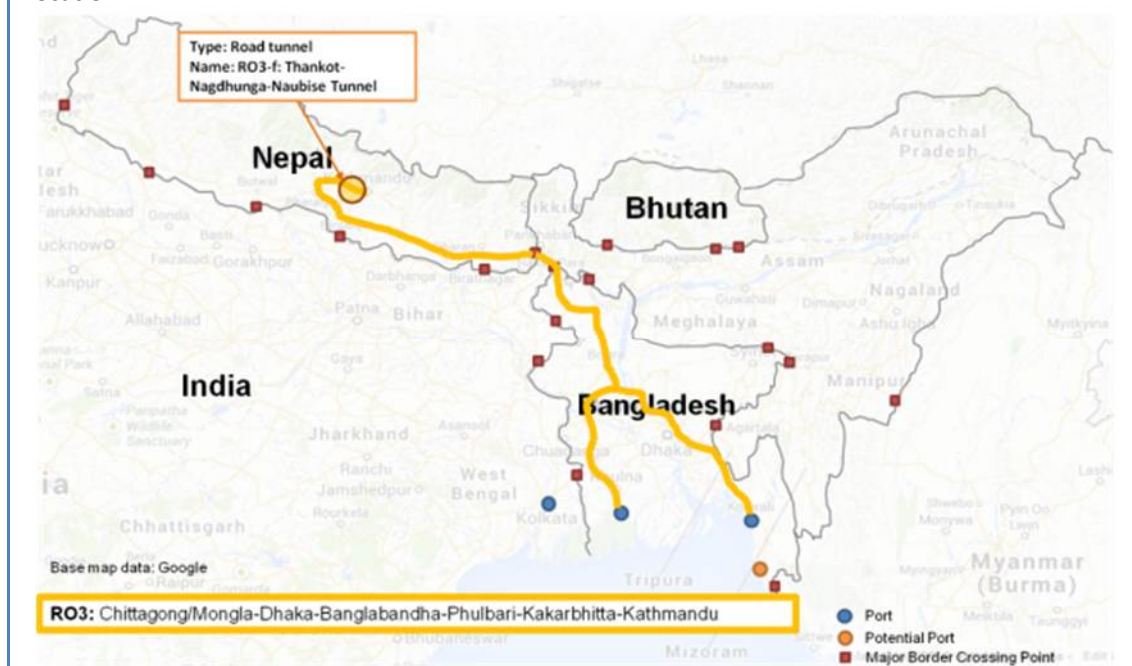
**Location**



<sup>4</sup> Assuming 76 km of widening from 2 to 4 lanes (AH-Class-I) using a unit cost of USD 3.2 million / km (RHD assumption for RO1-a/b; excluding any land acquisition costs).

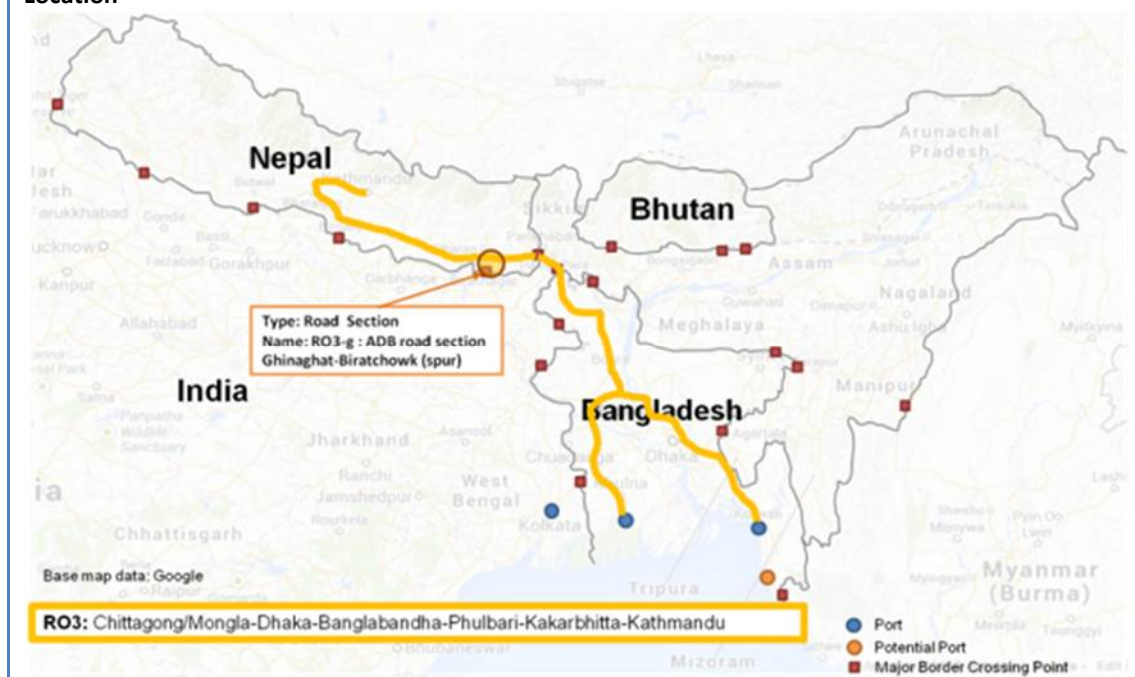
<b>Project Ref:</b> RO3-f <b>Country:</b> Nepal <b>Sector:</b> Road <b>Project Type:</b> Loan	<b>PROJECT NAME:</b> <b>Thankot–Nagdhunga–Naubise Tunnel</b>	<b>PRIORITY:</b>
		<b>Medium</b>
<b>Corridors</b>	RO3: Chittagong/Mongla-Dhaka-[Banglabandha]-Phulbari-[Kakarbhitta]-Kathmandu	
<b>Project Description</b>	Due to the importance of connectivity for Nepal to India and the resulting traffic congestion along the Thankot–Nagdhunga–Naubise route, which is a bottleneck due to geophysical constraints, the Government of Nepal has formulated a plan to construct a 2.5–3.0 km tunnel between Naghunga and Naubise to ensure smooth and safe road traffic. In addition, the JICA 2013 Project for the Transport Sector in Nepal conducted by the JICA resident road expert included this project as a recommended regional road project.	
<b>Project Status</b>	The Department of Roads (DOR) under the Ministry of Physical Infrastructure and Transport (MOPIT) undertook a “Feasibility Study of Tunnel Roads (a. Nagdhunga–Naubise Tunnel Road)” in February 2013. JICA will conduct a project formulation study.	
<b>Social and Natural Environmental Impact</b>	Overall natural environment impact: C- Overall social environment impact: C+	
<b>Economic and Financial Considerations</b>	A DOR feasibility study (2013) estimated an EIRR of 19.65% and a BCR of 1.38. The DOR study estimated the total cost for only the Imakhel – Sisne Khola Tunnel Road section tunnel and approach (length: 2.3 km) as INR 4,977,537,251.10 (with VAT), equivalent to about USD 43 million. However, it is expected that JICA will conduct its own feasibility study for the full tunnel route project.	
<b>Counterpart Agency/Agencies</b>	DOR and MOPIT	
<b>Critical Success Factors</b>	Pending feasibility study by JICA and detailed design	

**Location**



<b>Project Ref:</b> RO3-g <b>Country:</b> Nepal <b>Sector:</b> Road <b>Project Type:</b> Loan	<b>PROJECT NAME:</b> <b>ADB Ghinaghat-Biratchowk road section</b>	<b>PRIORITY:</b>
		<b>Medium</b>
<b>Corridors</b>	RO3: Chittagong/Mongla-Dhaka-[Banglabandha]-Phulbari-[Kakarbhitta]-Kathmandu	
<b>Project Description</b>	The project involves a 22 km road section spur of RO3 corridor (SAARC Corridor 4) towards the Indian border. It has been identified and studied as part of the ADB Nepal Transport Project Preparatory Facility technical assistance project. ADB noted that there could be potential for JICA assistance and JICA will commence a project formulation study.	
<b>Project Status</b>	ADB detailed design being finalized	
<b>Social and Natural Environmental Impact</b>	Overall natural environment impact: C- Overall social environment impact: D	
<b>Economic and Financial Considerations</b>	The project is only a spur of the RO3 corridor and therefore the economic impact associated with regional connectivity may be low. ADB will soon be providing a cost estimate shortly (based on its detailed design study).	
<b>Counterpart Agency/Agencies</b>	Department of Roads (DOR) under the Ministry of Physical Infrastructure and Transport (MOPIT), Nepal	
<b>Critical Success Factors</b>	Pending additional information from ADB	

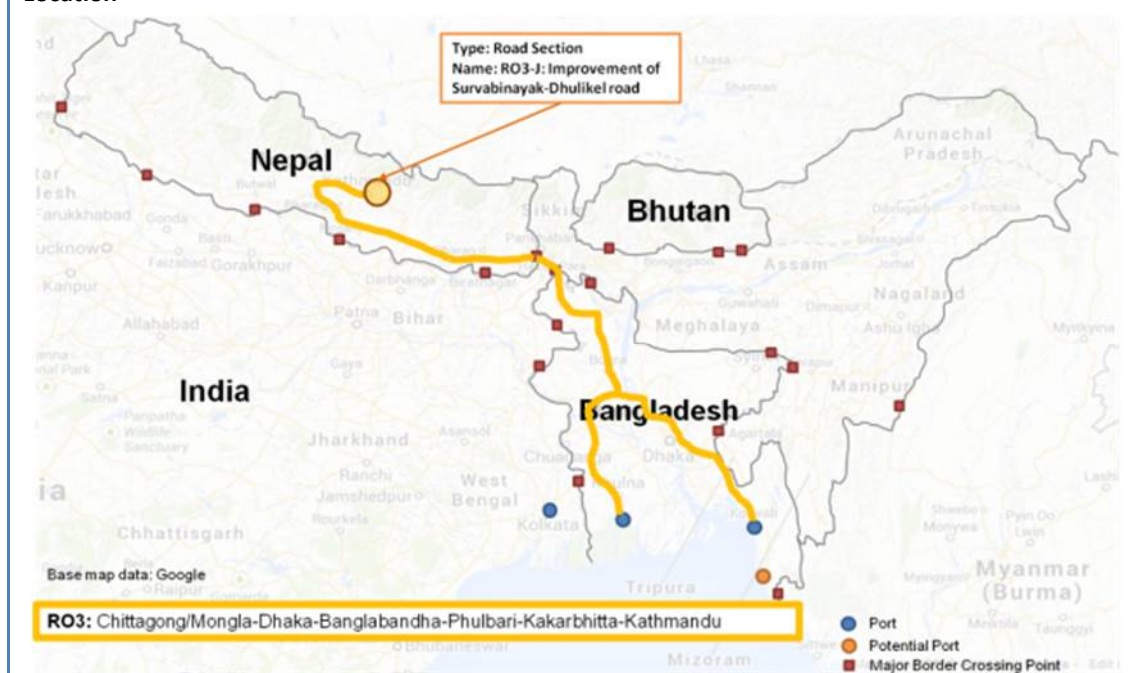
**Location**





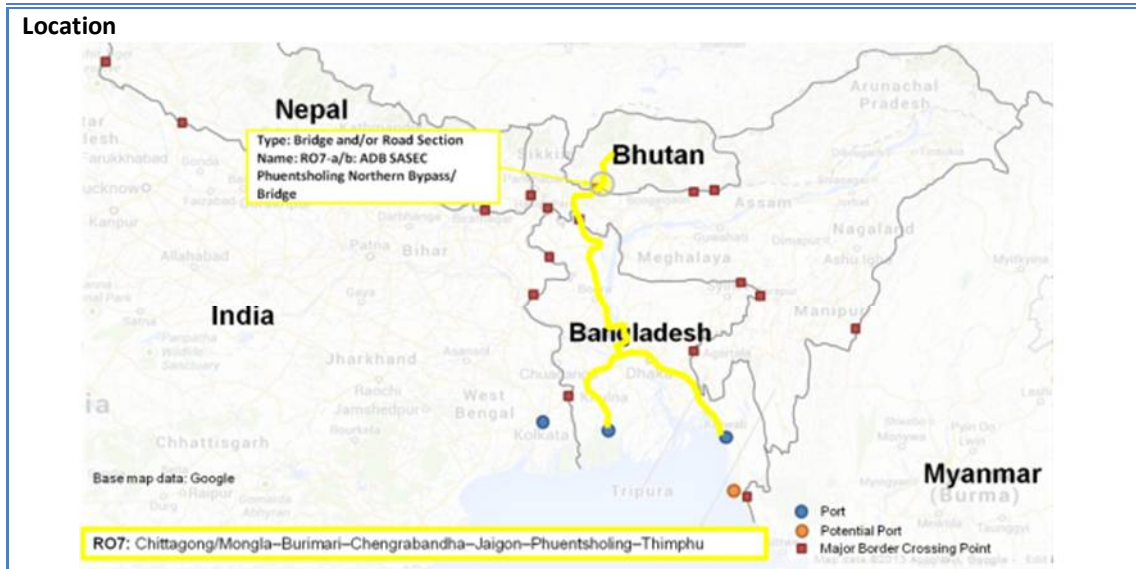
<b>Project Ref:</b> RO3-j <b>Country:</b> Nepal <b>Sector:</b> Road <b>Project Type:</b> Loan	<b>PROJECT NAME:</b> <b>Project for the Improvement of          Survabinayak–Dhulikel Road</b>	<b>PRIORITY:</b>
		<b>Medium</b>
<b>Corridors</b>	RO3: Chittagong/Mongla-Dhaka-[Banglabandha]-Phulbari-[Kakarbhitta]-Kathmandu	
<b>Project Description</b>	The project involves upgrading of 16 km, 2-lane dual carriageway of a key radial route in Kathmandu. It is an important gateway to eastern Nepal and forms a spur of the RO3 corridor (SAARC Corridor 4). In addition, the JICA 2013 Project for the Transport Sector in Nepal conducted by the JICA resident regional road expert included this one as a recommended regional road project and JICA will commence a project formulation study. The starting point of the project is the end of the Kathmandu-Bhaktapur Road, which was recently completed with grant aid from the Government of Japan; the road continues to Dhulikel, the end point of Sindhuli Road Project, another widening grant aid project of the Government of Japan.	
<b>Project Status</b>	More information is required	
<b>Social and Natural Environmental Impact</b>	Overall natural environment impact: C- Overall social environment impact: C+	
<b>Economic and Financial Considerations</b>	The project is only a spur of the RO3 corridor and therefore the economic impact associated with regional connectivity may be low. The cost of the highway length of 16 km was estimated to be USD 57.6 million and the cost of construction supervision was estimated to be USD 5.7 million (JICA, 2013).	
<b>Counterpart Agency/Agencies</b>	Department of Roads (DOR) under the Ministry of Physical Infrastructure and Transport (MOPIT), Nepal	
<b>Critical Success Factors</b>	More information is required for an assessment	

**Location**



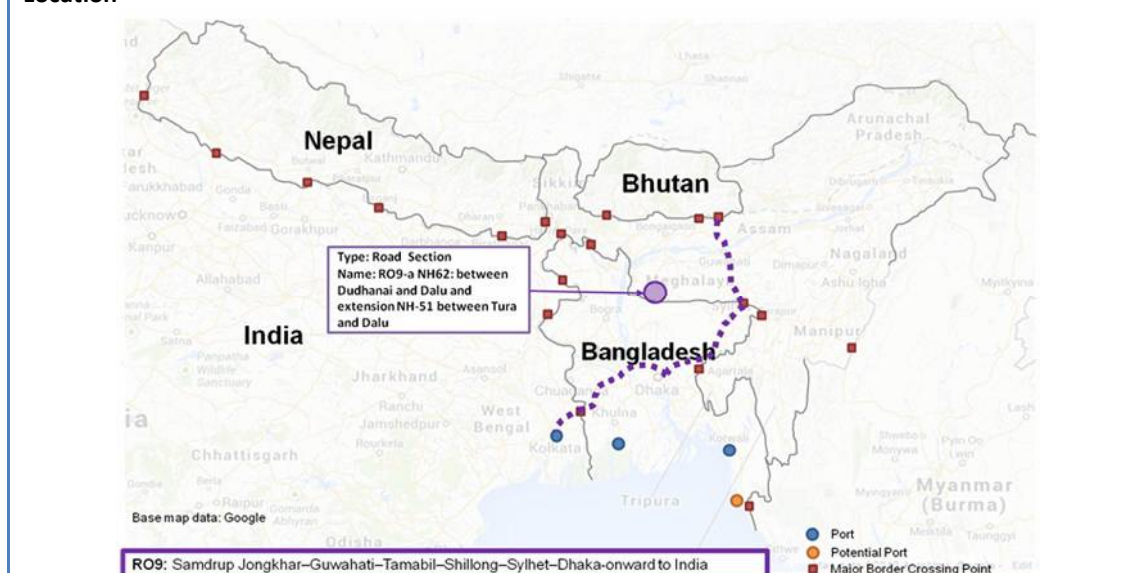
<b>Project Ref:</b> RO7-a, b <b>Country:</b> Bhutan <b>Sector:</b> Road <b>Project Type:</b> Loan	<b>PROJECT NAME:</b> <b>(i) ADB SASEC Northern Bypass of Phuentsholing (including road section and bridge); (ii) Only the bridge on the ADB SASEC Northern Bypass of Phuentsholing</b>	<b>PRIORITY:</b> <b>High</b>
<b>Corridors</b>	RO7: Chittagong/Mongla–[Burimari]–Chengrabandha–Jaigon–[Phuentsholing]–Thimphu	
<b>Project Description</b>	The project involves construction of a 4-lane bypass road 2.7 km in length including the third bridge. The project has strong strategic importance for unlocking Bhutan’s connectivity to India and beyond. It forms part of SAARC Corridors 3 and 8. ADB is developing the project and may require assistance.	
<b>Project Status</b>	ADB studies completed. Two options were proposed for the third bridge including a flyover option.	
<b>Social and Natural Environmental Impact</b>	Overall natural environment impact: D Overall social environment impact: C+	
<b>Economic and Financial Considerations</b>	Economic benefits include those associated with unlocking Bhutan-India connectivity and benefits from better access to Pasakha Industrial Estate. The initial estimated cost for the bridge option (option 1) was BTN 324 million or USD 5.9 million equivalent and for the flyover option (option 2) it was BTN 353 million or USD 6.4 million equivalent.	
<b>Counterpart Agency/Agencies</b>	Department of Roads under the Ministry of Works and Human Settlement, Bhutan	
<b>Critical Success Factors</b>	<ul style="list-style-type: none"> <li>• Decision to be made whether ADB requires assistance and whether the assistance would be for (i) the whole road section or (ii) only the bridge.</li> <li>• The flyover option has to traverse a plot of private land owned by the Tashi Group<sup>5</sup>; the land would need to be acquired.</li> <li>• There are numerous potential land acquisition and resettlement risks for the bypass road. The impact will mostly be experienced at the vegetable market next to the bus station near the existing bridge.</li> <li>• Success of the project will depend on the status of other ADB SASEC projects in the area.</li> </ul>	

<sup>5</sup> The Tashi Group was established in 1959 to “process, manufacture and market, the best of Bhutan and to share Bhutan’s bounty beyond its boundaries.”



<b>Project Ref:</b> RO9-a <b>Country:</b> India <b>Sector:</b> Road <b>Project Type:</b> Loan	<b>PROJECT NAME:</b> <b>NH62: between Dudhanai and Dalu and extension NH-51 between Tura and Dalu</b>	<b>PRIORITY:</b> <b>Medium</b>
<b>Corridors</b>	RO9: [Samdrup Jongkhar]–Guwahati–[Tamabil]–Shillong–Sylhet–Dhaka-onward to India via other corridors	
<b>Project Description</b>	The project involves NH62 between Dudhanai and Dalu and the NH-51 extension between Tura and Dalu – i.e., two road projects in Meghalaya. This includes an SARDP-NE Phase B section project (2 laning from Assam/Meghalaya border to Dalu via Baghmara – 161 km). The Ministry of Road Transport and Highways (MoRTH) will propose this project for JICA assistance. ADB has commenced a road project connecting to this one along NH-51 – Dalu to Garobadha (93.4 km). The ADB project will help connections to the SARDP-NE Phase B scheme, but the ADB project is not part of the SARDP itself; instead, it is part of the North Eastern State Roads Investment Project (NESRIP).	
<b>Project Status</b>	No detailed project report (DPR) has been prepared yet.	
<b>Social and Natural Environmental Impact</b>	Overall natural environment impact: D Overall social environment impact: D	
<b>Economic and Financial Considerations</b>	Since the project is a somewhat remote from SAARC Corridor 5, regional connectivity benefits are reduced. However, the area is important for exporting coal to Bangladesh, although this may trigger environmental concerns. Although no feasibility studies have been undertaken, for indicative purposes an initial cost estimate of USD 763 million was prepared. <sup>6</sup>	
<b>Counterpart Agency/Agencies</b>	Meghalaya Public Works Department (PWD) and MoRTH, India	
<b>Critical Success Factors</b>	Dependent on studies and DPR preparation for further details regarding deliverability constraints.	

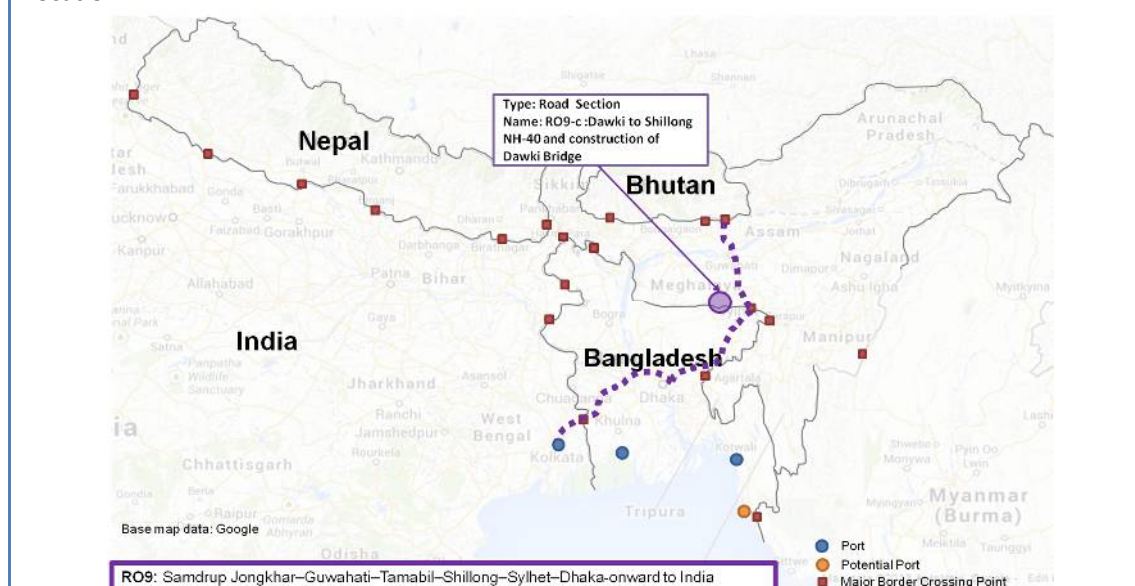
**Location**



<sup>6</sup> Assuming 212 km of 2 lane widening (161 km+ 51 km) using a unit cost of USD 3.6 million/km (based on similar rates for projects in North East India and other examples from India Gujarat Maritime Board Rates data 2010-11): 2 laning = 2 laning x 1 = USD 1.2 million/km, bridges = 5%/km = 50 m x 6 m x 2 laning = 600 m<sup>2</sup> x USD 3,000/ m<sup>2</sup> = USD 1.8 million / km, and Others = 5% / km = 50 m x 6 m x 2 laning = 600 m<sup>2</sup> x USD 1,000 / m<sup>2</sup> = USD 0.6 million / km; excludes land acquisition costs).

<b>Project Ref:</b> RO9-c <b>Country:</b> India <b>Sector:</b> Road <b>Project Type:</b> Loan	<b>PROJECT NAME:</b> <b>Dawki to Shillong NH-40 and construction of Dawki bridge</b>	<b>PRIORITY:</b> <b>Medium</b>
<b>Corridors</b>	RO9: [Samdrup Jongkhar]–Guwahati–[Tamabil]–Shillong–Sylhet–Dhaka–onward to India via other corridors	
<b>Project Description</b>	<p>This road project in Meghalaya entails Dawki to Shillong NH-40 and construction of the Dawki Bridge. The Ministry of Road Transport and Highways (MoRTH) will propose this project for assistance from JICA, but little information is available. The current condition is single lane and there is a major river crossing over the Lukha River.</p> <p>Current traffic may not justify major upgrading works. However, the project links to the key border crossing point at Dawki. ADB is looking into Mawryngkneng–Jowai (4-laning of NH44) and Jowai–Dawki (2-laning of NH40E).</p>	
<b>Project Status</b>	No detailed project report (DPR) has been prepared yet.	
<b>Social and Natural Environmental Impact</b>	Overall natural environment impact: C- Overall social environment impact: C+	
<b>Economic and Financial Considerations</b>	The project offers benefits from improving connectivity to key border crossing at Dawki. Although no feasibility studies have been undertaken, for indicative purposes an initial cost estimate of USD 306 million was prepared. <sup>7</sup>	
<b>Counterpart Agency/Agencies</b>	Meghalaya Public Works Department (PWD) and MoRTH, India	
<b>Critical Success Factors</b>	<ul style="list-style-type: none"> <li>• Dependent on studies and DPR preparation for further details regarding deliverability constraints. e.g., river crossings.</li> <li>• Dependent on traffic levels building on the regional corridor, which in turn depends on other projects along the corridor.</li> </ul>	

#### Location

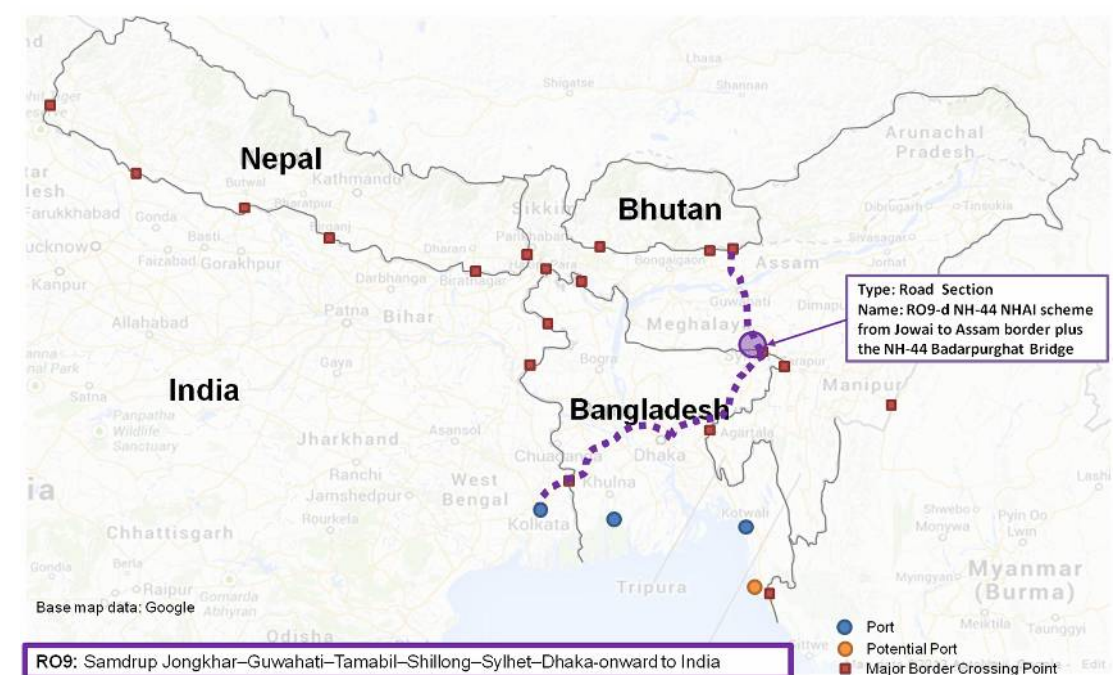


<sup>7</sup> Assuming about 85 km of widening from 1 to 2 lanes using a unit cost of USD 3.6 million/km (based on similar rates for projects in North East India and other examples from India Gujarat Maritime Board Rates data 2010-11): 2 laning = 2 laning x 1 = USD 1.2 million / km, bridges = 5% / km = 50 m x 6 m x 2 laning = 600 m<sup>2</sup> x USD 3,000 / m<sup>2</sup> = USD 1.8 million / km, and Others = 5% / km = 50 m x 6 m x 2 laning = 600 m<sup>2</sup> x USD 1,000 / m<sup>2</sup> = USD 0.6 million / km; excludes land acquisition costs).



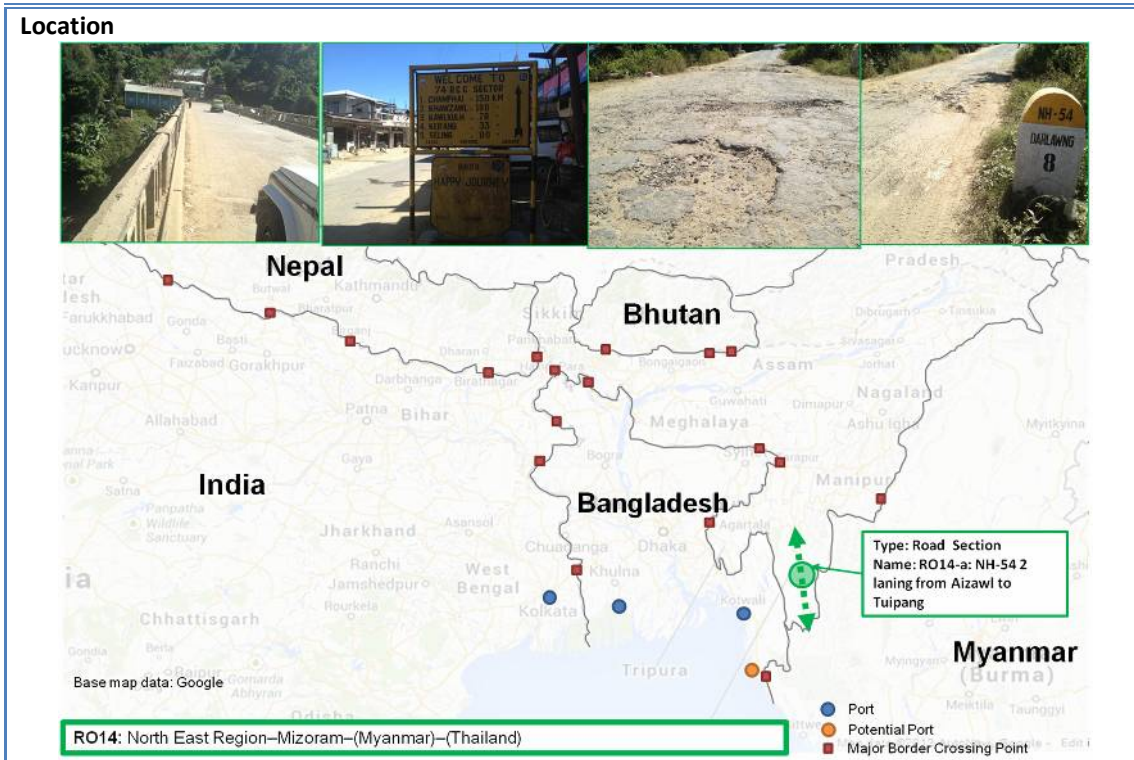
<b>Project Ref:</b> RO9-d <b>Country:</b> India <b>Sector:</b> Road <b>Project Type:</b> Loan	<b>PROJECT NAME:</b> <b>NH-44 NHA scheme from Jowai to Assam border plus the NH-44 Badarpurghat Bridge</b>	<b>PRIORITY:</b> <b>Medium</b>
<b>Corridors</b>	RO9: [Samdrup Jongkhar]–Guwahati–[Tamabil]–Shillong–Sylhet–Dhaka-onward to India via other corridors	
<b>Project Description</b>	The project entails NH-44 improvements in Meghalaya and Assam. One component is Jowai to the Assam border along NH-44, which is currently a National Highways Authority of India (NHA) road but the Meghalaya PWD has indicated that NHA may not have the funding. The section currently has double lanes, but is in poor condition and the southern part of route is prone to landslides. The second component is the Badarpurghat Bridge over the Barak River in Badarpurghat near Silchar (Assam) – MoRTH will propose this project for JICA assistance.	
<b>Project Status</b>	No detailed project report (DPR) has been prepared.	
<b>Social and Natural Environmental Impact</b>	Overall natural environment impact: D Overall social environment impact: C+	
<b>Economic and Financial Considerations</b>	The project will help unlock economic benefits associated with improved connectivity on corridor RO9. Cost estimates are not available since a DPR has not yet prepared; further discussions are required with NHA and MoRTH to confirm project km and other key information about these emerging projects.	
<b>Counterpart Agency/Agencies</b>	NHA and MoRTH, India	
<b>Critical Success Factors</b>	<ul style="list-style-type: none"> <li>• Road section dependent on discussions with NHA and MoRTH.</li> <li>• Dependent on studies and DPR preparation for further details regarding deliverability constraints.</li> <li>• Also dependent on progress of other schemes such as Jowai bypass.</li> </ul>	

**Location**



<b>Project Ref:</b> RO14-a <b>Country:</b> India <b>Sector:</b> Road <b>Project Type:</b> Loan	<b>PROJECT NAME:</b> <b>NH-54 2 laning from Aizawl to Tuipang</b>	<b>PRIORITY:</b>
		<b>Medium</b>
<b>Corridors</b>	RO14: North East Region–Mizoram–(Myanmar)–(Thailand)	
<b>Project Description</b>	This SARDP-NE Phase B project will provide 2 laning of 380 km of the NH-54 between Aizawl and Tuipang in Mizoram. This project has some strategic significance as it connects Mizoram with the Kaladan Multimodal Transit Transport Project and therefore provides a regional link. However, the terrain is mountainous and the project costs are high. There are also two major river crossings.	
<b>Project Status</b>	The project has been split into three detailed project reports (DPRs), which are ongoing or at the draft submission stage, although they were not at a stage to be shared with the JICA Survey Team.	
<b>Social and Natural Environmental Impact</b>	Overall natural environment impact: C- Overall social environment impact: C+	
<b>Economic and Financial Considerations</b>	This project has some potential to unlock economic benefits associated with improving connectivity from North East India to Myanmar through the Kaladan Multimodal Transit Transport Project. Although no feasibility studies have been undertaken, for indicative purposes an initial cost estimate of US 1,368 million (USD 1.368 billion) was prepared. <sup>8</sup>	
<b>Counterpart Agency/Agencies</b>	Mizoram Public Works Department (PWD)	
<b>Critical Success Factors</b>	<ul style="list-style-type: none"> <li>• Dependent on DPR finalization for further details regarding deliverability constraints (very mountainous terrain)</li> <li>• Some sections are very narrow with ridge either side</li> <li>• Traffic levels may not justify major investment.</li> <li>• PWD have an aspiration to change the Phase B scheme to include a bypass route of the first 68km from Aizawl. This may delay finalization of the project.</li> </ul>	

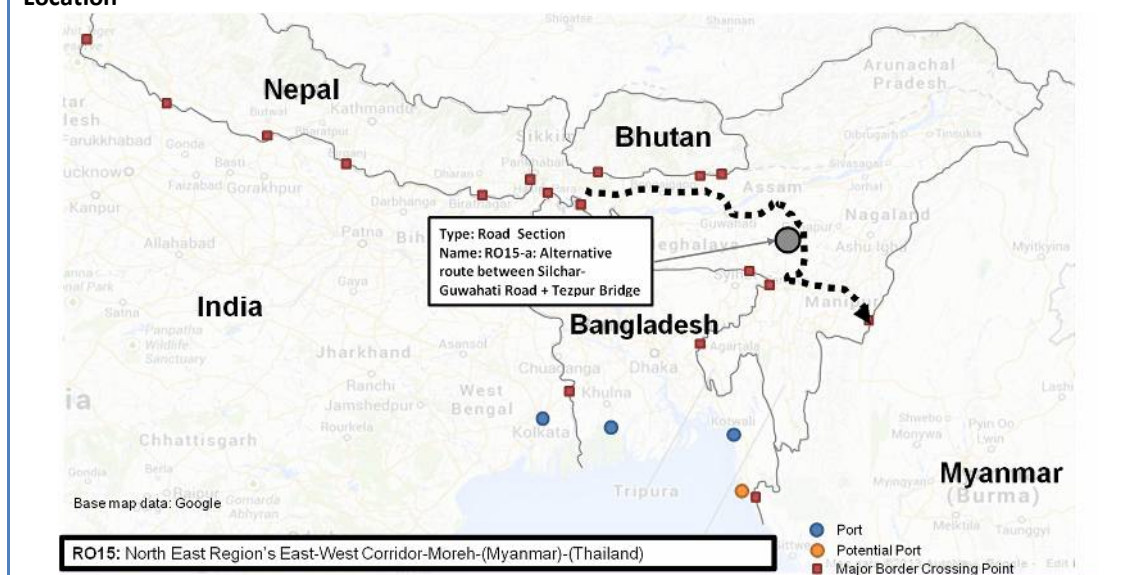
<sup>8</sup> Assuming 380 km of widening from 1 to 2 lanes using a unit cost of USD 3.6 million/km (based on similar rates for projects in North East India and other examples from India Gujarat Maritime Board Rates data 2010-11): 2 laning = 2 laning x 1 = USD 1.2 million / km, bridges = 5% / km = 50 m x 6 m x 2 laning = 600 m<sup>2</sup> x USD 3,000 / m<sup>2</sup> = USD 1.8 million / km, and Others = 5% / km = 50 m x 6 m x 2 laning = 600 m<sup>2</sup> x USD 1,000 / m<sup>2</sup> = USD 0.6 million / km; excludes land acquisition costs).





<b>Project Ref:</b> RO15-a <b>Country:</b> India <b>Sector:</b> Road <b>Project Type:</b> Loan	<b>PROJECT NAME:</b> <b>2-laning of alternative route Barak Valley (Silchar)–Guwahati Road via Harangajao–Turuk plus Tezpur Bridge</b>	<b>PRIORITY:</b>
		<b>Medium</b>
<b>Corridors</b>	RO15: North East Region’s East-West Corridor-Moreh-(Myanmar)-(Thailand)	
<b>Project Description</b>	<p>This is a SARDP-NE Phase B Project entailing 2-laning of an alternative route between Barak Valley (Silchar)–Guwahati road via Harangajao–Turuk. It forms a parallel route to the East-West Corridor route. A length of 234 km between Nelli and Harangajao will be broken down into five packages with an estimated 4–5 major bridges. The current condition is single lane with some sections intermediate lane.; 125 km is in hilly terrain. The land acquisition for this part is complete, while land acquisition for the other 99 km is under process.</p> <p>Harangajao–Turuk plus Tezpur Bridge is also included; the Ministry of Road Transport and Highways (MoRTH) will propose it for assistance from JICA.</p>	
<b>Project Status</b>	As noted, this is an SARDP-NE Phase B Project – a draft detailed project report (DPR) has been prepared and submitted, but it has not yet been approved.	
<b>Social and Natural Environmental Impact</b>	Overall natural environment impact: D Overall social environment impact: D	
<b>Economic and Financial Considerations</b>	The project is only a spur of the RO3 corridor and therefore the economic impact associated with regional connectivity may be low. The Assam Public Works Department (PWD) estimated the project cost as INR 2,000 crore <sup>9</sup> ; the DPR will soon be finalized and provided to JICA.	
<b>Counterpart Agency/Agencies</b>	Assam PWD and MoRTH, India	
<b>Critical Success Factors</b>	Dependent on DPR finalization for further details regarding deliverability constraints, traffic levels, and other key factors.	

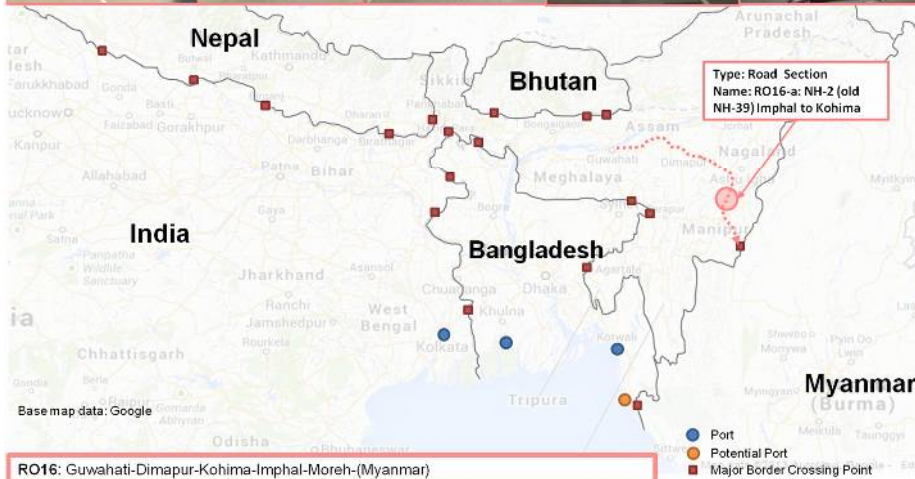
**Location**



<sup>9</sup> 1 crore = 10 million.

<b>Project Ref:</b> RO16-a <b>Country:</b> India <b>Sector:</b> Road <b>Project Type:</b> Loan	<b>PROJECT NAME:</b> <b>NH-2 (old NH-39) Imphal to Kohima</b>	<b>PRIORITY:</b> <b>Medium</b>
<b>Corridors</b>	RO16: Guwahati-Dimapur-Kohima-Imphal-Moreh-(Myanmar)	
<b>Project Description</b>	The project entails upgrading of NH-2 (old NH-39) between Imphal and Kohima. MoRTH has put forward this project for JICA assistance. It provides an important route connecting Manipur and Nagaland and links the ongoing Imphal–Moreh corridor. Some sections are in poor condition.	
<b>Project Status</b>	The project still needs to be transferred from the Border Roads Organisation (BRO) to the Ministry of Road Transport and Highways (MoRTH). The Public Works Department (PWD) noted that a previous MoRTH build-operate-transfer scheme for 4-laning failed.	
<b>Social and Natural Environmental Impact</b>	Overall natural environment impact: D Overall social environment impact: C+	
<b>Economic and Financial Considerations</b>	Potential economic benefits associated with unlocking North East Region connectivity for Nagaland and Manipur and regional connections to Myanmar. Although no feasibility studies have been undertaken, for indicative purposes an initial cost estimate of USD 907 million was prepared. <sup>10</sup>	
<b>Counterpart Agency/Agencies</b>	MoRTH if successfully transferred from BRO	
<b>Critical Success Factors</b>	<ul style="list-style-type: none"> <li>• Dependent on transfer from BRO to MoRTH.</li> <li>• Traffic levels may not justify major investment.</li> <li>• DPR finalization for further details regarding deliverability constraints.</li> </ul>	

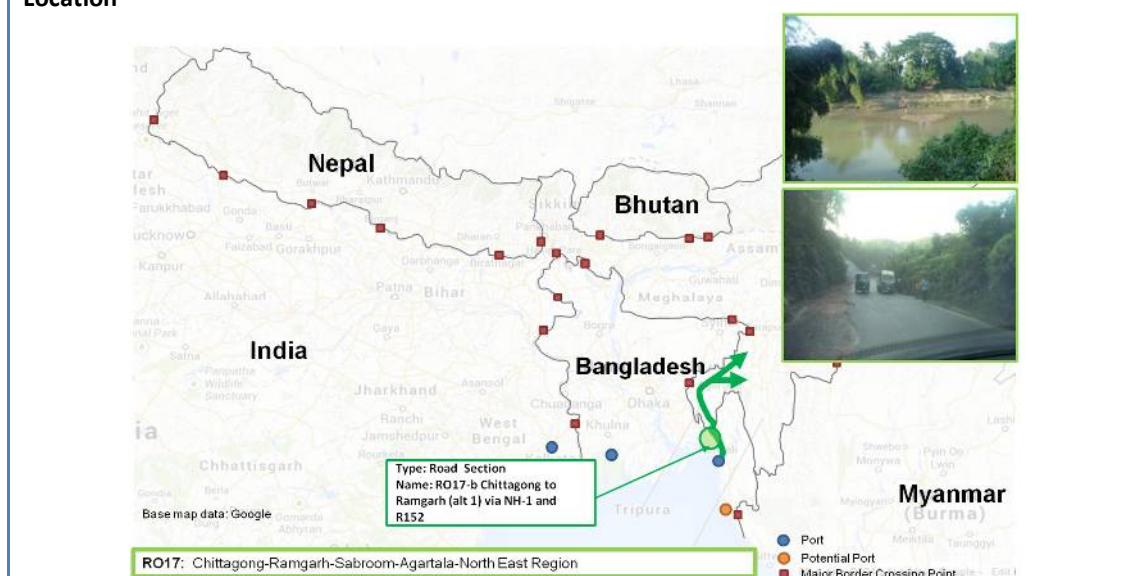
**Location**



<sup>10</sup> Assuming 140 km of widening from 2 to 4 lanes using a unit cost of USD 6.48 million/km (based on similar rates for projects in North East India and other examples from India Gujarat Maritime Board Rates data 2010-11): 4 laning = 2 laning x 2 x 0.7 = USD 1.2 million x 2 x 0.7 = USD 1.68 million / km, Bridges = 5% / km = 50 m x 6 m x 4 laning = 1,200 m<sup>2</sup> x USD 3,000 / m<sup>2</sup> = USD 3.6 million / km, Other = 5% / km = 50 m x 6 m x 4 laning = 1,200 m<sup>2</sup> x USD 1,000 / m<sup>2</sup> = USD 1.2 million / km; excludes land acquisition costs).

<b>Project Ref:</b> RO17-b <b>Country:</b> Bangladesh <b>Sector:</b> Road <b>Project Type:</b> Loan	<b>PROJECT NAME:</b> <b>RO17-b Chittagong to Ramgarh (Sabroom) alt 1: via NH-1 (AH-41), R151 then R152</b>	<b>PRIORITY:</b> <b>Medium</b>
<b>Corridors</b>	RO17: Chittagong-Ramgarh-Sabroom-Agartala-(North East Region)	
<b>Project Description</b>	This project seeks to unlock Bangladesh-India corridor capitalizing on connectivity opportunities from Chittagong northbound through Tripura in North East India and onwards into the North East Network. RO17-a utilizes ongoing improvements of the national highway.	
<b>Project Status</b>	No studies completed.	
<b>Social and Natural Environmental Impact</b>	Overall natural environment impact: D Overall social environment impact: D (RO17-a) and C+ (RO17-b)	
<b>Economic and Financial Considerations</b>	Potential economic benefits from providing better connectivity to Chittagong Port for North East India. Although no feasibility studies have been undertaken, for indicative purposes an initial cost estimate of USD 85 million was prepared. <sup>11</sup>	
<b>Counterpart Agency/Agencies</b>	Roads and Highways Department (RHD, Bangladesh)	
<b>Critical Success Factors</b>	<ul style="list-style-type: none"> <li>• Pending detailed project reports to set out potential deliverability issues.</li> <li>• Tradeoff between developing different corridors within Bangladesh to India, e.g., from Chittagong to Akhaura into the North East states or through Sabroom Tripura. An issue is that the Brahmanbaria area near Akhaura is a politically sensitive area and therefore more weight may be given to the Sabroom route.</li> <li>• Ongoing rail proposals on these routes.</li> <li>• Border issues (the bridge straddles both Indian and Bangladeshi territory).</li> </ul>	

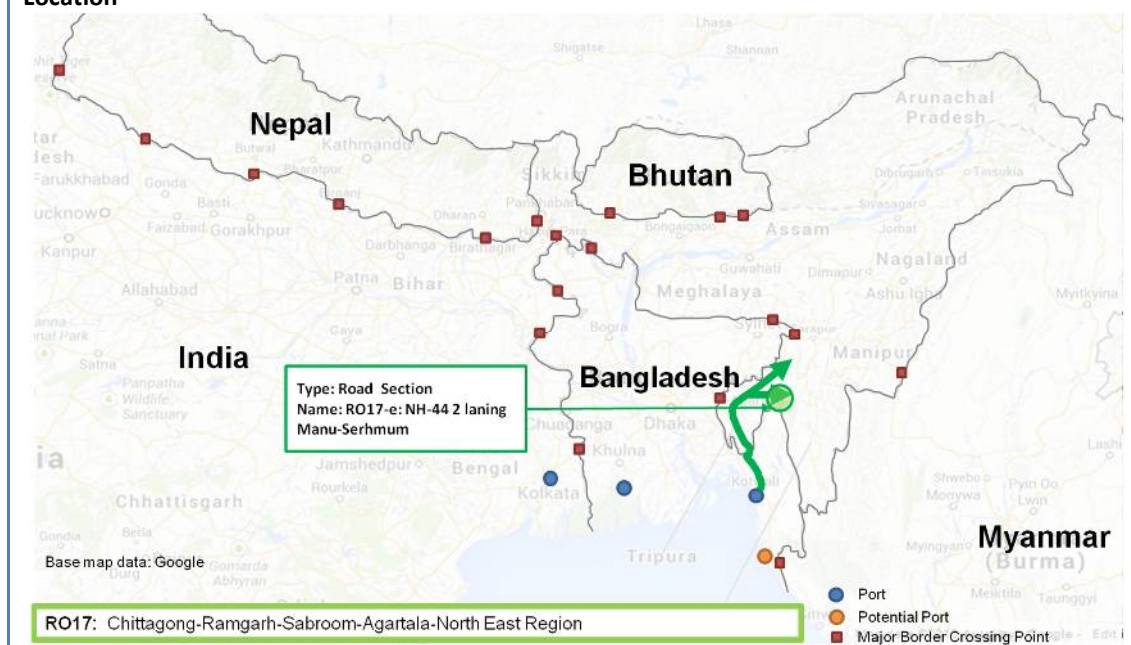
**Location**



<sup>11</sup> Assuming 38 km of widening/upgrading using a unit cost of USD 2.4 million/km (based on RHD assumption for RO1-a/b but reduced in consideration of the lower cost of a lower grade road; land acquisition costs were excluded). This also assumes that the project component on NH-1 will already be covered under the ongoing scheme.

<b>Project Ref:</b> RO17-e <b>Country:</b> India <b>Sector:</b> Road <b>Project Type:</b> Loan	<b>PROJECT NAME:</b> <b>NH-44a 2 Laning/Realignment from Manu to Serhmum</b>	<b>PRIORITY:</b> <b>Medium</b>
<b>Corridors</b>	RO17: Chittagong-Ramgarh-Sabroom-Agartala-(North East Region)	
<b>Project Description</b>	The project entails 2 laning/realignment from Manu to Tripura/Mizoram Border (86 km) or to Serhmum (30 km) – it seeks to unlock Bangladesh-North East India corridors capitalizing on connectivity opportunities from both the Ramgarh/Sabroom corridor and Akhaura/Agartala through Tripura and onto Mizoram. It forms an SARDP-NE Phase B Project proposed by the Ministry of Road Transport and Highways (MoRTH) for JICA funding subject to transfer from the Border Roads Organisation to the State PWD.	
<b>Project Status</b>	No studies completed.	
<b>Social and Natural Environmental Impact</b>	Overall natural environment impact: D Overall social environment impact: C+	
<b>Economic and Financial Considerations</b>	The project offers potential economic benefits from providing better connectivity to Chittagong Port for North East India. However, because the project is a more peripheral to the main regional corridor, the economic impact associated with regional connectivity may be lower. Although no feasibility studies have been undertaken, for indicative purposes an initial cost estimate of USD 108 million was prepared. <sup>12</sup>	
<b>Counterpart Agency/Agencies</b>	MoRTH if successfully transferred from the BRO and Tripura Public Works Department (PWD)	
<b>Critical Success Factors</b>	Pending detailed project report to set out any potential deliverability issues and traffic potential to help justify major investment.	

#### Location

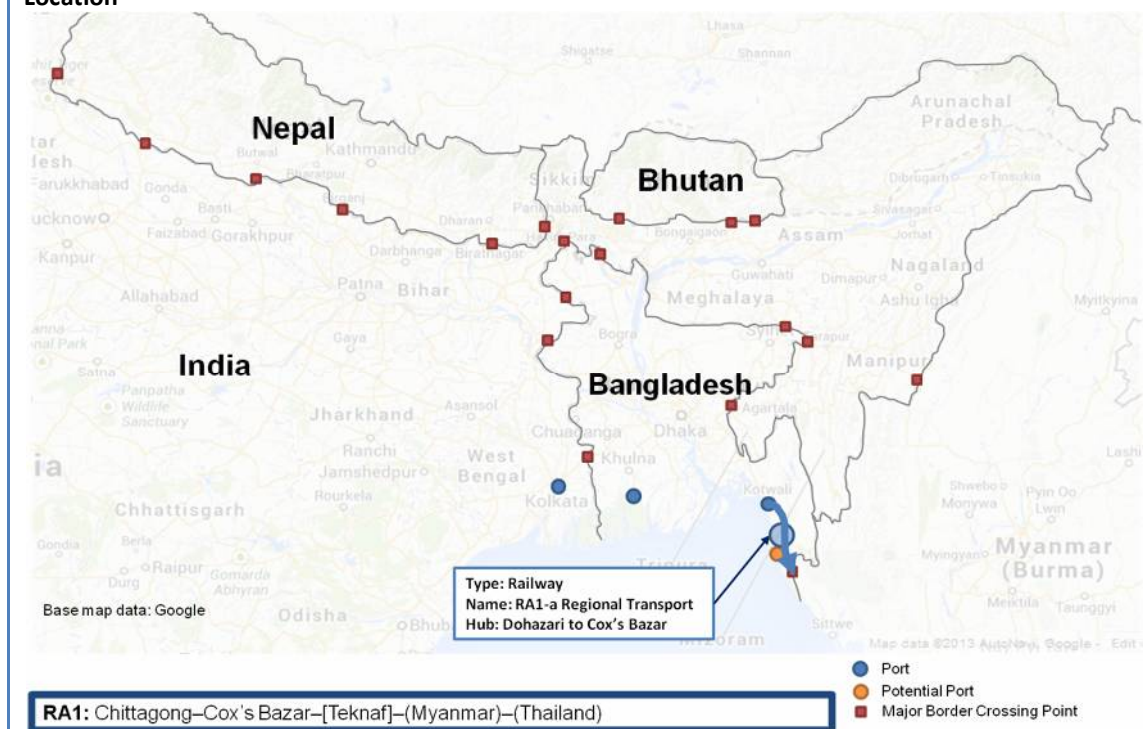


<sup>12</sup> Assuming 30 km of widening from 1 to 2 lanes using a unit cost of USD 3.6 million/km (based on similar rates for projects in North East India and other examples from India Gujarat Maritime Board Rates data 2010-11): 2 laning = 2 laning x 1 = USD 1.2 million / km, bridges = 5% / km = 50 m x 6 m x 2 laning = 600 m<sup>2</sup> x USD 3,000 / m<sup>2</sup> = USD 1.8 million / km, and Others = 5% / km = 50 m x 6 m x 2 laning = 600 m<sup>2</sup> x USD 1,000 / m<sup>2</sup> = USD 0.6 million / km; excludes land acquisition costs).



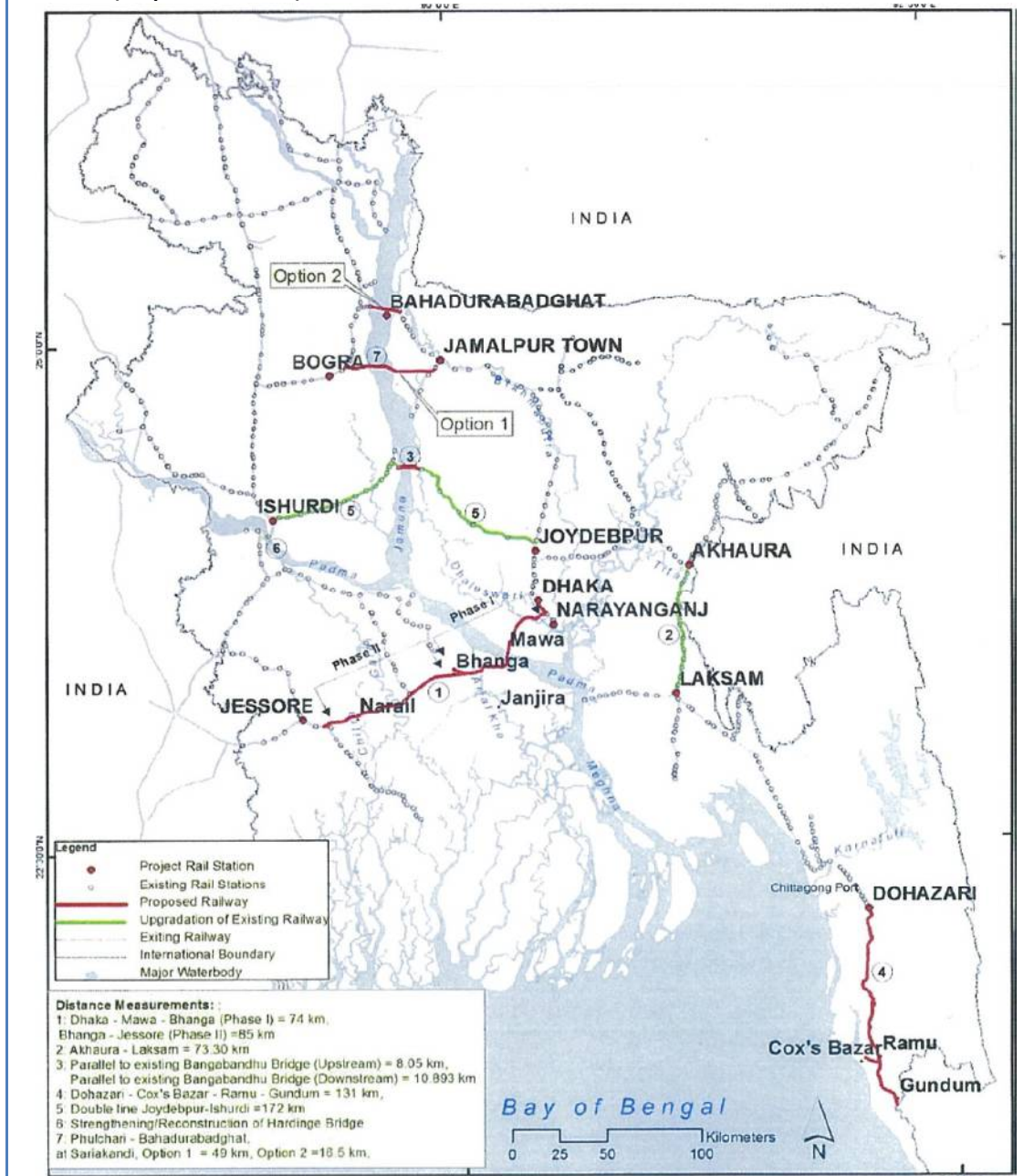
<b>Project Ref:</b> RA1-a <b>Country:</b> Bangladesh <b>Sector:</b> Railway <b>Project Type:</b> Loan	<b>PROJECT NAME:</b> <b>Bangladesh Regional Transport Hub: Dohazari to Cox's Bazar Railway</b>	<b>PRIORITY:</b> <b>Medium</b>
<b>Corridors</b>	RA1-a: Chittagong–Cox's Bazar–[Teknaf]-(Myanmar)-(Thailand)	
<b>Project Description</b>	The project entails construction of a single-line, meter-gauge railway track from Dohazari to Cox's Bazar (Trans-Asian Railway missing link). Part of the ADB Regional Cooperation and Integration project including further connection to Myanmar via Ramu and Ramu to Gundum. A single-track link will connect from Harbang 37.5 km south of Dohazari on the mainline to Cox's Bazar mainly to cater for passenger services, but if the Bangladesh Regional Port (deep-sea port, DSP) materializes the main line will be Dhaka, Comilla, Chittagong, to the DSP, with a branch to Cox's Bazar and beyond.	
<b>Project Status</b>	This is an ADB RCI project; ADB has noted the possibility of JICA assistance. The Feasibility Study has been completed, the Detailed Design is 48% complete, and tendering 5% is complete.	
<b>Social and Natural Environmental Impact</b>	Overall natural environment impact: C- Overall social environment impact: C+	
<b>Economic and Financial Considerations</b>	The project offers potential economic benefits from better connectivity to Chittagong port and the potential new seaport making Bangladesh a regional transport hub. ADB has estimated the cost for the longer Dohazari-Cox's Bazar-Ramu-Gundum project near the Myanmar border (128 km) at USD 300 million.	
<b>Counterpart Agency/Agencies</b>	Bangladesh Railway	
<b>Critical Success Factors</b>	<ul style="list-style-type: none"> <li>• Dohazari to Cox's Bazar Railway will be important for development of Bangladesh as a regional transport hub especially in the context of the DSP proposals</li> <li>• Potential cofinancing with ADB</li> </ul>	

**Location**



<b>Project Ref:</b> RA1-c <b>Country:</b> Bangladesh <b>Sector:</b> Railway <b>Project Type:</b> Loan	<b>PROJECT NAME:</b> <b>Other ADB RCI Projects across the Bangladesh rail network</b>	<b>PRIORITY:</b> <b>Medium</b>
<b>Corridors</b>	Various Regional Railway Corridors	
<b>Project Description</b>	<p>In addition to Dohazari to Cox’s Bazar, there are six other Regional Cooperation and Integration (RCI) subprojects across Bangladesh. Although ADB has not yet noted these for JICA assistance, it is recommended that further discussions be held. The six projects are as follows:</p> <ul style="list-style-type: none"> <li>- ADB RCI Subproject 1 – Alternate Route: New TAR Missing link Dhaka-Bhanga-Jessore over the Padma Bridge (FSR 44% complete, DD 35% complete);</li> <li>- ADB RCI subproject 2 – Double line and upgrade Akhaura-Laksam (FS 100% complete, DD 48% complete. tendering 17% complete);</li> <li>- ADB RCI Subproject 3 – Construction of railway bridge parallel to Bangabandu Bridge with provision of dual-gauge double track over the Jamuna River (FS 95%);</li> <li>- ADB RCI Subproject 5 – FS for double line Joydebpur-Ishurdi sections (FS 28%);</li> <li>- ADB RCI Subproject 6 – FS for strengthening / Re-construction of Hardinge Bridge (FS 80%); and</li> <li>- ADB RCI: Subproject 7 – Construction of railway bridge over the Jamuna River near Phulchari-Bahadurabad Ghat (FS 95%).</li> </ul>	
<b>Project Status</b>	See the above breakdown by subproject	
<b>Social and Natural Environmental Impact</b>	Social and natural environmental assessments are not yet available.	
<b>Economic and Financial Considerations</b>	Further discussions are required with ADB to consider each project.	
<b>Counterpart Agency/Agencies</b>	Bangladesh Railway	
<b>Critical Success Factors</b>	Further discussions required with ADB to consider each project	

Location (Map source: ADB)



## A8.2 Soft Transport Infrastructure Projects

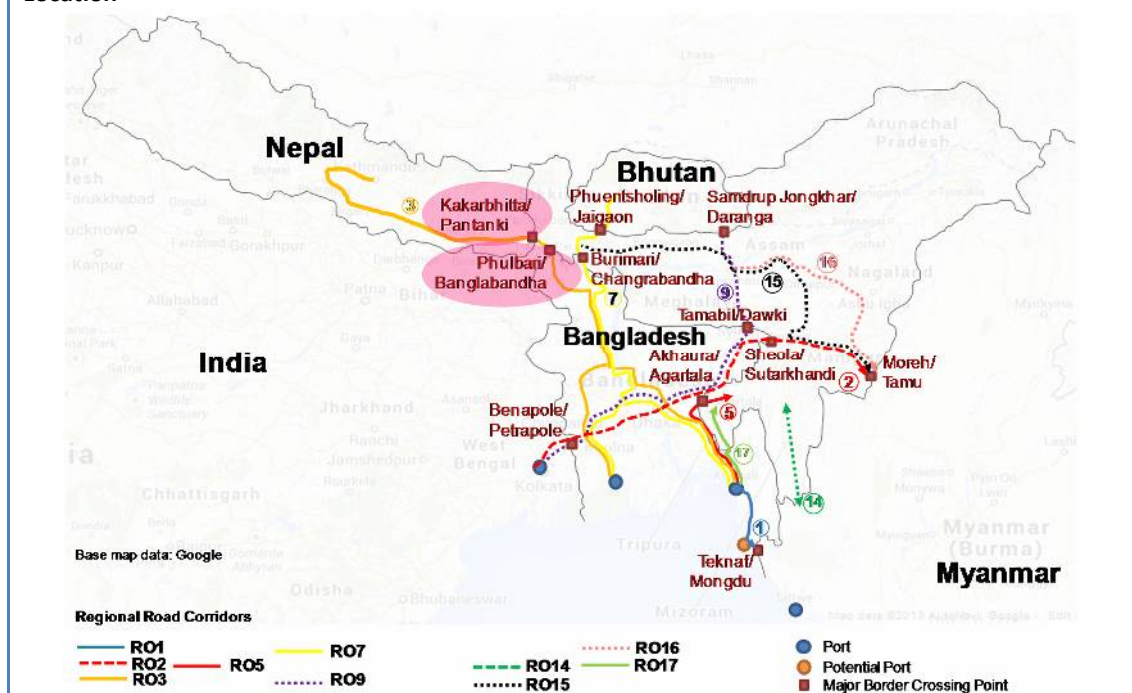
<p><b>Project Ref:</b> S1 <b>Countries:</b> Bangladesh, India, Nepal, and Myanmar <b>Sector:</b> Soft <b>Project Type:</b> Technical cooperation project and grant aid</p>	<p><b>PROJECT NAME:</b> <b>Pilot Border Crossing Efficiency Project</b></p>	<p><b>PRIORITY:</b> <b>High</b></p>
<p><b>Corridor:</b></p>	<p>RO3</p>	
<p><b>Project Description</b></p>	<p>The project will entail the implementation of pilot border crossing efficiency improvements, with suggested sites including (i) Kakarbhitta (Nepal)/Panitanki (India) and (ii) Phulbari (India)/Banglabandha (Bangladesh).</p> <p>Kakarbhitta/Panitanki and Phulbari/Banglabandha were selected for because there are more constraints on through transport along the route connecting Nepal and Bangladesh than along routes between other pairs of South Asian countries.</p> <p>Project components will include: (i) efficient transshipment and trailer and/or container swaps, and (ii) coordinated border management to simplify and streamline procedures (and which may serve as a “stepping stone” to implementation of one-stop border posts<sup>13</sup>). Specifically, the project will (i) prepare guidelines for the simplified border procedures agreed by stakeholders at each pilot BCP, (ii) facilitate discussions among stakeholders, and (iii) install equipment necessary for implementation of the streamlined procedures.</p>	
<p><b>Project Status:</b></p>	<p>Recent/planned border improvement projects along the subject corridor includes ADB assistance for an ICD at Kakarbhitta in 2010. Strategic Thrust 1 of the <i>SASEC Trade Facilitation Strategic Framework 2014-2018</i> calls for simplified and expedited border crossing formalities. An example from another region that may serve as a model and possibly provide “inspiration” is JICA technical assistance for one-stop border posts in Africa, including the construction of facilities, facilitation of legal procedures, and capacity building.</p> <p>A 2012 UNESCAP study assessed the advantages and disadvantages of various operational options, i.e., trailer swap, container swap, manual transloading, and no transloading.</p> <p>At the First Seminar for this survey at New Delhi on 16 January 2014, Mr. Atul Agarwal, Senior Transport Specialist, South Asia Sustainable Development, World Bank, mentioned facilitating India-Nepal-Bangladesh and India-Myanmar-Bangladesh trade as possible future activities. Also at the First Seminar, Dr. Prabir De, Senior Fellow, Research and Information System for Developing Countries, India, recommended a number of specific trade facilitation projects (e.g., cooperation among border agencies, joint customs control and joint border management, development of a SASEC single window, use of a modern vehicle tracking system).</p>	

<sup>13</sup> One-stop border posts combine two stops for national border processing into one and consolidate border control functions in a shared space for exiting one country and entering another.



<b>Social and Natural Environmental Impacts:</b>	None except to the extent that regional transport facilitation leads to increased traffic and associated emissions.
<b>Economic and Financial Considerations:</b>	The technical cooperation project will cost about JPY 150-250 million (USD 1.5–2.5 million equivalent). The cost of the grant aid component would be determined by the technical cooperation project depending on equipment requirements.
<b>Counterpart Agency/Agencies</b>	Customs authorities in the respective countries (Bangladesh, India, and Nepal) as lead agencies at their respective border crossing points). Other concerned agencies/entities include the Bangladesh Land Port Authority, Immigration, the Border Guard, and the private sector in Bangladesh; the Land Ports Authority of India, Immigration, the Border Security Force, and the private sector in India; and Immigration, the Border Police, and the private sector in Nepal.
<b>Critical Success Factors</b>	<p>To implement the specific organizational changes necessary to for coordinated border management requires political support at the highest levels, i.e., a mandate from the Prime Minister or similar official with authority over the agencies concerned. Based on this mandate, an interagency taskforce can undertake the work. However, a legal review of domestic laws and regulations may be required, and a lead agency nominated to direct the process, typically the customs authority.</p> <p>After implementation, a monitoring program to measure performance and efficiency, measured by reduced costs and minimized time at points of entry, should be implemented. A dialogue with the various stakeholders may productively complement such monitoring since customer satisfaction may be used to gauge the success of the program.</p>

**Location**



<p><b>Project Ref:</b> S2 <b>Countries:</b> Bangladesh, India, Nepal, and Myanmar <b>Sector:</b> Soft <b>Project Type:</b> Development survey and technical cooperation project</p>	<p><b>PROJECT NAME:</b> <b>Pilot Corridor Efficiency Project</b></p>	<p><b>PRIORITY:</b> <b>Medium</b></p>
<p><b>Corridor:</b></p>	<p>RO3</p>	
<p><b>Project Description</b></p>	<p>The project will entail introduction of a modern transit regime and implementation of an RFID/GPS tracking system for corridor management.</p>	
<p><b>Project Status</b></p>	<p>Strategic Thrust 6 of the <i>SASEC Trade Facilitation Strategic Framework 2014–2018</i> calls for the development of (bilateral) transport facilitation arrangements for through transport.<sup>14</sup> It suggests technological solutions for cargo and vehicle tracking such as the Secure Cross-Border Transport Model developed by UNESCAP, for which it has supported national workshops in the region. Also worth noting, there are a number of examples of transit transport systems in the world (e.g., under the TIR Convention, with 68 contracting parties; under the Northern Corridor Transit and Transport Agreement in East Africa).</p> <p>At the First Seminar for this Survey, Dr. Prabir De, Senior Fellow, Research and Information System for Developing Countries, India, recommended a number of specific trade facilitation projects, including use of modern vehicle tracking systems. To date, such tracking systems have not been introduced for trade facilitation in South Asia.</p>	
<p><b>Social and Natural Environmental Impacts</b></p>	<p>None except to the extent that regional transport facilitation leads to increased traffic and associated emissions.</p>	
<p><b>Economic and Financial Considerations</b></p>	<p>The development survey will cost about JPY 150-250 million (USD 1.5-2.5 million equivalent). The cost of the technical cooperation project would be determined by the development survey.</p>	
<p><b>Counterpart Agency/Agencies</b></p>	<p>BIMSTEC Secretariat (to be established in March 2014) and/or the respective ministries of transport and/or customs authorities, depending on capacities; alternatively, the system may be operated as a public-private partnership, with the PPP acting as a trusted third party offering services to the complete spectrum of public and private stakeholders.<sup>15</sup></p>	
<p><b>Critical Success Factors</b></p>	<p>Lessons learned from the implementation of trade corridor management systems elsewhere are that such systems: (i) must not only assist the operational processes of customs, ports, and road authorities, but must</p>	

<sup>14</sup> The authorities in the region require effective systems that can provide a sufficient level of control over goods in transit, while assisting rather than obstructing the efficient flow of goods across national borders and through the major ports. New technology can assist the authorities in achieving these objectives by automating some of the processes involved in the identification, tracking, and verification of freight and freight documentation. Technology options include (i) satellite-based vehicle tracking combined with active RFID electronic seals and (ii) passive RFID.

<sup>15</sup> This latter approach would offer the following benefits compared to the first option: (i) the system can be designed to incorporate the needs of all government agencies as well as those of the private sector – the incentive would be to increase the market for offering services to as many customers as possible; (ii) the same concept can be extended to other countries, at least along those trade corridors where the volumes of traffic can justify the deployment of infrastructure; (iii) the cost of infrastructure would be carried by the private partners to the PPP, hence taking the financial burden off the respective authorities and the taxpayers of the concerned countries; and (iv) the end users paying for the system would be those realizing the most direct financial benefits (i.e., the cargo owners and logistics service providers that will experience reduced delays in the transport of cargo).

also enforce governance onto such processes; (ii) must be simple to operate; (iii) must provide benefits for public stakeholders (customs, ports, and roads authorities) and private stakeholders (cargo owners and logistics service providers); (iv) must be sufficiently affordable for cargo owners to voluntarily carry the cost of compliance in exchange for the expected benefit of streamlined trade corridors, in order to ensure large-scale uptake without placing any financial burden on taxpayers; and (v) must address the specific needs of customs authorities to apply control over goods from source to destination, while at the same time streamlining customs processes in order to create benefits for cargo owners by way of reduced delays at border posts and through customs gates.

**Location**



<b>Project Ref:</b> S3 <b>Countries:</b> Region-wide <b>Sector:</b> Soft <b>Project Type:</b> A series of development surveys	<b>PROJECT NAME:</b> <b>Harmonization of Maximum Gross Vehicle Mass and Axle Load Limits in the Region</b>	<b>PRIORITY:</b> <b>Medium</b>
<b>Corridor</b>	Region-wide	
<b>Project Description</b>	Regarding axle loads, components include: (i) examination of the relationship between/among axle loads, transport costs, and construction/rehabilitation/maintenance costs by different road standards corresponding to different axle load limits; and (ii) continuous discussion among the countries on appropriate regional axle load limits to minimize total transport costs and construction/rehabilitation/maintenance costs. In the long term, harmonization of transport-related rules and regulations may be pursued (see below).	
<b>Project Status:</b>	Limited efforts at harmonizing transport-related regulations and rules have been undertaken in the region to date. An example from another region that may serve as a model and possibly provide “inspiration” is JICA technical assistance for the East African Community’s agreement on overload control (2011).	
<b>Social and Natural Environmental Impacts</b>	None except to the extent that regional transport facilitation leads to increased traffic and associated emissions.	
<b>Economic and Financial Considerations</b>	The first development survey will cost about JPY 100–150 million (USD 1.0–1.5 million equivalent), including the costs of intergovernmental workshops and committee meetings. The cost(s) of the following surveys would be identified in the initial development survey.	
<b>Counterpart Agency/Agencies</b>	BIMSTEC Secretariat (to be established in March 2014) and/or the respective ministries of transport, depending on respective capacities.	
<b>Critical Success Factors</b>	The mutual trust and confidence between/among the countries in the reliability of each others’ certificates, checks, inspections, and the like may in some cases need to be enhanced by the harmonization of the conditions and procedures for such certificates, checks, and inspections. However, it is not possible to harmonize (make uniform) between/among the countries the whole body of law/regulations/procedures/documents related to cross-border transport operations. The critical minimum required level of harmonization is to be sought so as to create enough trust between the countries. Maximum vehicle mass and axle load regulations are one such critical area.	

<b>Project Ref:</b> S4 <b>Countries:</b> Region-wide <b>Sector:</b> Soft <b>Project Type:</b> Development survey(s) and/or dispatch of JICA expert(s)	<b>PROJECT NAME:</b> <b>Determination of Appropriate Levels of                  Transit Charges</b>	<b>PRIORITY:</b> High
<b>Corridor</b>	Region-wide	
<b>Project Description</b>	<p>Drawing upon global best practices (e.g., trans-Alpine transit charges in Switzerland and Austria), the project will define the transit charges to be assessed in the region. While some initial research has been undertaken in this Survey, specific tasks will include: (i) evaluating the economic and financial benefits and costs occasioned for each of the BIMSTEC countries by the opening of transit routes; (ii) developing an initial transit fee structure by route and vehicle category in accordance with agreed charging principles and proposing an adjustment mechanism for inflation – to the extent possible, the transit fee structure should take into account factors such as willingness to pay and affordability, operations and maintenance cost, cost recovery, and an equitable distribution of transport cost savings; and (iii) recommending a charging system and transit fee structure for each route. For example, the toll rates by vehicle type could be given as factors, based on international experience (e.g., truck-trailer x times light truck) and perhaps indicative transit toll rates per km for each country be given by road standard.</p> <p>The output would include a table of toll rates by vehicle class by transit route, both gross and net (i.e., gross, the total tolls payable for use of the route, and net the toll payable at customs, with the balance to be paid at the toll plazas/bridges on route).</p>	
<b>Project Status:</b>	<p>The concept of transit charges is relatively new in South Asia and has not been discussed much among the countries. Some (confidential) research has been undertaken in Bangladesh to suggest possible levels of transit charges (e.g., by the governmental core committee on transit). Also, some initial research has been undertaken in this Survey. However, diplomatic initiatives will be required, as noted by Dr. Mohammed Mahfuz Kabir, Senior Research Fellow, Bangladesh Institute of International Strategic Studies (BISS), at the First Seminar for this survey held at New Delhi on 16 January 2014.</p>	
<b>Social and Natural                  Environmental Impacts:</b>	None except to the extent that regional transport facilitation leads to increased traffic and associated emissions.	
<b>Economic and Financial                  Considerations</b>	<p>The first development survey will cost about JPY 100–150 million (USD 1.0–1.5 million equivalent), including the costs of intergovernmental workshops and committee meetings. This assumes that a long-term expert dispatched to BIMSTEC would work together with the survey team. The cost(s) of the following surveys would be identified in the initial survey.</p>	
<b>Counterpart                  Agency/Agencies</b>	BIMSTEC Secretariat (to be established in March 2014) and/or the respective ministries of transport, depending on respective capacities	
<b>Critical Success Factors</b>	<p>Considering the sensitivity of the transit charge issue in the region, it will be important for the proposed project to receive political support from the highest levels.</p> <p>Experience shows that: (i) transit charges should be set to cover road construction, rehabilitation, and maintenance costs imposed by the</p>	

	<p>transit traffic; (ii) environmental and other external costs may be considered if they can be calculated; (iii) if there are any additional charges, they should be collected from both transit and domestic vehicles equally, and should benefit both transit and domestic transport equally; and (iv) regional studies to estimate road construction, rehabilitation, and maintenance costs per vehicle-km along the transit routes in the current survey can suggest approximate charge levels and assess costs versus benefits.</p> <p>For the subject countries of this survey – Bangladesh, Bhutan, India, Myanmar, Nepal, and Thailand – depending on its capacity, BIMSTEC may be the most suitable organization for consideration of transit charges because these countries constitute six of its seven members. Also, there may be a potential for a stronger, more autonomous secretariat in BIMSTEC compared to SAARC, especially if it is established with a permanent set of directors with sector experience and expertise.</p>
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<p><b>Project Ref:</b> S5 <b>Countries:</b> Region-wide <b>Sector:</b> Soft <b>Project Type:</b> Technical cooperation (e.g., a series of development surveys, dispatch of JICA experts)</p>	<p><b>PROJECT NAME:</b> <b>Comprehensive Regional Transport Agreement</b></p>	<p><b>PRIORITY:</b> <b>Medium</b></p>
<p><b>Corridor:</b></p>	<p>Region-wide</p>	
<p><b>Project Description</b></p>	<p>The project entails development of a comprehensive regional transport agreement, covering both cross-border road and rail transport. A model agreement for the subject countries of this survey may be prepared as a first step, with the counterpart agency/agencies after the BIMSTEC secretariat and/or the respective ministries of transport. Issues to be addressed will include: (i) the degree of harmonization required, (ii) adoption of a free or regulated approach, (iii) the use of technical annexes or implementing protocols, and (iii) the choice between separate agreements and a single framework agreement. Specifically, the project will include: (i) continuous, facilitated discussion and consensus building for a transport agreement among the concerned countries, (ii) studies to examine and to draft an appropriate comprehensive transport agreement based on case studies of regional transport agreements in other parts in the world and legal frameworks of the member countries, and (iii) in the long term, ratification of the regional transport agreement.</p>	
<p><b>Project Status</b></p>	<p>In SAARC a draft framework motor vehicle agreement and a draft framework railway agreement including definition of SAARC railway corridors have been prepared and revised during negotiations among the member countries.<sup>16</sup> Even assuming finalization of these framework agreements, detailed implementation annexes and protocols would need to be worked out.</p>	
<p><b>Social and Natural Environmental Impacts</b></p>	<p>None except to the extent that regional transport facilitation leads to increased traffic and associated emissions.</p>	
<p><b>Economic and Financial Considerations</b></p>	<p>The first development survey will cost about JPY 200–300 million (USD 2.0–3.0 million equivalent), including the costs of intergovernmental workshops and committee meetings. This assumes that a long-term expert dispatched to BIMSTEC would work together with the survey team. The cost(s) of the following surveys would be identified in the initial survey.</p>	
<p><b>Counterpart Agency/Agencies</b></p>	<p>BIMSTEC Secretariat (to be established in March 2014) and/or the respective ministries of transport, depending on respective capacities.</p>	
<p><b>Critical Success Factors</b></p>	<p>A critical issue for the countries to consider is whether separate transport and transit agreements or a single framework agreement should be pursued. Generally, a multilateral, “big bang approach” to the removal of impediments, with simultaneous action by all countries in a region to liberalize the free flow of people, goods, and vehicles, is preferable. One important factor is that a transit operation generally (although in this region not always) involves at least three countries, and it is difficult to organize a three-country relationship via bilateral</p>	

<sup>16</sup> At the Final Seminar for this Survey held in Guwahati on 13 February 2014, Dr. Prabir De, Senior Fellow, Research and Information System for Developing Countries, noted the possibility of an ASEAN-India Transit Transport Agreement, as proposed by the Indian Prime Minister at the ASEAN-India Summit in Brunei in September 2013.



	<p>agreements, rather than a trilateral or plurilateral (multilateral) agreement. Thus, other (sub)regions such as the Greater Mekong Subregion have opted for multi-country agreements. However, since the extent of free movement of goods and vehicles between and among the South Asian countries now varies considerably (e.g., between India and Bhutan there are very few restrictions, while between India and Bangladesh there are very substantial restrictions), adoption of a multilateral solution may prove challenging. But if a bilateral approach is chosen, it is recommended that the bilateral agreements follow a common model so as to promote harmonization in order to make the subsequent adoption of a regional agreement easier.</p>
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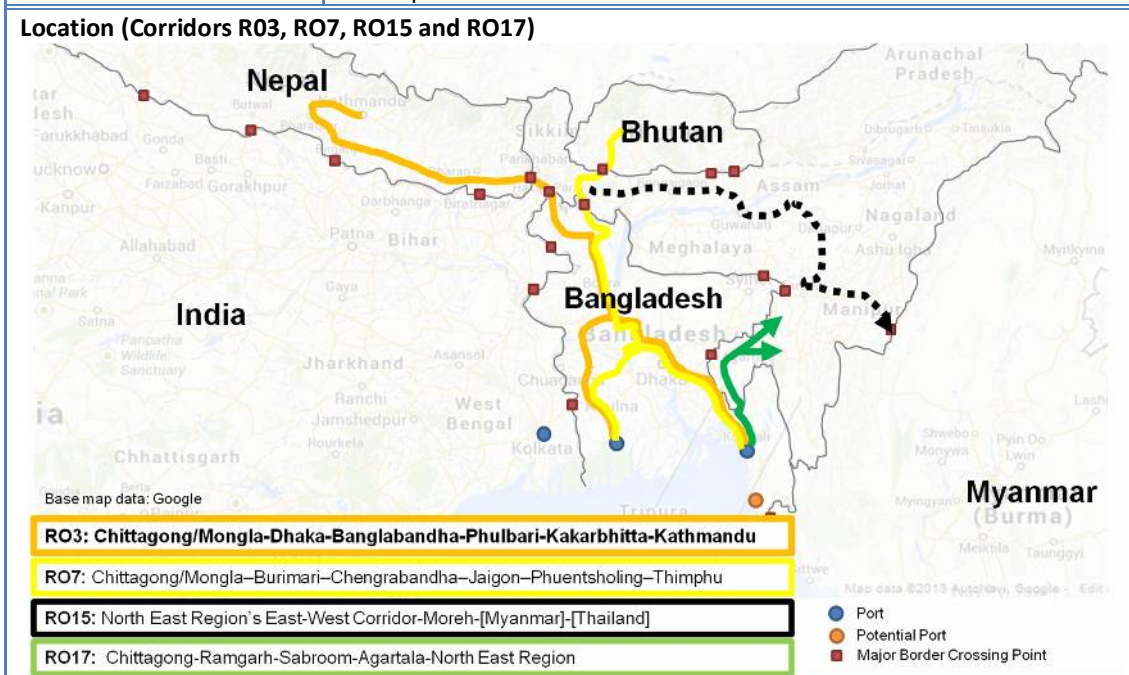


### A8.3 Logistics Projects

<b>Project Ref:</b> L1 <b>Country:</b> India <b>Sector:</b> Logistics <b>Project Type:</b> Grant	<b>PROJECT NAME:</b> <b>Improvement of Border Crossing Points for Regional Connectivity between Landlocked Countries/Regions and Bangladesh</b>	<b>PRIORITY:</b> <b>High</b>
<b>Corridor(s)</b>	RO3, RO7, RO15, and RO17	
<b>Project Description</b>	<p>The project will provide assistance for improvement of border crossing points (BCPs) along corridors connecting Bangladesh and landlocked countries.</p> <p>The pilot corridor to be the focus of S1 (including Kakarbhitta (Nepal)/Panitanki (India) and Phulbari (India)/Banglabandha (Bangladesh) may be the (initial) focus of this project so as to complement soft improvements with associated facilities, as necessary.</p> <p>Specifically, BCP improvements may include the following: (i) administration buildings, including customs, immigration, and quarantine (CIQ) facilities for trade facilitation; (ii) warehouses; (iii) yard pavements; (iv) office space for banks and freight forwarders; (v) weighbridges and other inspection machines; (vi) living quarters for government officers; and (vii) some specific items such as a cold storage facility at Banglabandha).</p>	
<b>Project Status</b>	<p>Government authorities such as the Land Ports Authority of India (LPAI) and the Bangladesh Land Port Authority (BLPA) as well as international development partners have plans to develop border stations into integrated check posts (ICP) and/or “land ports”. Along the pilot corridor, a new ICD was constructed at Kakarbhitta in 2010 with ADB assistance, with operation by the Nepal Intermodal Transport Development Board; improvement of Panitanki is to be implemented (only) in the third stage of ICP development; and Phulbari and Banglabandha, managed by the respective national land port(s) authorities, have commenced operations for trade facilitation, but may require further improvements (e.g., a cold storage facility has been suggested for Banglabandha).<sup>17</sup></p>	
<b>Social and Natural Environmental Impact</b>	Limited	
<b>Economic and Financial Considerations</b>	<p>No economic or financial analyses have been undertaken, but the projects are aimed at facilitating trade, which should have both economic and financial benefits (i.e., to society as a whole and to the facility operator). Traffic at Karkarbhitta/Panitanki was 250,000 tons from India to Nepal and 133,750 tons from Nepal to India in 2009–10. Traffic at Phulbari/Banglabandha was 146,000 tons from India to Bangladesh and 31,000 tons from Bangladesh to India in 2011. Improvement costs would need to be specified in subsequent, detailed studies, but would likely be in the range of USD 5–15 million per BCP.</p>	
<b>Counterpart Agency/Agencies</b>	Bangladesh Land Port Authority, Bhutan Department of Customs, Land Ports Authority of India, and Nepal Department of Customs	

<sup>17</sup> BLPA constructed a building at Bangladbandha with some associated facilities (offices, warehouse, barracks, parking yard, and boundary wall, on 5 ha).

<b>Critical Success Factors</b>	<ul style="list-style-type: none"> <li>• FS/DD for each ICP is required before implementation.</li> <li>• Since many BCPs are listed as future assistance targets by the ADB and/or the World Bank, further liaison with these organizations is required.</li> </ul>
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<p><b>Project Ref:</b> L2 <b>Country:</b> India <b>Sector:</b> Logistics <b>Project Type:</b> Loan and Technical Assistance (Dispatch of Experts)</p>	<p><b>PROJECT NAME:</b> <b>Pilot Unit Load System Project</b></p>	<p><b>PRIORITY:</b> <b>High</b></p>
<p><b>Corridor(s)</b></p>	<p>All corridors where currently inland bagged cargo movement prevails, especially between “mainland India” (e.g., Delhi, West Bengal) and India’s North East Region</p>	
<p><b>Project Description</b></p>	<p>The project entails facility improvements (e.g., decked warehouse, forklifts, yard pavement) to support development of unit load system. Public support of a pilot inland container depot (ICD) at Amingaon (Guwahati) is envisaged with a capacity of 2,000 containers and 10,000 sheets/pallets. Specifically, the project would include support for unit load system assets and grant technical assistance (TA).</p> <p>The counterpart, the Ministry of Railways, would become the owner of the assets procured by the loan (e.g., ICD equipment), which would be leased to the Container Corporation of India Ltd. (CONCOR), a Category 1 Miniratna<sup>18</sup> Public Sector undertaking under the Indian Ministry of Railways. CONCOR would utilize the facilities and/or sublet certain facilities to trucking companies for multimodal transport. Lease payments received by CONCOR will be applied to loan repayment.</p> <p>The TA will assist the Ministry of Railways and CONCOR with proper investment and implementation of 12-foot containers. It is envisaged that three experts on logistics would be dispatched for 30 months each.</p> <p>The Government of India would contribute land and the organization for asset management in the Ministry of Railways.</p>	
<p><b>Project Status</b></p>	<p>The project would demonstrate (pilot) improvement of the traditional, inefficient cargo handling system. No preparation studies have been undertaken to date. Trucking companies are aware of the system and are willing to implement it, but they are reluctant to invest without coordinated railway and ICD operation. Therefore, as stated below, all stakeholders including freight forwarders and cargo owners) should be informed.</p>	
<p><b>Social and Natural Environmental Impact</b></p>	<p>Positive environmental impact because increased containerization will reduce negative environmental impacts</p>	
<p><b>Economic and Financial Considerations</b></p>	<p>The estimated cost of the project is USD 7.0 million equivalent, including USD 1.5 million for two forklifts, USD 3.0 million for a decked warehouse, USD 2.0 million for yard pavement, and USD 0.5 million for additional hooks and improvement on chassis.</p> <p>At present (2011–12), an estimated 8.7 million metric tons is sent from the North East Region to mainland India, and 6.0 million metric tons moves in the opposite direction. By 2030 these flows are forecast to increase to 15.0 and 12.0 million metric tons, respectively.</p> <p>Not only would the project be financially feasible, but also the economic impact would be positive. Container management has positive spillover effects on the steel industry. India has the potential to be a major container manufacturer, which would create employment.</p>	

<sup>18</sup> Has made profits continuously for the last three years or earned a net profit of INR 30 crore or more in one of the three years.

<b>Counterpart Agency/Agencies</b>	Ministry of Railways, India
<b>Critical Success Factors</b>	<ul style="list-style-type: none"><li>• FS/DD required before implementation</li><li>• Further liaison with ADB and the World Bank</li><li>• Consultation with stakeholders (e.g., truck companies, railway operators, forwarders, cargo owners)</li></ul>
<b>Location</b>	The pilot ICD would be developed at Amingaon (Guwahati); additional developments may follow at border stations, public truck terminals, and ICDs West Bengal and North East India.

<p><b>Project Ref:</b> L3 <b>Country:</b> India (but affecting neighboring countries) <b>Sector:</b> Logistics <b>Project Type:</b> Development Survey (plus possible further assistance for project proposals defined in the survey)</p>	<p><b>PROJECT NAME:</b> <b>Improvement of the Transport and Logistics System in the Bottleneck Region (the “Chicken's Neck”) in North East India</b></p>	<p><b>PRIORITY:</b> <b>High</b></p>
<p><b>Corridor(s)</b></p>	<p>All major routes traversing North and Northeast India; Siliguri will be developed for the control of and as an information hub for traffic</p>	
<p><b>Project Description</b></p>	<p>The project will conduct research on improvement of the transport and logistics systems in the chicken's neck<sup>19</sup> area, where neighboring countries (as well as India) are looking for better efficiency for their transit cargo. Specifically, the study will entail: (i) a detailed survey of current cargo flow and assessment of the capacity of transport infrastructure, (ii) forecasting of cargo traffic by corridor and mode, (iii) preparation of detailed project proposals for the development of logistics infrastructure.<sup>20</sup> It is envisaged that the study will include about seven team members and a total of 40 person-months over 12 calendar months (and a project cost of about JPY 150 million, or USD 1.5 million equivalent). Further assistance may follow to implement the projects or measures proposed.</p>	
<p><b>Project Status</b></p>	<p>While there are have been surveys and studies examining corridors traversing this area (including the current Survey), there has not been a comprehensive strategic regional transport assessment of the area. The chicken's neck has been attracting attention, not only for connectivity between mainland India and Northeast India, but because the neighboring countries are looking to more efficiently transit the area.</p>	
<p><b>Social and Natural Environmental Impact</b></p>	<p>To provide a proper development guide for the chicken's neck area will be important to ensure well-balanced development of the area as well as connectivity for the neighboring landlocked countries.</p>	
<p><b>Economic and Financial Considerations</b></p>	<p>Improvement of the transport and logistics system in the area will reduce transport costs, both for India traffic and for traffic for neighboring countries that transit the area.</p>	
<p><b>Counterpart Agency/Agencies</b></p>	<p>Ministry for Development of North Eastern Region and/or Ministry of Road Transport and Highways</p>	
<p><b>Critical Success Factors</b></p>	<ul style="list-style-type: none"> <li>• To complete the required research as quickly as possible</li> <li>• To consider the balance of interests of the neighboring countries and areas</li> </ul>	

<sup>19</sup> চিকেন ে বকন Bengali.

<sup>20</sup> The project will also address issues related to the institutional framework, service providers, and shippers/consignees.





## Photographs (1/9)



Bangladesh – Akhaura Border Crossing Point



Bangladesh – Chittagong Port



Bangladesh – Chittagong Railway Station



Bangladesh – Kamalapur Inland Clearance Depot



Bangladesh – Road in Narayangunj (1)



Bangladesh – Road in Narayangunj (2)

## Photographs (2/9)



Bangladesh – Road N1 (Chittagong–Baraiyarhat)



Bangladesh – Tamabil Border Crossing Point



Bangladesh – Tamabil Land Customs Facility



Bangladesh – Customs Clearance at Tamabil



Bhutan – Pasakha Industrial Area



Bhutan – Regional Revenue and Customs Office,  
Phuentsholing



### Photographs (3/9)



Bhutan – Freight Forwarder's Counter  
in Phuentsholing



Bhutan – Road to Thimphu from Phuentsholing  
(1)



Bhutan – Road to Thimphu from Phuentsholing  
(2)



Bhutan – Road to Thimphu from Phuentsholing  
(3)



Bhutan – Roadside along  
Phuentsholing–Thimphu Road



Bhutan – Truck Terminal in Phuentsholing

## Photographs (4/9)



India – Integrated Check Post in Agartala, Tripura



India – AH1 from Imphal to Kohima



India – Truck Terminal in Aizawl, Mizoram



India – Chengrabandha Border Facility



India – Bus Terminal in Guwahati, Assam



India – Border Crossing to Myanmar  
in Moreh, Manipur (1)



## Photographs (5/9)



India – Border Crossing to Myanmar in Moreh (2)



India – Border Crossing to Myanmar in Moreh (3)



India – Land Customs Station in Petrapole,  
West Bengal



India – Road to Petrapole, West Bengal



India – R44 from Agartala to Joloaibari, Tripura



India – R53 from Imphal to Nungba, Manipur

## Photographs (6/9)



India – R53 from Imphal to Nungba, Manipur



India – R54 at Aizawl East, Mizoram



India – Railway in West Bengal



India – Road in Meghalaya



India – Road in Meghalaya



India – Road in Mizoram



## Photographs (7/9)



India – Road in West Bengal (1)



India – Road in West Bengal (2)



India – Road in West Bengal (3)



India – Road in West Bengal (4)



Nepal – Inland Clearance Depot at Birgunj



Nepal – Birgunj Border Post

## Photographs (8/9)



Nepal – Birgunj Customs



Nepal – Inland Clearance Depot at Birgunj



Nepal – Birgunj Border Crossing Point (1)



Nepal - Birgunj Border Crossing Point (2)



Nepal – Birgunj Border Crossing Point (3)



Nepal – Birgunj Customs Office



## Photographs (9/9)



Nepal – Dry Port Customs Office in Birgunj



Nepal – Road from Kathmandu to Hetauda



First Seminar in New Delhi (1)



First Seminar in New Delhi (2)



Final Seminar in Guwahati, Assam (1)



Final Seminar in Guwahati, Assam (2)