

# Environmental Due Diligence Report

---

September 2019

BAN: South Asia Subregional Economic  
Cooperation Dhaka–Northwest Corridor Road  
Project, Phase 2 (Tranche 2)

Prepared by the Roads and Highways Department for the People's Republic of Bangladesh and  
the Asian Development Bank.

## CURRENCY EQUIVALENTS

(as of 18 July 2019)

Currency unit	–	taka (Tk)
Tk1.00	=	\$ 0.0118
\$1.00	=	Tk84.4750

## ABBREVIATIONS

ADB	–	Asian Development Bank
CSC	–	construction supervision consultant
EARF	–	environmental assessment review framework
EIA	–	environmental impact assessment
EMP	–	environmental management plan
EMoP	–	environmental monitoring plan
IEE	–	initial environmental examination
JCTE	–	Joydeypur–Chandra–Tangail–Elenga
MFF	–	multitranches financing facility
PIC		project implementation consultant
RHD	–	Roads and Highways Department
RRTC	–	road research and training center
ROU	–	road operation unit
RoW	–	right-of-way
SASEC	–	South Asia Subregional Economic Cooperation
SPS	–	Safeguard Policy Statement

## WEIGHTS AND MEASURES

km	–	kilometer
m	–	meter

This due diligence report on environment safeguards is a document of the borrower. The views expressed herein do not necessarily represent those of ADB's Board of Directors, Management, or staff, and may be preliminary in nature.

In preparing any country program or strategy, financing any project, or by making any designation of or reference to a particular territory or geographic area in this document, the Asian Development Bank does not intend to make any judgments as to the legal or other status of any territory or area.

## CONTENTS

I.	INTRODUCTION.....	1
A.	Report Purpose and Rationale.....	1
B.	Scope of Environmental Due Diligence.....	2
C.	Background of the Projects.....	2
a.	Dhaka–Northwest International Trade Corridor (Phase 1: Joydeypur–Chandra–Tangail–Elenga) Project .....	2
b.	Dhaka–Northwest Corridor Road Project, Phase 2 – Tranche 1 .....	2
D.	Project Scope and Location .....	2
a.	The Dhaka–Northwest International Trade Corridor (Phase 1: Joydeypur–Chandra–Tangail–Elenga) Project.....	2
b.	Dhaka–Northwest Corridor Road Project, Phase 2 – Tranche 1 .....	3
E.	Implementation Progress as of April 2019 .....	5
a.	Dhaka–Northwest International Trade Corridor (Phase 1: Joydeypur–Chandra–Tangail–Elenga) Project .....	5
b.	Dhaka–Northwest Corridor Road Project, Phase 2 – Tranche 1 .....	5
F.	Environmental Categorization, Assessment, and Reporting.....	5
a.	Dhaka–Northwest International Trade Corridor (Phase 1: Joydeypur–Chandra–Tangail–Elenga) Project .....	5
b.	Dhaka–Northwest Corridor Road Project, Phase 2 – Tranche 1 .....	6
G.	Institutional Setup and Responsibilities.....	6
a.	Dhaka–Northwest International Trade Corridor (Phase 1: Joydeypur–Chandra–Tangail–Elenga) Project .....	6
b.	Dhaka–Northwest Corridor Road Project, Phase 2 – Tranche 1 .....	6
II.	COMPLIANCE WITH ENVIRONMENTAL SAFEGUARDS REQUIREMENTS AND IMPLEMENTATION.....	7
A.	Compliance with National Environmental Laws.....	7
a.	Dhaka–Northwest International Trade Corridor (Phase 1: Joydeypur–Chandra–Tangail–Elenga) Project .....	7
b.	Dhaka–Northwest Corridor Road Project, Phase 2 – Tranche 1 .....	7
B.	Compliance with Environmental Assessment and Review Framework and Safeguard Policy Statement 2009 and Environmental Management Plan.....	8
a.	Dhaka–Northwest International Trade Corridor (Phase 1: Joydeypur–Chandra–Tangail–Elenga) Project .....	8
b.	Dhaka–Northwest Corridor Road Project, Phase 2 – Tranche 1 .....	8
C.	Compliance with Loan Agreement and Framework Financing Agreement .....	9
a.	Dhaka–Northwest International Trade Corridor (Phase 1: Joydeypur–Chandra–Tangail–Elenga) Project .....	9
b.	Dhaka–Northwest Corridor Road Project, Phase 2 – Tranche 1 .....	11
III.	STATUS OF ENVIRONMENTAL MANAGEMENT PLAN IMPLEMENTATION AND MONITORING.....	14
A.	Environmental Management Plan .....	14

a.	Dhaka–Northwest International Trade Corridor (Phase 1: Joydeypur–Chandra–Tangail–Elenga) Project .....	14
b.	Dhaka–Northwest Corridor Road Project, Phase 2 – Tranche 1 .....	22
B.	Environmental Monitoring Plan .....	23
a.	Dhaka–Northwest International Trade Corridor (Phase 1: Joydeypur–Chandra–Tangail–Elenga) Project .....	23
b.	Dhaka–Northwest Corridor Road Project, Phase 2 – Tranche 1 .....	23
C.	Site Inspections, Audits, and Complaints .....	23
a.	Dhaka–Northwest International Trade Corridor (Phase 1: Joydeypur–Chandra–Tangail–Elenga) Project .....	23
b.	Dhaka–Northwest Corridor Road Project, Phase 2 – Tranche 1 .....	23
D.	Non-compliance Notices .....	23
a.	Dhaka–Northwest International Trade Corridor (Phase 1: Joydeypur–Chandra–Tangail–Elenga) Project .....	23
b.	Dhaka–Northwest Corridor Road Project, Phase 2 – Tranche 1 .....	23
IV.	FINDINGS AND RECOMMENDATIONS .....	24
A.	Compliance to Environmental Safeguard Requirements .....	24
a.	Dhaka–Northwest International Trade Corridor (Phase 1: Joydeypur–Chandra–Tangail–Elenga) Project .....	24
b.	Dhaka–Northwest Corridor Road Project, Phase 2 – Tranche 1 .....	24
B.	Compliance to Environmental Management Plan .....	24
a.	Dhaka–Northwest International Trade Corridor (Phase 1: Joydeypur–Chandra–Tangail–Elenga) Project .....	24
b.	Dhaka–Northwest Corridor Road Project, Phase 2 – Tranche 1 .....	24
C.	Compliance to Environmental Monitoring Plan .....	25
a.	Dhaka–Northwest International Trade Corridor (Phase 1: Joydeypur–Chandra–Tangail–Elenga) Project .....	25
b.	Dhaka–Northwest Corridor Road Project, Phase 2 – Tranche 1 .....	25
D.	Recommendations .....	25

## LIST OF TABLES

Table 1:	Compliance with National Laws .....	7
Table 2:	Compliance with National Laws .....	7
Table 3:	Detailed Environmental Management Plans of Subproject under SASEC Phase 1 .....	8
Table 4:	Joydeypur–Chandra–Tangail–Elenga Road Project Compliance .....	9
Table 5:	Compliance of Elenga–Hatikamrul–Rangpur Road with FFA and Loan Agreement .....	11
Table 6:	Environmental Management Plan Compliance Status of Contractors .....	14
Table 7:	Summary of Compliance of Joydeypur–Chandra–Tangail–Elenga Contractors with Environmental Monitoring Plan .....	23

## I. INTRODUCTION

### A. Report Purpose and Rationale

1. This environmental due diligence (EDD) is prepared for the processing of second tranche (Tranche 2) of South Asia Subregional Economic Cooperation (SASEC) Dhaka–Northwest Corridor Road Project, Phase 2. The investment is a multitranche financing facility (MFF) with three outputs: (i) Output 1: upgrading of Dhaka–Northwest international trade corridor (Phase 2: Elenga–Hatikamrul–Rangpur); (ii) Output 2: enhancement of institutional capacity of Roads and Highways Department (RHD) in road operation and management; and (iii) Output 3: additional financing of cost overrun of the SASEC Road Connectivity Project (Phase 1: Joydeypur–Chandra–Tangail–Elenga (JCTE) Road).<sup>1</sup>

2. It is estimated that the investment program will cost \$1,600 million, including \$1,420 million for the improvement of Elenga–Hatikamrul–Rangpur section (190 kilometers (km)), \$30 million for institutional enhancement of RHD, and \$135.6 million to finance the cost overrun of SASEC Road Connectivity Project. The cost overrun resulted from higher bid estimates compared to engineer's estimates, price escalation, and design adjustments to address premature deterioration on existing pavement and congested junctions.

3. Time-slice financing MFF is being used for the SASEC Dhaka–Northwest Corridor Road Project, Phase 2. Tranche 2 will finance below works and services.

- (i) **Output 1: Elenga–Hatikamrul–Rangpur Road upgraded.** Tranche 2 will finance the second slice of the expenditures in relation to works for upgrading of the Elenga–Hatikamrul–Rangpur Road (190 km) of the Dhaka–Northwest international trade corridor from 2-lane carriageways to 4-lane carriageways and 2 slow-moving vehicular traffic (SMVT) lanes, and finance the first slice of the expenditures in relation to works for construction of Hatikamrul Interchange.
- (ii) **Output 2: RHD's Institutional capacity in road operation and management enhanced.** Tranche 2 will finance the first slice of the expenditures in relation to works for (a) construction of road research and training center (RRTC) to enhance institutional capacity of RHD and (b) establishment of road operation units (ROU) for road operation and management, and finance consulting services for traffic data collection and transport model development to update the Road Master Plan in connection with the associated technical assistance (TA).

4. Para 56. of Safeguard Policy Statement 2009 states that for projects proposed for additional financing, the Asian Development Bank (ADB) will conduct safeguard reviews, including the borrower's safeguard documents. Due diligence and review will also comprise field visits as well as desk reviews. This EDD will cover the assessment of Loan 2949-BAN: SASEC Road Connectivity Project and MFF 0103-BAN: SASEC Dhaka–Northwest Corridor Road Project, Phase 2.

---

<sup>1</sup> ADB. 2012. Report and Recommendation of the President to the Board of Directors: Proposed Loan and Administration of Loan and Technical Assistance Grant to the People's Republic of Bangladesh for South Asia Subregional Economic Cooperation Road Connectivity Project. Manila (Loan 2949-BAN).

## **B. Scope of Environmental Due Diligence**

5. This EDD report assesses the environmental safeguards compliance of both SASEC Road Connectivity Project (Phase 1: Joydeypur–Chandra–Tangail–Elenga Road) and SASEC Dhaka–Northwest Corridor Road Project, Phase 2 (Elenga–Hatikamrul–Rangpur Road) vis-a-vis requirements of Safeguard Policy Statement 2009, the initial environmental examinations (IEEs) and environmental management plans (EMPs), and the Government of Bangladesh’s environmental policies, laws and regulations.

## **C. Background of the Projects**

### **a. SASEC Road Connectivity Project (Phase 1: Joydeypur–Chandra–Tangail–Elenga Road)**

6. The Loan Agreement between the Government of Bangladesh and ADB for the SASEC Road Connectivity Project was signed on 14 November 2013 with a loan of \$198 million from ADB’s ordinary capital resources. The project is also cofinanced by the OPEC Fund for International Development and Abu Dhabi Fund for Development with a loan of \$30 million each. ADB has also provided a \$1.5 million technical assistance grant to support RHD’s institutional development initiatives.

7. The Government is financing about \$86.7 million equivalent or about 25% of the total project cost, including taxes and duties, land acquisition and resettlement and other miscellaneous costs.

8. An additional financing of \$135.6 million to finance the cost overrun of SASEC Road Connectivity Project is being requested arising from higher bid estimates compared to engineer’s estimates, price escalation and design adjustments to address premature deterioration on existing pavement and congested junctions.

### **b. SASEC Dhaka–Northwest Corridor Road Project, Phase 2 – Tranche 1**

9. Based on the framework financing agreement (FFA) dated 12 July 2017 between the Government of Bangladesh and ADB, ADB has agreed to provide an MFF to finance the SASEC Dhaka–Northwest Corridor Project, Phase 2.

10. The first tranche of the MFF comprises a regular ordinary capital resources (OCR) loan of \$250 million and a concessional OCR loan of \$50 million. The loan agreements were signed between the Government of Bangladesh and ADB on 22 November 2017. The first tranche covers (i) time-slice financing for the works and goods contract packages and for consulting services; and (ii) additional financing for the phase 1 cost overrun and for stronger road safety and gender-responsive features.

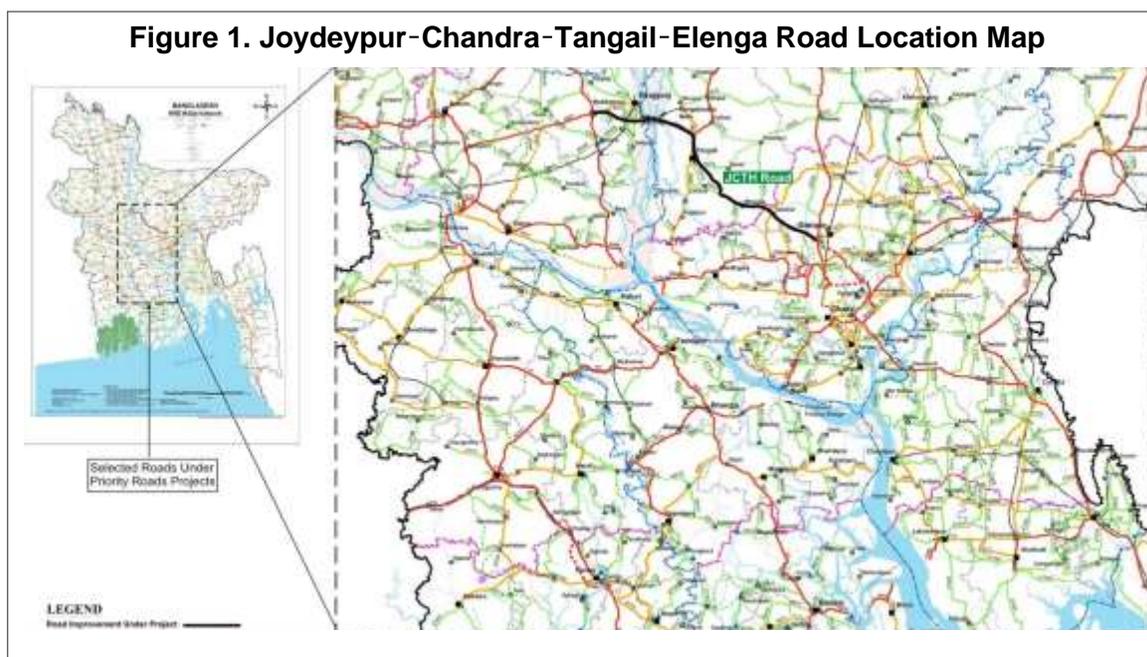
## **D. Project Scope and Location**

### **a. SASEC Road Connectivity Project (Phase 1: Joydeypur–Chandra–Tangail–Elenga Road)**

11. The SASEC Road Connectivity Project (Phase 1: Joydeypur–Chandra–Tangail–Elenga Road) consists of upgrading of 70 km of Joydeypur–Chandra–Tangail–Elenga Road, which is part

of Asian Highway No. 2 and SHC Nos. 4 and 8, to a four-lane highway with safety features including separate lane for slow moving traffic and construction of flyovers at the busiest junctions.

12. The JCTE road is located north of Dhaka City, with chainage starting at at Vogra Bazaar (N 23°58'39" and E 90°22'51") at an intersection 2.7 km south of Joydeypur roundabout where the N3 Dhaka–Mymensingh road meets the N105 Dhaka Eastern Bypass, joining the N4 Joydeypur–Chandra–Tangail–Elenga road at project Chainage 2.900 at a point 2.38 km west of Joydeypur (N 23°59'22" and E 90°21'30"). The route then follows the N4, including the Kaliakor, Mirzapur and Tangail bypasses (south end: N 24°14'33" and E 89°56'27", north end: N 24°16'03" and E 89°56'15") to Elenga (N 24°20'22" and E 89°55'28"). The total length is 69 km. Figure 1 shows the alignment of the JCTE Road.



#### **b. SASEC Dhaka–Northwest Corridor Road Project, Phase 2 – Tranche 1**

13. Although Dhaka–Northwest Corridor Road Project, Phase 2 consists of three outputs (para. 1), only the first output will be described, since (i) output 2 does not require any environmental assessment per ADB Safeguard Policy Statement (SPS) 2009; and (ii) due diligence for output 3 is already incorporated here in the report.<sup>2</sup>

14. The Elenga–Hatikamrul Road, located north of Tangail City, will start at Elenga Junction (24°20'22" N and 89°55'28" E) near the intersection of N4 and N405. The project road will terminate at chainage 83+081 because of the Bangabandhu Bridge and will start again at chainage 90+700 at the West side of this bridge. The road will end at Hatikamrul (24°25'8.97"N and 89°33'6.97"E) of Sirajganj district. The total length is 41.7 km.

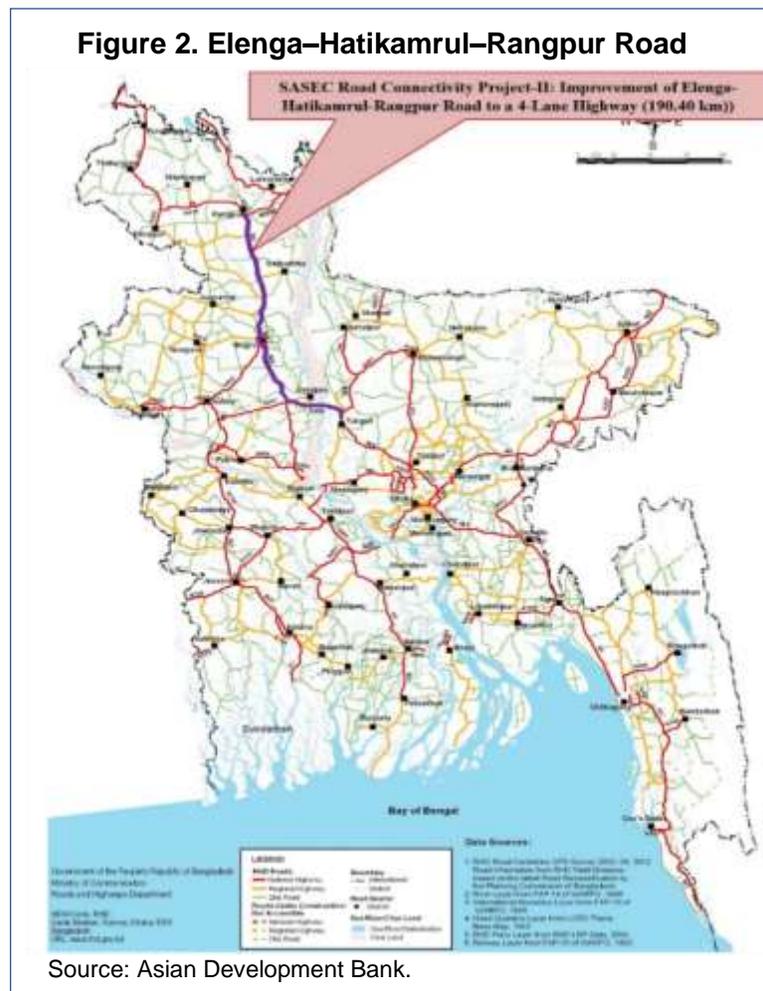
15. The Hatikamrul–Rangpur Road, located north of Dhaka City will start at Hatikamrul roundabout (24°25'8.89"N and 89°33'6.31"E) at an intersection where the three major national

<sup>2</sup> Dhaka–Northwest International Trade Corridor (Phase 1: Joydeypur–Chandra–Tangail–Elenga) Project.

highways (N5, N405 and N507) meet. The project road ends at Rangpur (25°42'59.88"N and 89°15'45.80"E). The total length is 156.9 km.

16. Elenga–Hatikamrul road is a standard two-lane highway (two 3.65 meters (m) lanes, paved shoulders each 1.5 m and verges each 1.0 m). The road condition is varying in different sections. Pavement crack is one the main problems for this road. There are several sub-standard horizontal curves. Road passes through some commercial areas at Elenga, Kodda Moor and Hatikamrul.

17. The Hatikamrul–Rangpur road is a standard two-lane highway (two 3.65m lanes, paved shoulders each 1.5 m and verges each 1.0 m). The road condition is varying in different section. Pavement crack is one the main problems for this road. There are several substandard horizontal curves. There are areas of distressed pavement. Road passes through various heavily congested areas at Chandikona, Sherpur, Bogra Sadar, Shibganj, Gabindaganj, Palashbari, Shathibari, Mithapukur, Pirganj, and Rangpur Sadar.



## **E. Implementation Progress as of April 2019**

### **a. SASEC Road Connectivity Project (Phase 1: Joydeypur–Chandra–Tangail–Elenga Road)**

18. The civil works for four road packages commenced on January 2016. Land acquisition and resettlement activities are also going on at project site. The utility lines are also in the process of shifting. The four contract packages that have started construction works include:

- (i) Lot No. WP-01, Part-I: Improvement of Road from Vogra Bazar Intersection to Kaliakoir Bypass Intersection (18.9 km) from 2-lane to 4-lane including structures.
- (ii) Lot No. WP-02, Part-I: Improvement of Road from Kaliakoir Bypass Intersection to Dulla Mari Road (18.00 km) from 2-lane to 4-lane including structures.
- (iii) Lot No. WP-03, Part-I: Improvement of Road from Dulla Mari Road to Tangail (22.4 km) from 2-lane to 4-lane including structures, and
- (iv) Lot No. WP-04, Part-I. Improvement of Road from Tangail to Elenga Intersection (10.00 km) from 2-lane to 4-lane including structures.

19. All the contractors<sup>3</sup> have submitted their monthly Compliance Monitoring Report (latest was June 2018) after their engagement of Environmental Specialist, Environmental Quality Management Services Consulting Limited.

### **b. SASEC Dhaka–Northwest Corridor Road Project, Phase 2 – Tranche 1**

20. Under the project, a team of Consultants was mobilized on 27 January 2019 and started working as project implementation consultants (PICs) to provide professional and expert support in design review of project roads, construction supervision, design of Hatikamrul Interchange, establishment of road operation unit (ROU), and road research and training center (RRTC).

21. Four contracts for the WP06, WP07, WP08, and WP 09 packages of the SASEC-II are signed between RHD under Ministry of Road Transport and Bridges, and the respective civil works contractors. Civil works have not started as full pledged. Only one contractor was deployed for WP6. The overall physical progress of the project is in minimum, since all contractors of eight work packages are yet to be mobilized in the field.

## **F. Environmental Categorization, Assessment, and Reporting**

### **a. SASEC Road Connectivity Project (Phase 1: Joydeypur–Chandra–Tangail–Elenga Road)**

22. Four initial IEEs were approved in July 2012 for the JCTE Road. The subproject was categorized as *B* for environment safeguards based on the ADB SPS 2009. The environmental categorization for the additional financing of the cost overrun of the SASEC Road Connectivity Project (Phase 1: Joydeypur–Chandra–Tangail–Elenga (JCTE) Road), encompassing the subproject, is retained as *B* since no significant impacts are envisioned arising from the additional funding. The IEE for the additional civil works for the construction of slow-moving traffic lane along JCTE Road has been prepared for ADB website disclosure.

---

<sup>3</sup> WP-01: KYERYONG – SPECTRA Joint Venture; WP-02: AML-HCM JV; WP-03: SAMWHAN-MIR AKTER Joint Venture; WP-04: GDCL-DIENCO JV.

23. A total of seven semi-annual environment monitoring reports (November 2015, June and December 2016, June and December 2017, and June and December 2018) have been prepared for the SASEC Road Connectivity Project and disclosed on the ADB website in compliance to the EMP indicated in the IEE, and the loan agreement.

**b. SASEC Dhaka–Northwest Corridor Road Project, Phase 2 – Tranche 1**

24. The environmental assessment review framework (EARF) has been prepared and disclosed in ADB website on May 2017 to meet the requirements of ADB SPS for MFF. The framework serves as guide on procedures for complying with environment safeguard requirements according to the ADB SPS and environmental policies of Bangladesh for potential new components which may be added to the component as part of subsequent tranches.

25. Two IEEs were approved on May 2017 for Elenga–Hatikamrul Road Expansion, and Hatikamrul–Rangpur Road Expansion. The scope of works includes detailed design, earthworks, pavement construction, construction of new bridges and rehabilitation of old bridges, drainage, structures, link/roadside improvements, and installation of road furniture such as signs and safety barriers. A total of 26 bridges and 161 culverts will be rehabilitated and/or reconstructed. In addition, construction of 3 flyovers, 39 underpass, 68 bus bays, 11 pedestrian overpasses, etc. will be constructed. The project has been categorized as *B* based on ADB SPS. The EMPs specifying mitigation measures to be adhered to during implementation of the projects have been prepared. According to Bangladesh Environmental Conservation Rules (ECR) Schedule 1, the project is red category because these involve construction, reconstruction, and extension of roads and bridges.

26. The IEE for Hatikamrul Interchange has been prepared also for disclosure in ADB website. Enhancement of institutional capacity of RHD in road operation and management has negligible environmental impacts.

27. One semi-annual environmental monitoring period covering July to December 2018, was submitted in January 2019. The second report, covering January to June 2019, is expected to be submitted in July 2019.

**G. Institutional Setup and Responsibilities**

**a. SASEC Road Connectivity Project (Phase 1: Joydeypur–Chandra–Tangail–Elenga Road)**

28. Construction supervision consultant (CSC) is primarily responsible for supervision of monitoring of the implementation of the EMP. The RHD will be supported by a management consultant to advise and assist in quality and capacity enhancement and independent quality monitoring. Contractor will be responsible for implementation of EMP during work activities stage.

**b. SASEC Dhaka–Northwest Corridor Road Project, Phase 2 – Tranche 1**

29. Contractor is responsible for implementation of EMP during works and CSC is primarily responsible for supervision of monitoring of the implementation of the EMP. The RHD will be supported by the Engineer for advising and assisting RHD in quality and capacity enhancement and independent quality monitoring. Contractor will be responsible for implementation of EMP

during work activities stage. Relevant departments responsible for implementation and supervision of proposed mitigation and monitoring measures are given in the EMP.

## II. COMPLIANCE WITH ENVIRONMENTAL SAFEGUARDS REQUIREMENTS AND IMPLEMENTATION

### A. Compliance with National Environmental Laws

#### a. SASEC Road Connectivity Project (Phase 1: Joydeypur–Chandra–Tangail–Elenga Road)

30. The environmental legislation of the Government of Bangladesh emphasizes reducing the negative impacts of infrastructure development projects and enhancement of the positive impacts. This conforms to the National Environmental Policy 1992 that was enacted based on the Agenda 21 of Rio Conference and subsequent enactments of the Bangladesh Environmental Conservation Act (BECA) 1995 and Bangladesh Environmental Conservation Rules (BECR) 1997. Since the project is a national road, which is in the Red List of Environmental Conservation Rules (1997), RHD is required to secure an environmental clearance (valid for 1 year) from the Department of Environment.

**Table 1: Compliance with National Laws**

<b>Environment Policy/Rule</b>	<b>Compliance Requirement</b>	<b>Relevance to JCTE Road</b>	<b>JCTE Road Performance</b>
Bangladesh Environmental Conservation Act (BECA) 1995 and Bangladesh Environmental Conservation Rules (BECR) 1997	Requires all construction/reconstruction/expansion of road projects (regional, national and international) to submit an environmental impact assessment (EIA) with an environmental management plan (EMP) to obtain an Environmental Clearance (EC)	Joydeypur–Chandra–Tangail–Elenga (JCTE) Road is required to secure and maintain an Environmental Clearance.	The environmental clearance (valid for 1 year) for the project was obtained from the Department of Environment in July 2015. Subsequent renewal of the environmental clearance certificate will be obtained annually.

#### b. SASEC Dhaka–Northwest Corridor Road Project, Phase 2 – Tranche 1

31. Since the commencement of all contractor's field activities under eight work packages have not started yet, the contractor is committed to comply with all national environmental laws and regulations.

**Table 2: Compliance with National Laws**

<b>Environment Policy/Rule</b>	<b>Compliance Requirement</b>	<b>Relevance to Dhaka–Northwest Corridor Road</b>	<b>Dhaka–Northwest Corridor Road Performance</b>
Bangladesh Environmental Conservation Act (BECA) 1995 and Bangladesh Environmental Conservation	Requires all construction/reconstruction/expansion of road projects (regional, national and international) to submit an environmental impact assessment (EIA) with EMP	Dhaka–Northwest Corridor Road is required to secure and maintain an Environmental Clearance	EIA including EMP was submitted to Department of Environment in 2014. Environmental Clearance for the project was obtained from Department of Environment on 15 July 2014 whereas, the

Rules (BECR) 1997	to obtain an Environmental Clearance (EC)		construction commenced in January 2018.
-------------------	---	--	---

**B. Compliance with Environmental Assessment and Review Framework and Safeguard Policy Statement 2009 and Environmental Management Plan**

**a. SASEC Road Connectivity Project (Phase 1: Joydeypur–Chandra–Tangail–Elenga Road)**

32. The project has been classified as environmental category *B*. Four IEEs for (i) Joydeypur–Chandra–Tangail–Elenga Road, (ii) RHD office building, (iii) Benapole Land Port, and (iv) Burimari Land Port were disclosed in July 2012.

33. Additional financing from the MFF is currently complying with ADB Safeguard Policy Statement Policy 2009 in terms of categorization; preparation, submission and disclosure of safeguard requirements; implementation of EMP and environmental monitoring plan (EMoP); and submission and disclosure of safeguard reports with ADB.

34. An EMP was prepared for the subproject under Dhaka–Northwest International Trade Corridor (Phase 1: Joydeypur–Chandra–Tangail–Elenga) Project. The link to the EMP is detailed in Table 3.

**Table 3: Detailed Environmental Management Plans of Subproject under SASEC Phase 1**

Subproject	Detailed Environmental Management Plan	Page Nos.
Joydeypur–Chandra–Tangail–Elenga (JCTE) Road	<a href="https://www.adb.org/sites/default/files/project-document/73520/40540-014-ban-iee-04.pdf">https://www.adb.org/sites/default/files/project-document/73520/40540-014-ban-iee-04.pdf</a>	Appendix 8, pages 142–153

**b. SASEC Dhaka–Northwest Corridor Road Project, Phase 2 – Tranche 1**

35. The EARF prepared for the facility was prepared and uploaded in ADB website on May 2017. The EARF consists of assessment of legal framework and institutional capacity of executing and implementing agencies, the framework for assessment of succeeding tranches, guidelines on consultation, information disclosure and mechanism for grievance redress, institutional arrangement, and monitoring guidelines. Tranche 1, which consists of (i) improvement of the next section of Dhaka–Northwest international trade corridor, from Elenga through Hatikamrul to Rangpur (total length of 190 km); (ii) additional funding for SASEC Phase 1 (Joydeypur–Chandra–Tangail–Elenga); and (iii) enhancement of institutional capacity of RHD in road operation and management, has been categorized as *B* for environment since the scope only includes upgrading of an existing road that does not pass through any environmentally sensitive areas. There are no protected areas and no ecologically sensitive sites that will be traversed or near the proposed alignment for the physical components of the investment. Environmental impacts of the project, which consists of expansion from two lanes to four lanes, and the construction of separate service vehicles for slow moving vehicles on each side of the highway, are mainly related to earthworks that can be easily mitigated with engineering measures.

36. The Dhaka–Northwest Corridor Road Project, Phase 2 – Tranche 1, is currently complying with ADB Safeguard Policy Statement Policy 2009 in terms of categorization; preparation, submission and disclosure of safeguard requirements; implementation of EMP and EMoP; and submission and disclosure of safeguard reports with ADB. Two IEEs were prepared – Elenga–

Hatikamrul Road and Hatikamrul–Rangpur Road.<sup>4</sup> For tranche 2, an IEE will be prepared for Hatikamrul interchange. The IEEs for the establishment of RRTC and ROU will be prepared by the PIC (supervision consultant) after the detailed designs are prepared.

37. The EMPs of Elenga–Hatikamrul Road and Hatikamrul–Rangpur Road are included in the IEEs of the two roads, specifically in pages 124–145, and 134–178, respectively.

### C. Compliance with Loan Agreement and Framework Financing Agreement

#### a. SASEC Road Connectivity Project (Phase 1: Joydeypur–Chandra–Tangail–Elenga Road)

38. Schedule 5 of the Loan Agreement specifies environmental conditions that the Borrower must comply. The project’s compliance with the environmental safeguard provisions are indicated in Table 4.

**Table 4: Joydeypur–Chandra–Tangail–Elenga Road Project Compliance**

Para. No.	Loan Condition	Project Compliance
4	The Borrower shall (a) ensure, and shall cause the Project Executing Agencies to ensure, that the preparation, design, construction, implementation, operation and decommissioning of the Project and all Project facilities comply with (i) all applicable laws and regulations of the Borrower relating to environment, health, and safety; (ii) the Environmental Safeguards; and (iii) all measures and requirements set forth in the initial environmental examinations (IEEs) and environment management plans (EMPs); and (iv) any corrective or preventative actions set forth in a Safeguards Monitoring Report; and (b) ensure, or cause the Project Executing Agencies to ensure, that Works do not commence until and unless environmental clearance, satisfactory in form and content to ADB, in respect of the relevant site has been received from the Department of Environment.	<b>Being complied.</b>  Environmental safeguards requirements, as stipulated in ADB Safeguard Policy Statement (SPS) 2009, is being complied. Four IEEs were prepared and approved by ADB in July 2012. Requirements of the IEE, the EMP and the corrective or preventative actions indicated in Safeguards Monitoring Report (for the Joydeypur–Chandra–Tangail–Elenga (JCTE) Road) is being followed.
8	The Borrower shall make available, or cause the Project Executing Agencies to make available, necessary budgetary and human resources to fully implement the EMPs.	<b>Being complied.</b> Adequate budgetary and human resources are provided to fully implement the EMPs. Contractor is responsible for implementation of EMP during works and Construction Supervision Consultant (CSC) is primarily responsible for supervision of monitoring of the implementation of the EMP. The Roads and Highways Department (RHD) is supported by a management consultant to advise

<sup>4</sup> Two IEEs prepared are accessible through the links: <https://www.adb.org/sites/default/files/project-documents/40540/40540-016--en.pdf> for Elenga–Hatikamrul Road, and [https://www.adb.org/sites/default/files/project-documents/40540/40540-016--en\\_0.pdf](https://www.adb.org/sites/default/files/project-documents/40540/40540-016--en_0.pdf) for Hatikamrul–Rangpur Road.

Para. No.	Loan Condition	Project Compliance
		and assist in quality and capacity enhancement and independent quality monitoring.
9	<p>The Borrower shall ensure, or cause the Project Executing Agencies to ensure, that all bidding documents and contracts for Works contain provisions that require contractors to:</p> <p>(a) comply with the measures and requirements relevant to the contractor set forth in the IEE and the EMP (to the extent they concern impacts on affected people during construction), and any corrective or preventative actions set out in a Safeguards Monitoring Report;</p> <p>(b) make available a budget for all environmental measures;</p> <p>(c) provide the Borrower with a written notice of any unanticipated environmental, resettlement or indigenous peoples risks or impacts that arise during construction, implementation or operation of the Project that were not considered in the IEE, the EMP;</p> <p>(d) adequately record the condition of roads, agricultural land and other infrastructure prior to starting to transport materials and construction; and</p> <p>(e) reinstate pathways, other local infrastructure, and agricultural land to at least their pre-Project condition upon the completion of construction.</p>	<p>(a) <b>Being complied.</b> Contracts for three road improvement projects were signed on 15 September 2015, while the 4<sup>th</sup> contract was signed on 1 March 2016. All four contractors are complying with the measures and requirements set in IEE and EMP.</p> <p>(b) <b>Being complied.</b> Budget is being provided for environmental measures.</p> <p>(c) <b>Being complied.</b> Unanticipated environmental impacts were updated in submitted environmental monitoring reports.</p> <p>(d) <b>Being complied.</b></p> <p>(e) <b>Not yet applicable.</b></p>
10	<p>The Borrower shall cause the Project Executing Agencies to do the following:</p> <p>(a) submit annual environmental monitoring reports in accordance with the requirements of the ADB SPS for category B projects, and semiannual Safeguards Monitoring Reports in respect of the social impacts of the Project, to ADB and disclose relevant information from such reports to affected persons promptly upon submission;</p> <p>(b) if any unanticipated environmental and/or social risks and impacts arise during constructions, implementation or operation of the Project that were not considered in the IEEs and the EMPs, promptly inform ADB of the occurrence of such risks or impacts, with a detailed description of the event and proposed corrective action plan; and</p> <p>(c) report any actual or potential breach of compliance with the measures and requirements set forth in the EMPs promptly after becoming aware of the breach.</p>	<p>(a) <b>Being complied.</b> Safeguards Monitoring Reports were submitted semi-annually since November 2015. The latest submission was December 2018. All the semi-annual environmental monitoring reports were disclosed in ADB website.</p> <p>(b) <b>Being complied</b> Unanticipated environmental impacts are being updated in the submitted environmental monitoring reports.</p> <p>(c) <b>Being complied.</b> Results of environmental monitoring plan (EMoP) are reported to ADB.</p>
13	<p>The Borrower shall ensure, or cause the Project Executing Agencies to ensure, that no proceeds of the Loan are used to finance any activity included in the list of prohibited investment activities provided in Appendix 5 of the ADB SPS.</p>	<b>Being complied.</b>

## b. SASEC Dhaka–Northwest Corridor Road Project, Phase 2 – Tranche 1

39. Schedule 6 of the Framework Financing Agreement (FFA) specifies the environmental conditions that the Borrower must comply. Of the three outputs,<sup>5</sup> only the first tranche of Phase 2 (Elenga–Hatikamrul–Rangpur Road) will be assessed for compliance with the FFA and loan agreement. Output 3 is assessed in Section II (Compliance with Environmental Safeguards Requirements and Implementation), Section C, subsection a. The environmental impacts of Output 2 (establishment of RRTC and ROU) have not been assessed yet since the detailed designs have not been prepared yet.

**Table 5: Compliance of Elenga–Hatikamrul–Rangpur Road with FFA and Loan Agreement**

Section	Condition	Project Compliance
<b>Framework Financing Agreement of Phase 2</b>		
Schedule 6, Safeguards, para. 10	The Borrower shall ensure or cause RHD to ensure that the preparation, design, construction, implementation, operation and decommissioning of the projects and all project facilities under the Investment Program comply with (a) all applicable laws and regulations of Bangladesh including relating to environment, health, and safety; (b) the environmental safeguards as set out in ADB's Safeguard Policy Statement (SPS); (c) the environmental assessment and review framework; and (d) all measures and requirements set forth in the relevant initial environmental examination (IEE) and environmental management plan (EMP), and any corrective or preventative actions with respect to environment set forth in a safeguards monitoring report.	<p><b>Being complied.</b> Environmental safeguards requirements, as stipulated in SPS 2009, is being complied.</p> <p>(a) The project has been categorized as Red according to Bangladesh Environmental Conservation Rule 1997. The EIA including EMP was submitted to Department of Environment in 2014. Environmental Clearance for the project was obtained from Department of Environment on 15 July 2014 whereas, the construction commenced in January 2018</p> <p>(b) Two IEEs – Elenga–Hatikamrul Road and Hatikamrul–Rangpur Road have been prepared and disclosed in the ADB website on May 2017</p> <p>(c) the environmental assessment and review framework are being complied</p> <p>(d) <b>For compliance.</b> As of 2018 December, Semi-annual Environmental Monitoring Report, the project is compliant with most of the measures and requirements set in the Safeguards Monitoring Report. All mobilized contractors though have yet to appoint environment, health and safety experts. Most of</p>

<sup>5</sup> (i) Dhaka–Northwest international trade corridor (phase 2: Elenga–Hatikamrul–Rangpur) upgraded, (ii) institutional capacity of RHD in road operation and management enhanced, and (iii) enhanced road safety and gender-responsive features and cost overrun for Dhaka–Northwest international trade corridor (phase 1: Joydeypur–Chandra–Tangail–Elenga) financed.

Section	Condition	Project Compliance
		the contractors have submitted their site specific EMPs.
Schedule 6, Safeguards, para. 11	Bangladesh shall ensure, or cause RHD to ensure, that works do not commence until and unless environmental clearance, satisfactory in form and content to ADB, in respect of the relevant site has been received from the Department of Environment.	<b>Being complied.</b> Adequate budgetary and human resources are provided to fully implement the EMPs. Contractor is responsible for implementation of EMP during works and Construction Supervision Consultant (CSC) is primarily responsible for supervision of monitoring of the implementation of the EMP. RHD is supported by a management consultant to advise and assist in quality and capacity enhancement and independent quality monitoring.
<b>Loan Agreement of Phase 2, Tranche 1</b>		
Schedule 5, Safeguards, Environment, para. 7	The Borrower shall cause RHD to ensure that the preparation, design, construction, implementation, operation and decommissioning of the Project, and all Project facilities comply with (a) all applicable laws and regulations of the Borrower relating to environment, health, and safety; (b) the Environmental Safeguards; (c) the environmental assessment review framework (EARF); and (d) all measures and requirements set forth in a Safeguards Monitoring Report.	Please see compliance of the project in the FFA (Schedule 6, Safeguards, para. 10) above.
Schedule 5, Safeguards, Environment, para. 8	The Borrower shall ensure, or cause RHD to ensure, that Works do not commence until and unless environmental clearance, satisfactory in form and content to ADB, in respect of the relevant site has been received from the Department of Environment	<b>Being complied.</b> Environmental clearance for the project was obtained from Department of Environment on 15 July 2014.
Schedule 5, Safeguards, Human and Financial Resources to Implement Safeguards Requirements, para. 11	The Borrower shall ensure, or cause RHD to ensure, that all necessary budgetary and human resources to fully implement the EMP are made available.	<b>Being complied.</b> Necessary budgetary provision has been made in the Bill of Quantities of the civil work contract for environmental management by the contractor.
Schedule 5, Safeguards, Safeguards – Related Provisions in Bidding Documents and Works Contracts, para. 13	The Borrower shall ensure, or cause RHD to ensure, that all bidding documents and contracts for Works contain provisions that require contractors to: (a) Comply with the measures and requirements relevant to the contractor set forth in the IEE and the	(a) <b>Being complied.</b> EMP was incorporated in the bidding document and made part of the contract agreement. (b) <b>Being complied.</b> Necessary budgetary provision has been made in the Bill of Quantities of the civil work

Section	Condition	Project Compliance
	<p>EMP (to the extent they concern impacts on affected people during construction), and any corrective or preventative actions set out in a Safeguards Monitoring Report;</p> <p>(b) Make available a budget for all such environmental and social measures;</p> <p>(c) Provide ADB with a written notice of any unanticipated environmental risks or impacts that arise during construction, implementation or operation of the Project that were not considered in the IEE and the EMP;</p> <p>(d) Adequately record the condition of roads, agricultural land and other infrastructure prior to starting to transport materials and construction; and</p> <p>(e) Fully reinstate pathways, other local infrastructure and agricultural land to at least their pre-project condition upon the completion of construction.</p>	<p>contract for environmental management by the contractor.</p> <p>(c) Not yet applicable</p> <p>(d) Not indicated in the Semi-annual Environmental Monitoring Report (December 2018)</p> <p>(e) Not yet applicable</p>
<p>Schedule 5, Safeguards, Safeguards – Monitoring and Reporting, para.14</p>	<p>The Borrower shall do, or cause RHD to ensure the following:</p> <p>(a) Submit Safeguards Monitoring Reports annually for Environmental Safeguards to ADB and disclose relevant information from such reports to affected persons promptly upon submission;</p> <p>(b) If any unanticipated environmental risks and impacts arise during construction, implementation or operation of the Project that were not considered in the IEE and the EMP, promptly inform ADB of the occurrence of such risks or impacts, with detailed description of the event and proposed corrective action plan; and</p> <p>(c) Report any actual or potential breach of compliance with the measures and requirements set forth in the EMP promptly after becoming aware of the breach.</p>	<p><b>Being complied.</b></p> <p>(a) <b>Being complied.</b> The first semi-annual environmental monitoring report was submitted in December 2018. The next report will be submitted in July 2019.</p> <p>(b) Not yet applicable.</p> <p>(c) Not yet applicable</p>
<p>Schedule 5, Prohibited List of Investments, para. 15</p>	<p>The Borrower shall cause RD to ensure that no proceeds of the Loan under the Project are used to finance any activity included in the list of prohibited investment activities provided in Appendix 5 of the SPS.</p>	<p><b>Being complied.</b></p>

### III. STATUS OF ENVIRONMENTAL MANAGEMENT PLAN IMPLEMENTATION AND MONITORING

#### A. Environmental Management Plan

##### a. SASEC Road Connectivity Project (Phase 1: Joydeypur–Chandra–Tangail–Elenga Road)

40. Except for JCTE Road, there are no environmental monitoring reports submitted and disclosed in the ADB website yet to determine EMP compliance.<sup>6</sup> The EMP compliance status for JCTE Road as of December 2018 is indicated in Table 6.

**Table 6: Environmental Management Plan Compliance Status of Contractors<sup>7</sup>**

Project Activity	Mitigating Measures	Contractor's Compliance				Overall Compliance Status
		1	2	3	4	
<b>Design Stage</b>						
Extraction of river sands	Permits/NOC from relevant authority such as BIWTA	Y	Y	Y	Y	Complied. Environmental Clearance was issued July 2015
Transportation of construction materials	Construction materials should be covered properly. Overload should be avoided	ND	ND	ND	ND	No data if this was done.
Climate change	Consider climate change study output for design of alignment and bridge height.	Y	Y	Y	Y	Complied. This is an ADB requirement.
<b>Construction Stage</b>						
1. Land use						
Land use change and Loss of productive/topsoil	All efforts shall be made in finalization of alignment to reduce productive land requirement Agricultural areas not to be used as borrow areas.	ND	ND	ND	ND	No data nor statement from monitoring reports about the mitigation measures implemented.
Land use change due to borrowing of earth	Land acquisition for borrow areas to be minimized. River sand shall be used for embankment. Soil should be used for top layer. Preference shall be given to borrow earth from right-of-way itself wherever feasible. Borrow pits shall be rehabilitated/ used for fishing and other community preferred activity.	ND	ND	ND	ND	No data nor statement from monitoring reports about the mitigation measures implemented.

<sup>6</sup> Details of the monitoring results is accessible through the link: [https://www.adb.org/sites/default/files/project-documents/40540/40540-014-emr-en\\_2.pdf](https://www.adb.org/sites/default/files/project-documents/40540/40540-014-emr-en_2.pdf).

<sup>7</sup> Contractor numbers correspond to the following: 1 - Kyeryong Spectra JV; 2 - AML–HCM JV; 3 - Samwhan – Mir Aktaer JV; 4 - GDCL–DIENCO JV; Y - Yes; N - no; ND - no data; NI - needs improvement; NA - not applicable (for resettlement issue, only environment related safeguards are discussed).

Project Activity	Mitigating Measures	Contractor's Compliance				Overall Compliance Status
		1	2	3	4	
	<p>Non-productive lands, barren lands, raised lands; wastelands shall be used for borrowing earth with the necessary permissions/consents</p> <p>If new borrow areas are to be selected, all environmental considerations to be ensured. The depths in borrow pits to be regulated so that the sides will not be steeper.</p> <p>Topsoil to be stockpiled and protected for use at the rehabilitation stage.</p> <p>Unpaved surfaces used for the haulage of borrow materials to be maintained.</p> <p>Transportation of earth materials through covered vehicles.</p>					
2. Soil						
Soil erosion due to construction activities, earthwork/cut & fill and Erath stockpiles	<p>Adopt Good Engineering &amp; construction practices.</p> <p>Undertake re-plantation of Native variety of trees and shrubs</p> <p>Construction schedule for bridges/beels during non-monsoon season.</p> <p>Bio-turfing of embankments to protect slopes.</p> <p>The earth stockpiles to be provided with gentle slopes to prevent soil erosion</p>	ND	ND	ND	ND	No data nor statement from monitoring reports about the mitigation measures implemented.
Compaction of soil due to movement of vehicles and equipment	<p>Construction vehicles, machinery, and equipment to be stationed in the designated right-of-way to avoid compaction.</p> <p>Approach roads/haulage roads shall be designed along the fallow and consolidated soil area to reduce the compaction.</p>	ND	ND	ND	ND	No data nor statement from monitoring reports about the mitigation measures implemented.
Contamination of soil due to leakage/spillage of oil, bituminous and non-bituminous debris	<p>Provision of cemented surface with dyke around fuel storage and filling.</p> <p>Oil interceptors shall be provided with at the wash fuelling</p> <p>Demolition waste to extent feasible.</p> <p>Oil and grease-soaked materials shall be disposed at designated approved locations and spilled oil</p>	Y	Y	Y	Y	Ground has been concreted by all contractors to prevent ground contamination.

Project Activity	Mitigating Measures	Contractor's Compliance				Overall Compliance Status
		1	2	3	4	
	shall be sold off to authorized recyclers.					
3. Water						
Loss of surface water bodies and impact on fishes	Design modifications shall be made to prevent any water bodies from filling. If filling is unavoidable, no bituminous or hazardous materials shall be used for filling. Institutional measures to be made to enhance fish productivity in these water bodies.	ND	ND	ND	ND	No data nor statement from monitoring reports about the mitigation measures implemented.
Siltation in water bodies	Bridge construction to be limited to the maximum extent in dry season. Embankment slopes to be modified suitably to restrict the soil debris entering water bodies. Provision of silt fencing shall be made at water bodies. Silt/sediment should be collected and stockpiled for possible reuse. Earthworks to be prevented from impeding natural flow of rivers, streams and water canals or existing drainage system.	ND	ND	ND	ND	No information that bridge and embankment constructions are ongoing.
Deterioration in surface water quality due to uncontrolled dumping of waste, sewage, dredge materials and accidental spillage of fuels	No sewage shall be discharged into the ponds and wetlands. Adequate provision for collection and disposal of liquid wastes at construction camps shall be made. Septic tanks shall be provided at construction camps and rehabilitation sites for treatment and disposal of sewage. Concrete platforms with bunding and shade are to be provided for storage of fuels and chemicals. Oil traps may be provided at construction sites, especially the fuelling areas.	Y	NI	Y	Y	Needs improvement for contractor 2, as toilets are not cleaned properly.
Alteration of aquifer regime and further contamination of already arsenic polluted aquifers	Maximize available surface water resources in the project area. No abstraction from all already arsenic polluted aquifers.	ND	ND	ND	ND	No data if groundwater is being extracted for use in construction site.
Health hazard to workers in case of unsafe drinking water supply	Workers shall be provided arsenic free and safe drinking water.	ND	ND	ND	ND	Although arsenic levels are nil, there is no evidence

Project Activity	Mitigating Measures	Contractor's Compliance				Overall Compliance Status
		1	2	3	4	
						from the report that groundwater is given to workers for drinking.
4. Drainage and Flood						
Drainage congestion due to waste/sediment disposal and construction of road embankment	The road elevation level in both the subprojects area is to be designed considering the flood threat levels. Construction shall be so planned that there is no drainage congestion. Wastes should not be disposed on any water body. Adequate cross drainage structure shall be provided to easy draining of water Regular cleaning up of all channels to avoid its choking.	ND	ND	ND	ND	No data nor statement from monitoring reports about the mitigation measures implemented.
5. Hydrology						
Impacts due to constructions of bridges	Consider flood threat mapping and drainage profiling for consideration of bridge heights.	Y	Y	Y	Y	Complied. This is an ADB requirement.
Increase in sedimentation and dispersion of pollutant of dredged material	The dredged material from the river bank shall be tested for presence of heavy metals and other pollutants before its reuse	ND	ND	ND	ND	No data nor statement from monitoring reports about the testing for heavy metals on dredged materials from the river.
6. Air Quality						
Dust Generation due construction activities and transport of construction materials.	Transport of loose and fine materials through covered vehicles. Loading and unloading of construction materials in covered area. Approach roads shall be paved and widened. Storage areas to be located downwind of the habitation area. Water spraying on earthworks, unpaved haulage roads, other dust prone areas and construction yard. Provision of PPEs to workers.	NI	NI	Y	NI	Most of the mitigating measures are being complied, although contractors 1, 2 and 4 need improvement on mitigating measures indicated. (i) All contractors implemented water spraying on earthworks (ii) Except for contractor no. 3

Project Activity	Mitigating Measures	Contractor's Compliance				Overall Compliance Status
		1	2	3	4	
						with adequate PPEs, other contractors have no masks for workers; (iii) no firefighting equipment in labor camp for contractors 1 and 4, and (iv) first aid kit and medical personnel are available
Emission from vehicle, equipment and machinery	Regular maintenance of machinery and equipment. Mixing plants and asphalt to be sited at least 1 km in the downwind direction from the nearest settlement. Ambient air quality monitoring. DG sets to be fitted with stacks of adequate height and low sulphur diesel to be used in DG sets as well as machineries. Monitoring of air quality as per environmental monitoring plan (EMoP).	Y	Y	Y	Y	Ambient air quality monitoring parameters are being monitored semi-annually. Ambient air quality for all parameters monitored 15-20 May 2018 are all within standard.
7. Noise						
Noise from construction vehicle, equipment and machinery.	All equipment to be timely serviced and properly maintained to minimize its operational noise. Construction equipment and machinery to be fitted with silencers and maintained properly. Construction timings to be regulated near inhabited and sensitive locations. Protection devices (ear plugs or ear muffs) will be provided to the workers operating in the vicinity of high noise generating machines. Noise monitoring.	N	N	N	N	Vulnerable labourers or those exposed to high level of noise, are not using ear plugs. It is recommended for all contractors to provide ear plugs to vulnerable workers.
Workers health in construction camp	Adequate sanitation facilities to be provided at construction camps by means of septic tanks soak pits, etc. Proper drainage to be maintained around the sites to avoid water logging leading to disease. Preventive medical care to be provided to workers.	NI	NI	NI	NI	Labour camp toilets need cleaning for the four contractors.

Project Activity	Mitigating Measures	Contractor's Compliance				Overall Compliance Status
		1	2	3	4	
	Disposal of solid waste on regular basis at identified locations. Provision of day crèche for children					
8. Topography and landscape						
Land degradation due to careless excavation from borrow area	All requisite borrow pits shall be opened preferably within the right-of-way and not on agriculture land Top soil shall be preserved. Borrow pits shall be rehabilitated. If any borrow pits are required to be opened on private land, it shall be either closed or converted to ponds as per the discretion of the landowner. Constructional wastes shall be optimally used for construction activities.	ND	ND	ND	ND	No data nor statement from monitoring reports about the mitigation measures implemented.
9. Flora and fauna						
Vegetation loss due to site preparation and construction activities	Minimize the tree cutting by selecting road widening option based on technical and tree laws consideration. Afforestation shall be done at the ration of 1:3 For social forestry afforestation ratio shall be as per the consultation with tree owner.	ND	ND	ND	ND	No data nor statement from monitoring reports about the mitigation measures implemented.
Disturbance to aquatic life including migration of fish due to bridge construction	Construction of Bridges during non-rainy season. Deep water channel shall be always maintained during bridge construction.	ND	ND	ND	ND	No data nor statement from monitoring reports about the mitigation measures implemented.
Impact on fishing activity (production, spawning and breeding grounds)	Adequate cross drainage structure shall be provided in all these areas. Institutional support shall be provided including promoting fish culture which can enhance the pond fish productivity No construction shall be undertaken during the spawning and breeding period between June, July, August and September at this activity aquatic sensitive location.	ND	ND	ND	ND	No data nor statement from monitoring reports about the mitigation measures implemented.
10. Social						

Project Activity	Mitigating Measures	Contractor's Compliance				Overall Compliance Status
		1	2	3	4	
Impact due to setting up of construction camp	Adequate sanitation facilities to be provided at construction camps by means of septic tanks soak pits, etc. Proper drainage shall be maintained around the sites to avoid water logging leading to disease. Preventive medical care shall be provided to workers. Disposal of solid waste on regular basis at identified locations.	NI	NI	Y	Y	Labour camp conditions are very poor for contractors 1 and 2. There is a need to provide adequate sanitation facilities for contractors 1 and 2. Adequate labour camp conditions for contractors 3 and 4.
Loss of private structures, agricultural land and common property resources	Design modifications to be made to avoid loss of any such structures. Relocation of common properties at proper locations in consultation with local/beneficiary population. Adequate compensation as recommended in Resettlement Plan. Institutional support shall be provided to improve the agriculture productivity and pond fishery productivity to compensate the loss of land productivity.	NA	NA	NA	NA	There is a separate discussion in Resettlement Plan.
<b>Operation Stage</b>						
1. Land use	Recommendation of Resettlement Plan shall be implemented.					Not yet applicable
2. Soil						Not yet applicable
Erosion due to damage of embankment and during transportation of sand by sand miners along river	Turfing of embankment shall be maintained Surveillance to protect the embankment from unauthorized accesses.					
Soil contamination due to accidental spillage from vehicular movement	In case of spillage, the report to relevant departments will be made. Efforts will be made to clean the spills of oil, toxic chemicals etc. as early as possible.					
3. Water resources						Not yet applicable
Contamination of water bodies from runoff from the roads						

Project Activity	Mitigating Measures	Contractor's Compliance				Overall Compliance Status
		1	2	3	4	
containing oils & grease						
Drainage construction due to construction of approach road and bypasses	Regular cleaning of drainage channels shall be done to avoid any choking / water logging					
Scarce ground water availability after rapid urbanization in the area after road development	Planned development shall be made in consistent to local development plan.					
4. Air environment						Not yet applicable
Air pollution due to vehicular movement	Roadside tree plantations will be done and maintained. Bottlenecks should be avoided for smooth flow of traffic. Plantation of pollutant absorbing trees. Regular maintenance of the road will be done to ensure good surface condition Ambient air quality monitoring should be carried out during operation phase. If monitored parameters are above the prescribed limit, suitable control measures must be taken.					
5. Noise environment						Not yet applicable
Noise pollution due to vehicular movement	Multi layered plantation at sensitive locations Speed limitation and restriction on horn at noise sensitive locations (i.e. health centers/educational institutions etc.). Monitoring of survival of trees at the rate of 75 % should be done in the first year of the operation phase and suitable mitigation measures should be taken to protect the trees.					
6. Topography and landscape						Not yet applicable
Encroachment in the right-of-way	The designated right-of-way shall be maintained free of any encroachment. The bridge site may also be developed as tourist spot with further beautification of the site.3					
7. Fauna and flora						Not yet applicable

Project Activity	Mitigating Measures	Contractor's Compliance				Overall Compliance Status
		1	2	3	4	
Killing of animals in road accidents	Low width under passes with the provision of small net on the both side of the road shall be provided where the animal movement					
Fragmentation of larger fish due to reduced water level	Efforts shall be made to maintain deep water stream for certain length on both end of the bridge.					
8. Safety						Not yet applicable
Increase in the number of road accidents & animals kills due to inadequate cross passes	Safety signal shall be displayed along the road and speed limits be displayed as well as monitored especially along settlements Foot over bridge shall be provided near schools, markets, habitat areas for safe crossing of the roads The speed limit shall however be such that bottlenecks do not result. As per the provisions made under the respective sections the structure measures for safety of man and animals shall be implemented.					

41. Based on the assessment of EMP compliance status of JCTE Road, most of the environmental concerns that need to be addressed by the contractors include: (i) improvement in cleanliness of labour camp toilets for contractor 2; (ii) requiring workers to wear adequate PPEs, specifically masks, for contractors 1, 2 and 4; (iii) the need to install firefighting equipment in labour camp for contractors 1 and 4; (iv) requiring vulnerable workers of all contractors to wear ear plugs; and (v) improvement in overall labour camp conditions for contractors 1 and 2.

#### **b. SASEC Dhaka–Northwest Corridor Road Project, Phase 2 – Tranche 1**

42. Construction works are still in the preliminary stage. Of the eight work packages, only four packages have started. As reflected in the December 2018 environmental safeguards monitoring report, monitoring of EMP compliance has yet to start. Status of compliance will be described in the next semi-annual monitoring report. As of 30 April 2019, the contractors have yet to appoint their environment, health and safety experts at the construction site. PIC national and environment specialists have been appointed on March and April 2019, respectively. Some of the contractors have yet to submit their site -specific environmental management plans for camp layout plan, spoil disposal plan, borrow area management plan, etc.

## B. Environmental Monitoring Plan

### a. SASEC Road Connectivity Project (Phase 1: Joydeypur–Chandra–Tangail–Elenga Road)

43. The EMoP compliance is summarized in Table 7. Environmental test results showed that parameters for ground water, surface water, and air quality were all within Bangladesh national standards. Results for noise exceeded the national standard because of ongoing construction activities of the four contractors.

**Table 7. Summary of Compliance of Joydeypur–Chandra–Tangail–Elenga Contractors with Environmental Monitoring Plan**

Contract Package	Contractor	Compliance with National Standards			
		Ground water	Surface water	Air Quality	Noise
WP – 01	Kyeryong Spectra JV	Passed	Passed	Passed	Failed
WP – 02	AML–HCM JV	Passed	Passed	Passed	Failed
WP – 03	Samwhan–Mir Aktaer JV	Passed	Passed	Passed	Failed
WP – 04	GDCL-DIENCO JV	Passed	Passed	Passed	Failed

### b. SASEC Dhaka–Northwest Corridor Road Project, Phase 2 – Tranche 1

44. As reflected in the December 2018 environmental safeguards monitoring report, monitoring EMoP compliance has yet to start. Status of compliance will be described in the next semi-annual monitoring report.

## C. Site Inspections, Audits, and Complaints

### a. SASEC Road Connectivity Project (Phase 1: Joydeypur–Chandra–Tangail–Elenga Road)

45. All contractors have engaged Environmental Quality Management Services Consulting Limited as Environment Specialist, with duties connected with the implementation of environmental management plan in the site. There are no complaints received during this reporting period.

### b. SASEC Dhaka–Northwest Corridor Road Project, Phase 2 – Tranche 1

46. There are no complaints yet for the project.

## D. Non-compliance Notices

### a. SASEC Road Connectivity Project (Phase 1: Joydeypur–Chandra–Tangail–Elenga Road)

47. No Non-Compliance Notices have been issued yet against the four civil works contracts.

### b. SASEC Dhaka–Northwest Corridor Road Project, Phase 2 – Tranche 1

48. No Non-Compliance Notices have been issued yet against the project.

## IV. FINDINGS AND RECOMMENDATIONS

### A. Compliance to Environmental Safeguard Requirements

#### a. SASEC Road Connectivity Project (Phase 1: Joydeypur–Chandra–Tangail–Elenga Road)

49. The Borrower has fully complied with the environmental regulations of Bangladesh - the Bangladesh Environmental Conservation Act of 1995 and Bangladesh Environmental Conservation Rules of 1997. The environmental clearance, secured on July 2015 and is renewable annually, is currently valid. Most of the environmental safeguards provisions in the Loan Agreement are being complied by the Borrower. As this investment only involves time slice financing of SASEC Phase 1 (one of the subprojects, subject to this environmental due diligence), the Borrower also achieved full compliance vis-à-vis the EARF in terms of project screening and categorization, assessment, institutional arrangements and processes to be followed for non-sensitive components of the project.

#### b. SASEC Dhaka–Northwest Corridor Road Project, Phase 2 – Tranche 1

50. Except for noise, which exceeded the national standards, the Borrower has fully complied with the environmental regulations of Bangladesh. The EIA including EMP was submitted to Department of Environment in 2014. Environmental Clearance for the project was obtained from Department of Environment on 15 July 2014 whereas, the construction commenced in January 2018.

51. Most of the environmental safeguard provisions in the Framework Financing Agreement and Loan Agreement are being complied by the Borrower. The Borrower also achieved full compliance with the EARF in terms of project screening and categorization, environmental selection criteria, environmental assessment and environmental management plan, consultation, information disclosure and grievance redress mechanism.

### B. Compliance to Environmental Management Plan

#### a. SASEC Road Connectivity Project (Phase 1: Joydeypur–Chandra–Tangail–Elenga Road)

52. The contractors need to improve their construction practices to fully comply with the EMP. Based on the July–December 2018 environmental monitoring report, most of the mitigating measures are being complied with by the four contractors. There is a need, however, to improve the cleanliness of toilet in labour camp, provision of masks for workers, installation of firefighting equipment in labour camps, provision of ear plugs for vulnerable workers. Overall, condition of labour camps needs improvement. Ambient air quality monitoring parameters are being monitored semi-annually. Ambient air quality for all parameters monitored on 15-20 May 2018 are all within standard.

#### b. SASEC Dhaka–Northwest Corridor Road Project, Phase 2 – Tranche 1

53. Construction works are still in the preliminary stage. Of the eight work packages, only four packages have started. As reflected in the December 2018 environmental safeguards monitoring report, monitoring of EMP compliance has yet to start.

54. As of 30 April 2019, the contractors have yet to appoint their environment, health and safety experts at the construction site. PIC national and environment specialists have been appointed on March and April 2019, respectively. Some of the contractors have yet to submit their site -specific environmental management plans for camp layout plan, spoil disposal plan, borrow area management plan, etc.

### **C. Compliance to Environmental Monitoring Plan**

#### **a. SASEC Road Connectivity Project (Phase 1: Joydeypur–Chandra–Tangail–Elenga Road)**

55. The compliance of contractor with EMoP is satisfactory as the parameters related to groundwater, surface water, and air, were all within Bangladesh national standards. The noise levels in all four contracts exceeded Bangladesh national standards as per December 2018 environmental monitoring report ([https://www.adb.org/sites/default/files/project-documents/40540/40540-014-emr-en\\_2.pdf](https://www.adb.org/sites/default/files/project-documents/40540/40540-014-emr-en_2.pdf)) as all contracts are actively being implemented.

#### **b. SASEC Dhaka–Northwest Corridor Road Project, Phase 2 – Tranche 1**

56. As reflected in the December 2018 environmental safeguards monitoring report, monitoring EMoP compliance has yet to start.

### **D. Recommendations**

57. Since most of the issues in the EMP implementation of Phase 1 concerns environment, health and safety, it is recommended that RHD, project implementation unit, and PIC closely coordinate with the contractors to encourage them to improve the cleanliness of toilet in labour camps, and provide vulnerable workers with masks and ear plugs. In some labour camps, installation of firefighting equipment must be imposed as this concerns the safety of workers.

58. For Phase 2, the PIC is also encouraged to supervise the appointment of EHS experts of contractors and to guide the contractors in the preparation and implementation of site specific EMPs.

59. For Phase 2 (Tranche 2), IEEs will be prepared for the construction of slow-moving traffic lane (SMVT) for Phase 1, and construction of Hatikamrul Interchange prior to approval. The IEEs for the establishment of RRTC and ROU will be prepared by the PIC (supervision consultant) after the detailed designs are prepared. Accordingly, the following condition may be added to the Loan Agreement for Tranche 2: “The Borrower shall cause RHD to (a) prepare IEEs and EMPs for the establishment of Research and Training Centre and Road Operations Unit and submit them to ADB for review; and (b) invite bidders for procurement of these works after IEEs and EMPs are disclosed.”