

Initial Environmental Examination

May 2015

IND: Rural Connectivity Investment Program — Project 3

RCTRC and RRNMU Buildings in Assam, Chhattisgarh, Madhya Pradesh, Assam and Odisha
under Batch- I and Batch – III

Prepared by Ministry of Rural Development, Government of India for the Asian Development Bank.

CURRENCY EQUIVALENTS

as of May 2015

| | | |
|---------------|---|-------------------|
| Currency unit | — | Indian rupee (Rs) |
| Rs 1.00 | = | \$.01572 |
| \$1.00 | = | Rs 63.5981 |

ABBREVIATIONS

| | | |
|---------|---|--|
| ADB | : | Asian Development Bank |
| ARRDA | : | Assam Rural Road Development |
| ARR&TI | : | Assam Road Research and Training Institute |
| BIS | : | Bureau of Indian Standards |
| CGRRDA | : | Chhattisgarh Rural Road Development Authority |
| ECOP | : | Environmental Codes of Practice |
| EIA | : | Environmental Impact Assessment |
| EMP | : | Environmental Management Action Plan |
| GOI | : | Government of India |
| IA | : | Implementing Agency |
| IEE | : | Initial Environmental Examination |
| MFF | : | Multi Tranche Financing Facility |
| MORD | : | Ministry of Rural Development |
| MORTH | : | Ministry of Road Transport and Highways |
| MOU | : | Memorandum of Understanding |
| MPRRDA | : | Madhya Pradesh Rural Road Development Authority |
| NRRDA | : | National Rural Road Development Agency |
| OSRRA | : | Odisha State Rural Road Agency |
| PFR | : | Periodic Finance Request |
| PIU | : | Project Implementation Unit |
| PIC | : | Project Implementation Consultants |
| PFR | : | Periodic Finance Request |
| PMGSY | : | Pradhan Mantri Gram Sadak Yojana |
| PRTC | : | Pre Registration Training Centre |
| PWD | : | Public Works Department |
| SRRDA | : | State Rural Road Development Agency |
| RCIP | : | Rural Connectivity Investment Program |
| RCTRC | : | Rural Connectivity Training and Research Centers |
| RRNMU | : | Rural Road Network Management Unit |
| RRS IIP | : | Rural Road Sector II Program |
| SPM | : | Suspended Particulate Matter |
| TA | : | Technical Assistance |
| TSC | : | Technical Support Consultants |
| WBSRDA | : | West Bengal State Rural Development Agency |

This initial environmental examination 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. Your attention is directed to the "terms of use" section of this website.

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.

TABLE OF CONTENTS

| | |
|--|----|
| EXECUTIVE SUMMARY | I |
| I. INTRODUCTION..... | 1 |
| A. Project Background | 1 |
| B. Project Locations | 2 |
| C. Objectives and Approach for Environmental Assessment | 4 |
| D. ADB Safeguard Policies and Category of the Project | 4 |
| E. Legal Framework and Legislative Requirements | 5 |
| II. DESCRIPTION OF THE PROJECT AND ENVIRONMENT | 7 |
| A. Project Description | 7 |
| B. Design Considerations..... | 7 |
| C. Existing Environment of Subproject Sites | 7 |
| III. ASSESSMENT OF ENVIRONMENTAL IMPACTS AND SAFEGUARDS | 14 |
| A. Environmental Screening Considerations | 14 |
| B. Anticipated Impacts and Mitigation Measures – Pre-construction Phase | 15 |
| C. Anticipated Impacts and Mitigation Measures – Construction Phase | 16 |
| D. Anticipated Impacts / Mitigation Measures – O&M Phase | 20 |
| IV. ENVIRONMENTAL MANAGEMENT PLAN | 21 |
| A. Environmental Management Plan | 21 |
| B. Environmental Monitoring Plan | 21 |
| V. INSTITUTIONAL ARRANGEMENTS AND GRIEVANCE REDRESS MECHANISM..... | 29 |
| A. Institutional Arrangements and Responsibilities..... | 29 |
| VI. PUBLIC CONSULTATION AND INFORMATION DISCLOSURE | 30 |
| A. Consultation and Information Disclosure..... | 30 |
| B. Grievance Redress Mechanism..... | 30 |
| VII. CONCLUSIONS | 31 |
| A. Conclusions..... | 31 |
| APPENDICES | |
| Appendix 1: Rapid Environmental Assessment (REA) Checklist | 32 |
| Appendix 2: Photoplates of Site Visit and Consultations | 0 |
| LIST OF TABLES | |
| Table 1: Locations of the pilot RCTRC and RRNMU | 2 |
| Table 2: List of Projects or Activities Requiring Prior Environmental Clearance..... | 5 |
| Table 3: Environmental Regulatory Compliance..... | 5 |
| Table 4: Description of Baseline Environmental Parameters of RCTRC Buildings | 8 |
| Table 5: Description of Environmental Parameters of Pilot RRNMU Buildings | 11 |
| Table 6: Fields in which the Subprojects are Not Expected to have Significant Impacts..... | 14 |
| Table 7: Anticipated Impacts and Mitigation Measures - Construction Phase..... | 16 |
| Table 8: Anticipated Impacts and Mitigation Measures - O&M Phase | 20 |
| Table 9: Environmental Management Plan – RCTRCs and RRNMUs..... | 22 |
| Table 10: Environmental Monitoring Plan..... | 27 |
| LIST OF FIGURE | |
| Figure 1 : Location of RCTRC amd Pilot RRNMUs in Project States..... | 3 |

EXECUTIVE SUMMARY

A. Background

1. The Government of India (GOI) launched PMGSY in year 2000 with the objective of providing all-weather road connectivity to all rural habitations with a population of more than 500 persons in plains and 250 persons in hill states. This program is being implemented through National Rural Road Development Authority (NRRDA) under Ministry of Rural Development (MORD) at central level and through State Rural Road Development Authority/Agencies (SRRDA) at state level. The Rural Connectivity Investment Program (RCIP) is continuation of Rural Road Sector II Program (RRS IIP) and is a multi-tranche financing facility (MFF) that aims to construct or upgrade to the all-weather standard about 9,000 km of rural roads connecting around 4,800 habitations in the states of Assam, Chhattisgarh, Odisha, Madhya Pradesh and West Bengal. Under RCIP Project 1 (Loan 2881-IND) sub-projects cover about 3,530 km in total (426.43 km in Assam, 1,009 km in Chhattisgarh, 1,187 km in Madhya Pradesh, 757 km in Odisha, and 151 km in West Bengal) while the RCIP Project 2 (Loan 3065-IND) covers about 3,693 km in total (499 km in Assam, 429 km in Chhattisgarh, 654 km in Madhya Pradesh, 1,184 km in Odisha, and 930 km in West Bengal). The amount funded for the states under ADB RCIP Project 1 is approximately \$381.44 million while funding under Project 2 is about \$275 million. The subprojects are at various stages of implementation.

2. Under RCIP Project 1 (Loan 2881-IND) each State will establish one pilot RRNMU. Later, during RCIP Project 3 preparation were the sites identified and approximately five additional RRNMUs (30 RRNMUs in total) are planned to be created. The RRNMUs will be created based on the existing PIUs for rural roads and shall have staffing, equipment, and facilities adequate to provide effective management of the rural road network. The States shall ensure full RRNMU staffing and budget adequate for the full implementation of RRNMU tasks. The States shall prepare the design of RRNMU facilities. Similarly, under RCIP Project 1 (Loan 2881-IND) each State will establish one RCTRC to facilitate the conduct of systematic training of engineers involved in the management of the rural road network, technicians, site supervisors, concerned staff of Panchayati Raj institutions, design consultants and contractors, and support a sustainable practice-oriented research on rural roads. The RCTRCs shall have staffing, equipment, and facilities adequate to provide high-quality and large scale training, both in house and with the use of external resource persons. Each State shall ensure full RCTRC staffing and budget adequate for the full implementation of RCTRC tasks. Like the RRNMUs, the States shall prepare the design of RCTRC facilities

3. The Government is now planning to submit to ADB the third Periodic Finance Request (PFR) covering states of Assam, Chhattisgarh, Odisha, Madhya Pradesh and West Bengal. This report has been prepared to serve the purpose for environmental compliances with ADB's safeguard Policy during preparation of the RCTRC and pilot RRNMU subprojects in the five states.

4. The proposed locations of the RCTRCs are: i) Guwahati, Assam, within the existing Assa Road Research and Training Institute (ARR&TI) Complex; ii) Chhattisgarh, Nimer, near Naya Raipur within State Institute of Rural Development (SIRD) Complex; iii) Madhya Pradesh, Bhopal, within the Water and Land Management Institute (WALMI) complex; iv) Odisha, Bhubaneswar, Ghatika near Khandagiri within the existing office and storage complex of Rural Works Department; and v) West Bengal, Kalyani, adjacent to State Institute of Panchayats and Rural Development (SIPRD). While the proposed pilot RRNMUs are located in: i) Assam, Tezpur, Sonitpur PIU Near Executive Engineer Quarter; ii) Chhattisgarh, Naya Raipur, Raipur

PIU In Sector 24 near village Jhanj; iii) Madhya Pradesh, Jabalpur PIU, Adjacent to existing PIU building; iv) Odisha, Angul PIU, Adjacent to Superintending Engineer (Rural Works) office; and v) West Bengal, Barasat, North 24 Pargana PIU Near court complex.

B. Project Description

5. Basic design concepts for the RCTRC and RRNMU buildings were developed by the CDTA consultants. The SRRDAs, through local consultants carried forward the design concepts and prepared detailed building designs taking local site conditions in to account. Typically the RCTRC buildings will comprise of the the following: i) 2-storey academic or classroom block (class room block); ii) 2-storey Hostel Block; iii) 1-storey Director's House, and iv) 1-storey Guest House. However, in the case of Chhattisgarh where the RCTRC is proposed within the SIRD complex, the existing hostel and guest house facilities will be utilized. The RRNMU buildings across all RCIP states will have: i) a reception facilities at the ground floor, ii) laboratories and support staff room at first floor, iii) office space for engineers, records and computers on the second floor, and iv) conference room at the third floor.

6. The RRNMU and RCTRC detailed designs conforms with the following: Guidelines and Specifications mentioned in National Building Codes,2006; Provisions under respective local authority and municipal bylaws; Integrating the existing trees with the layout design to avoid tree cutting; Provision of parking, open space, firefighting arrangements as per municipal norms; universal access for women, children, the elderly, and persons with disabilities including separate toilets for women, lifts and ramps for wheel chairs and persons with disabilities; rain water harvesting structures; solar water heating system ; and integrating waste disposal during construction and operation stage with the city waste disposal system.

C. Description of Environment

7. All proposed locations of the RRNMUs and RCTRCs are government lands either owned or allotted to the Pachayat and Rural Development or the Public Works Department (PWD). These lots are generally vacant, except in Assam where few old structures will be demolished. Almost all are located on plain terrain with the exception of the RCTRC in Madhya Pradesh and RRNMU in Assam which are located on hillock.

8. As the proposed structures are geographically dispersed, climate, geological features, and vegetation covers are also different. The proposed locations in Assam and West Bengal are seismically active while the rest are either moderate or least moderate. Assam, Chhattisgarh, and Madhya Pradesh have sub-tropical climates with average summer temperature reaching 28°C, winters at 12-16°C, and rainfall ranging from 1,062mm to 1,687mm. On the other hand, Odisha and West Bengal have tropical climates with warmer summers reaching 37°C. However, air quality at the proposed sites, being located on institutional zoned areas are acceptable with mobile emissions as the dominant source of pollution. Noise levels are typical of institutional zones. Not one of the proposed site is traversed by any natural water body. Domestic water is being supplied by the local water districts.

9. The proposed RRNMU and RCTRC locations are all outside forestlands or similarly protected areas. Still, a total of 4 trees will be cleared to make way for the proposed RRNMU structures and 5 trees for RCTRC. Utility shifting is only required at the Odisha where a high-tension electric line crosses a corner of the property. There are no cultural properties present within the proposed project sites.

D. Anticipated Environmental Impacts and Mitigation Measures

10. The proposed sites are located in built-up areas and with relatively small land requirement there are no significant adverse impacts related to siting. The scale of construction which is limited to 4-storey is not expected to scar the topography or require materials from devoted quarries or borrow areas and the risk of erosion, limited to the hillock areas, are easily managed through construction timing to avoid monsoon and constructing interceptor drains around exposed soils and storage materials.

11. There is a risk of further deteriorating the air quality from vehicle-related emissions, and transport and storage of materials. This impact is magnified as institutional, commercial, and limited residential structures are located within the immediate periphery of the project sites. These impacts will be minimized through the use of covered haul trucks and sprinkling of exposed soils and stored materials. Noise level is expected to increase and will cause temporary nuisance particularly during day time when people adjacent to the construction sites are working. The use of high noise equipment like pneumatic drills will be avoided. Enclosures will be provided around the site or activities generating noise to partially attenuate noise levels. Negative impact from dust and noise are unavoidable but temporary in nature and co-terminus with the construction period.

12. Occupational health and safety risk are significant considering limited construction space and working in elevated areas with mechanically moving parts. To address this, part of the civil works contract is the strict adherence to occupational health and safety protection measures as detailed in Industrial Employment (Standing Orders) Act 1946, Contract Labour (Regulation and Abolition) Act 1970, Payment of Wages Act 1936 etc. and all applicable laws and standards on worker's health and safety. The contractor will be required to produce and implement a site health and safety plan and arrange for readily available first aid unit including an adequate supply of sterilized dressing materials and appliances. In case work camps are established, the contractors will maintain necessary living accommodation and ancillary facilities in functional and hygienic manner.

13. Although the chance find of artifacts are low, part of the civil works contract is the proper handling, security, reporting, and retrieval of any artifact found within the construction site.

E. Environmental Management Plan and Institutional Arrangements

14. Appropriate mitigation measures are identified for the construction and operation the RCTRC and RRNMU. The identified impacts associated with construction of vertical structures and mitigation measures are common across RCIP states and similar designs will be adopted. The EMP provides common actions during construction and operation stages. The EMP will form part of the civil works bidding documents.

15. The environmental monitoring program is prepared to monitor the environmental performance of environmental management plan. Environmental monitoring inspections and reporting will be conducted by the respective SRRDA in tandem with the following construction milestones: i) design and pre-construction stage, ii) early construction stage (<25% progress of physical works), iii) during substantial completion stage (after 75% progress of Physical works), and iv) during operation stage. Findings and recommendations gathered during these inspections will be integrated and disclosed with the annual environmental monitoring report required under RCIP.

16. NRRDA/SRRDA has defined institutional setup including with specified responsibility for environmental management. Grievance Redress Mechanism is also defined for receiving public concerns at state, PIU, and central level.

F. Conclusion

17. The findings of environment assessment of the proposed RCTRC and pilot RRNMU buildings indicate that impacts are unlikely to cause any significant environmental impacts. Most of the impacts are likely to occur during construction stage, are temporary in nature, and can be mitigated with minor to negligible residual impacts. Operation phase impacts are related to proper sanitation system and waste disposal.

18. The sites/designs were selected based on availability of government land in the urban centres near the PIUs to avoid private land acquisition and related resettlement issues, and environment concerns relating to sensitive habitats. Accordingly, none of the proposed sites are near protected or sensitive areas or of any historical or archeologically protected areas. However, there may be the need for cutting of few trees that cannot be avoided by design changes.

19. Adequate engineering measures are proposed for seismic zone, slop stabilisation, erosion control and drainage of water/sewage.

20. The impacts identified are mostly related to land clearing, borrowing earth, cutting of trees, shifting of utilities, establishment of construction camp or material storage areas, transportation of material and operation of hot mix plant. All identified impacts are either eliminated or minimized through design consideration and suitable mitigative measures.

21. Environmental Management plan covering design, construction and operation has been prepared with defined responsibility for its implementation. Environmental Monitoring plan is also prepared to ensure effective implementation of EMP.

22. NRRDA/SRRDAs have defined institutional setup with specified responsibility for environmental management. Existing capacity of the SRRDAs and Project Implementation Units (PIUs) for environmental screening and implementing environmental management measures need substantial strengthening.

I. INTRODUCTION

A. Project Background

1. As one of the key features of the Government's poverty reduction agenda for the rural sector, the Government of India (GoI) is implementing a nation-wide rural road investment program, the Pradhan Mantri Gram Sadak Yojana or PMGSY. PMGSY aims to provide all-weather road connectivity to currently unserved habitations in India's rural areas, where 70% of the population live.

2. The Government of India (GOI) launched the PMGSY in year 2000 to connectivity to all rural habitations with a population of more than 500 persons in plains and and 250 persons in hill states. This program is being implemented through National Rural Road Development Authority (NRRDA) under Ministry of Rural Development (MORD) at central level and through State Rural Road Development Authority/Agencies¹ (SRRDA) at state level. The SRRDAs are the implementing agencies (IA) for the ADB funded subprojects in their respective states. The Rural Connectivity Investment Program (RCIP) is continuation of Rural Road Sector II Program (RRS IIP) and is a multi-tranche financing facility (MFF) that aims to construct or upgrade to the all-weather standard about 9,000 km of rural roads connecting around 4,800 habitations in the states of Assam, Chhattisgarh, Odisha, Madhya Pradesh and West Bengal.

3. Under RCIP Project 1 (Loan 2881-IND), each of the five States will establish one pilot Rural Road Network Management Unit or RRNMU. Construction of these buildings will take place during Tranche 3 implementation. Another 25 RRNMU buildings will be identified, designed and constructed under tranche 3. This will result in the creation of a total of 30 RRNMUs. The RRNMUs locations and management will be based on on the existing PIUs for rural roads and will be adequately staffed, equipped, , and will have its own center to provide effective management of the rural road network. The States shall ensure full RRNMU staffing and budget adequate for the full implementation of RRNMU tasks. The States will prepare the design of RRNMU facilities. Similarly under RCIP Project 1 (Loan 2881-IND), each State will establish one Rural Connectivity Training and Research Center (RCTRC) with the following main objectives: (i) conduct systematic training of engineers involved in the management of the rural road network, technicians, site supervisors, concerned staff of the *Panchayati Raj* institutions, design consultants and contractors, and (ii) support a sustainable practice-oriented research on rural roads. The RCTRCs shall have staffing, equipment, and facilities adequate to provide high-quality and large scale training, both using in-house and external resource persons. Each State shall ensure full RCTRC staffing and budget adequate for the full implementation of RCTRC tasks. Like the RRNMUs, the States shall prepare the design of RCTRC facilities

4. The Government is submitting to ADB the Periodic Finance Request 3 (PFR) covering states of Assam, Chhattisgarh, Odisha, Madhya Pradesh, and West Bengal. This report has been prepared in compliance to the ADB's Safeguard Policy 2009 (SPS 2009) and the RCIP Environmental Assessment and Review Framework² (EARF) during preparation of the RCTRC and pilot RRNMU subprojects in the five states.

¹ The Implementing Agencies in the 5 project states are Assam Rural Road Development Agency (ARRDA), Chhattisgarh Rural Road Development Authority (CGRRDA), Madhya Pradesh Rural Road Development Authority (MPRRDA), Odisha State Rural Road Agency (OSRRA) and West Bengal State Rural Development Agency (WBSRDA)

² <http://www.adb.org/sites/default/files/project-document/61272/40423-013-ind-earf.pdf>

B. Project Locations

5. In all the states, the RCTRC buildings are proposed within or near the state head quarter while the Pilot RRNMUs are also located in government lands but different areas than the RCTRC. In West Bengal the pilot RRNMU is located in North 24 Parganas district which has the most number of project roads in the state under RCIP. Location of the proposed RCTRC and pilot RRNMUs in the respective states is shown in Figure 1. State wise locations of RCTRC and pilot RRNMUs are as under:

Table 1: Locations of the pilot RCTRC and RRNMU

| State | RCTRC Building | Pilot RRNMU Building |
|----------------|---|---|
| Assam | Guwahati – within the existing Assam Road Research & Training Institute (ARR&TI) Complex (Total area – 3,856 Sq m) | Tezpur – Sonitpur PIU Near Executive Engineer Quarter (Total area – 1,638.92 Sq.m) |
| Chhattisgarh | Nimera – near Naya Raipur within State Institute of Rural Development (SIRD) Complex (Total area – 2,106 Sq m) | Naya Raipur – Raipur PIU In Sector 24 near village Jhanj (Total area – 1,731 Sq m) |
| Madhya Pradesh | Bhopal – within the Water and Land Management Institute (WALMI) complex (Total area – 4,593.95 Sq m) | Jabalpur – Jabalpur PIU Adjacent to existing PIU building (Total area – 1,800 Sq m) |
| Odisha | Bhubaneswar – at Ghatika near Khandagiri within the existing office and storage complex of Rural Works Department (Total area – 2,226.56 Sq m) | Angul- Angul PIU Adjacent to Sperintending Engineer (Rural Works) office (Total area – 1,659.11 Sq m) |
| West Bengal | Kalyani – adjacent to State Institute of Panchayats and Rural Development (SIPRD) (Total area – 7,284 Sq m) | Barasat – North 24 Pargana PIU Near court complex (Total area – 688 Sq m) |

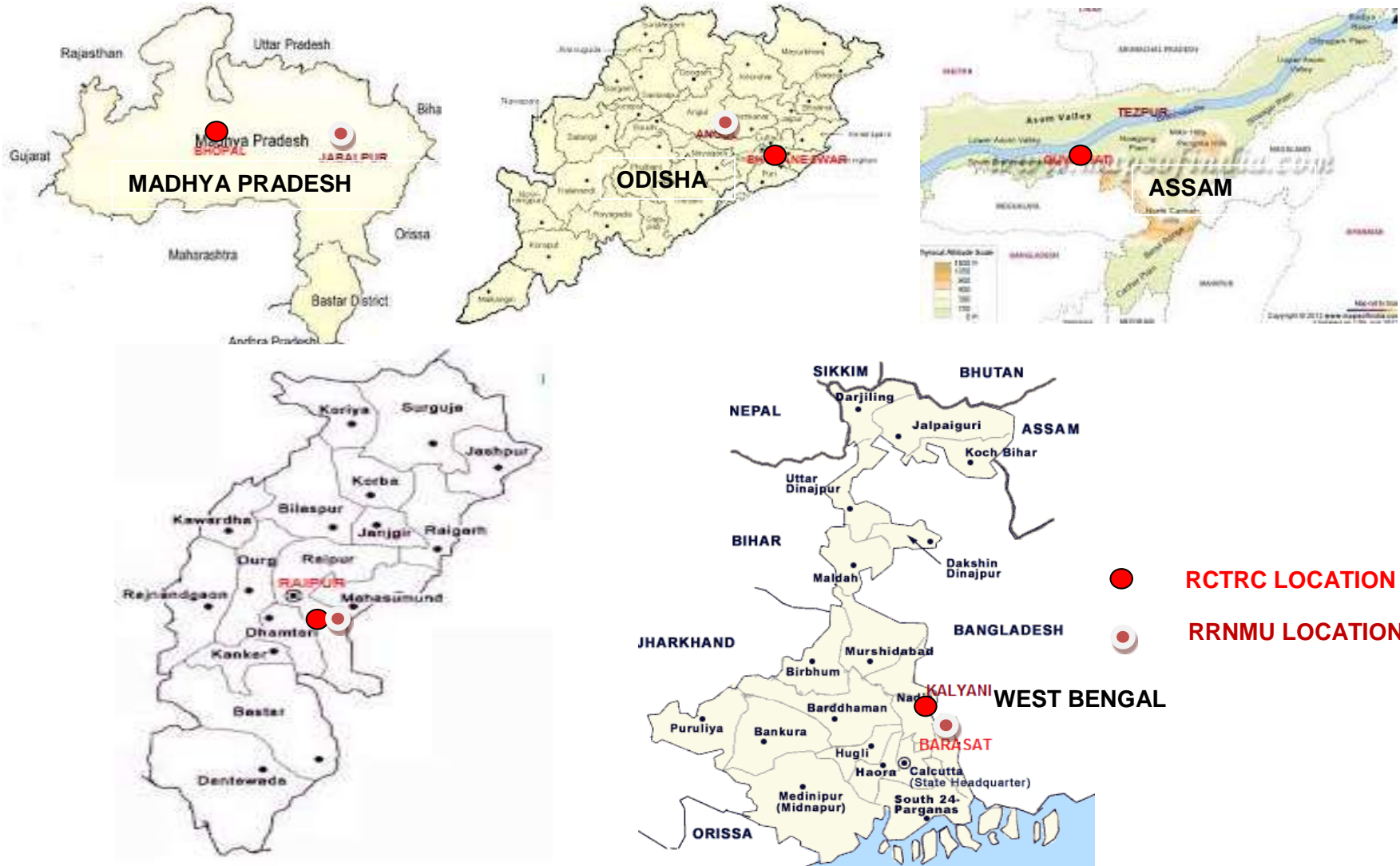


Figure 1 : Location of RCTRC and Pilot RRMUs in Project States

C. Objectives and Approach for Environmental Assessment

6. The objectives of this initial environmental examination are to: assess relevant potential impacts and risks associated with the construction and operation of the pilot RRNMU (one per state, total of five) and RCTRCs (one per state total of five), assess the compliance of the proposed project against applicable ADB requirements and domestic environmental laws and regulations, incorporate impact avoidance and mitigation measures early into the project design process, and incorporate cost effective mitigation and monitoring measures in the civil works contract, and require the implementing agencies to organize needed institutional mechanism for effective environmental management plan (EMP) implementation.

7. The remaining 25 RRNMU's (approximately 5 per state) will be located, designed, appraised and constructed during the implementation of tranche 3. The environmental assessment of these remaining buildings will be carried out as and when decisions are made on their location and design.

8. Specific environmental screening was carried out using Rapid Environmental Assessment (REA) for buildings developed for this assessment and guided by the generic ADB REA . These completed REA checklists with details of tree, utility, existing structures and photographs for each each subproject are provided in Appendix 1.

9. This IEE report has been prepared containing the following:

- Chapter I- Introduction
- Chapter II- Description of the Project and Environment
- Chapter III- Assessment of Environmental Impacts and Safeguards
- Chapter IV- Environmental Management Plan
- Chapter V- Institutional Arrangements and Grievance Mechanism
- Chapter VI- Public Consultation and Information Disclosure
- Chapter VII- Conclusions

D. ADB Safeguard Policies and Category of the Project

10. Asian Development Bank (ADB) environmental safeguards policy requires all ADB-financed projects to identify early in the project cycle environmental impacts and risks; formulate and implement plans to avoid, mitigate, or compensate potential adverse impacts; and inform and consult affected people during project preparation and implementation. The ADB SPS 2009 requires environmental assessment and through the following activities: screening and categorization; scoping; analysis of alternatives; project description; policy, legal and administrative framework; baseline environment; impact and risk assessment; environmental management plan (EMP); information disclosure; consultation and participation; grievance redress mechanism development; EMP implementation; and monitoring and reporting.

11. The establishment and operation of the RRNMUs and RCTRCs are classified as environmental category B and this report documents the findings and recommendations of the initial environmental examination. All project sites where the centers will be constructed are located in hindrance-free Government lands without any encroachers. None of these buildings are close to wildlife habitat or sanctuary. Impact on trees are also low.

E. Legal Framework and Legislative Requirements

12. The construction and operation of the RRNMUs and RCTRCs will be governed by various national and state environmental acts, rules, regulations, and standards. Besides these environmental laws, it is the responsibility of the IAs to ensure that the sub projects are consistent with the municipal/local bylaws. Compliance is required in all stages of the project including design, construction, and operation and maintenance.

13. As per Environment (Protection) Act, 1986; the Environmental Impact Assessment Notification, 2006; amended in 2009 defines the environmental impact assessment for defined development projects. The building/ construction area does not comes under ambit of EIA notification as depicted below;

Table 2: List of Projects or Activities Requiring Prior Environmental Clearance

| Project or Activity | Category with threshold limit | | Conditions if any |
|---------------------|---|---|--|
| | A | B | |
| Sl. 8 | Building /Construction projects/Area Development projects and Townships | | |
| 8 (a) | Building and Construction projects | ≥20,000 sq.mtrs and <150,000 sq.mtrs. of built-up area# | Built up area for covered construction; in the case of facilities open to the sky, it will be the activity area. |

Note: Any project or activity specified in Category 'B' will be treated as Category A, if located in whole or in part within 10 km from the boundary of: (i) Protected Areas notified under the Wild Life (Protection) Act, 1972, (ii) Critically Polluted areas as notified by the Central Pollution Control Board from time to time, (iii) Notified Eco-sensitive areas, (iv) inter-State boundaries and international boundaries.

Table 3: Environmental Regulatory Compliance

| Sl. No. | Legislation | Description |
|---------|--|--|
| 1. | Environment (Protection) Act 1986-EIA Notification 2006 (Amended 2009) | Not applicable. The proposed building project areas are below the notification threshold of 20,000 m ² . |
| 2. | Forests (Conservation) Act 1980 (Amended 1988), and Forest (Conservation) Rules, 1981, (Amended 2003) | Not applicable. The project area does not evolve any land diversion, therefore, no clearance required as per Act/Rules/ Prior permission is required from Forests Department for felling of trees. Cutting of trees need to be compensated by compensatory afforestation as per permission condition. |
| 3. | The Wildlife (Protection) Act, 1972 (Amended 1993) | Not applicable. No Wildlife Sanctuary exists within 10 km vicinity of the project sites. |
| 4 | The Water (Prevention and Control of Pollution) Act 1972 (Amended 1988), and the Water (Prevention and Control of Pollution) Rules, 1974 | Applicable. Placement of hot-mix plants, quarrying and crushers, batch mixing plants, discharge of sewage from construction camps requires <i>No Objection</i> |

| Sl. No. | Legislation | Description |
|---------|---|---|
| 5 | The Air (Prevention and Control of Pollution) Act, 1981, (Amended 1987), and the Air (Prevention and Control of Pollution) Rules, 1982 The Air (Prevention and Control of Pollution) Assam Rules, 1991 | <i>Certificate (Consent to Establish and Consent to Operate)</i> from State Pollution Control Board prior to start of construction or setting up specific facility. <i>Authorisation</i> will also be required for disposal of Hazardous Waste like waste oil etc. from State Pollution Control Board |
| 6 | The Noise Pollution (Regulation and Control) Rules, 2000 (Amended 2002) | |
| 7 | The Hazardous Waste (Management, Handling and Transboundary Movement) Rules 2008 (Amended 2009), and the Batteries (Management and Handling) Rule, 2001 | |
| 8 | Guidelines for Ground Water Extraction Prescribed by Central Ground Water Authority under the power granted under Environment (Protection) Act 1986 | Applicable. <i>Permission</i> from Central Ground Water Authority (CGWA) is required for extracting ground water for construction purposes, from declared as semicritical, critical, and overexploited areas from ground water potential prospective. For NOC, An application in the prescribed Performa is to be submitted either to the Office of the Regional Director, (CGWB) of the concerned state, or to Member Secretary, CGWA, New Delhi |
| 9 | The Ancient Monuments and Archaeological Sites and Remains Act, 1958, and the rules, 1959 | Applicable. Any remains if found while construction work shall be brought in notice of GOI |
| 10 | The Municipal Solid Waste (Management and Handling) Rules, 2000 | Applicable. Provides the requirements for municipal solid waste collection, segregation, storage, transport, processing, and disposal. |
| 11 | Equal Opportunities, Protection of Rights and Full Participation Act 1995 and United Nations Convention on Rights of Persons with Disabilities | Applicable. Universal accessibility in building design |

14. In addition to above environmental compliances, the States have to obtain building clearances from local municipal authorities before start of any construction activity.

II. DESCRIPTION OF THE PROJECT AND ENVIRONMENT

A. Project Description

15. Basic design concept of the RCTRC and RRNMU buildings were developed by the Capacity Development Technical Assistance (CDTA³) consultants. The SRRDAs through local consultants carried forward the design concept and prepared the detailed building designs taking local site conditions into account. Typically the RCTRC buildings comprise the following:

- Academic Block (class room block) – two-storey structure
- Hostel Block – two-storey structure
- Director's House – single-storey structure
- Guest House – single-storey structure

16. In case of Chhattisgarh where the RCTRC is proposed within the SIRD complex, the existing hostel and guest house facilities of the complex will be utilised by the RCTRC.

17. A typical RRNMU building will have 3-storey structure where the ground floor has the reception and utilities, first floor has laboratories and support staff's rooms, second floor has the office space for engineers, records and computers, and third floor has the conference room.

B. Design Considerations

18. While preparing the detailed design of the buildings the following considerations have been taken in to account:

- Guidelines and Specifications of the National Building Code, 2006
- Provisions under respective local authority and municipal bylaws
- Integrating the existing trees with the layout design to avoid or minimize tree cutting
- Provision for parking, open space, fire fighting arrangements as per municipal norms
- Universal Accessibility requirements for persons with disabilities
- Rain water harvesting structures
- Solar water heating system
- Integrating waste disposal during construction and operation stage with the city waste disposal system etc.
- Groundwater supply system
- Back-up power supply through diesel generator set

C. Existing Environment of Subproject Sites

19. Existing environmental conditions at the proposed RCTRC and RRNMU subproject sites are described in Table 4 and Table 5, respectively.

³ TA 8110-IND: Institutional Development for Rural Road Asset Management

Table 4: Description of Baseline Environmental Parameters of RCTRC Buildings

| S No. | Parameter | Assam | Chhattisgarh | Madhya Pradesh | Odisha | West Bengal |
|-------|----------------|---|--|---|--|---|
| 1 | Land ownership | Owned by Assam PWD | Owned by Dept. of Panchayat and Rural Development, Govt. of Chhattisgarh | Owned by Dept. of Panchayat and Rural Development, Govt. of Madhya Pradesh | Owned by Rural Development Department, Govt. of Odisha | Owned by Dept. of Panchayats and Rural Development, Govt. of West Bengal |
| 2 | Topography | Plain | Plain | Located on a hillock next to Kaliyasot Reservoir | Plain | Plain |
| 3 | Land Use | Staff quarters of Assam PWD and vacant area | Vacant area | Vacant area with some structures of "Sanitation Demonstration Project" of WALMI | Storage and parking | Vacant area |
| 4 | Soil | Guwahati city has red and alluvial soils. | Sandyloam | Medium to shallow black | Deltaic Alluvium | Gangetic alluvium |
| 5 | Geology | Seismic Zone V (most severe seismic zone)- corresponding to MSK-intensity IX (9.0) | Seismic Zone II (Least Active) | Seismic Zone III (Moderate Risk) | Seismic Zone III (Moderate Risk) | Seismic Zone IV (High Risk) |
| 6 | Drainage | Bharalu river is the main channel passing through Guwahati that drains to River Bramhaputra. The site is linked to Bharalu river through a network of municipal drains. | Both Mahanadi and River Kharoon flow near Naya Raipur. Future water supply to Naya Raipur is planned to be catered from Mahanadi. Although, Nimora is within the Naya Raipur complex, the present SIRD complex is dependent on ground water supply. The planned city of Naya Raipur has a well laid out drainage and sewer system. | The area around WALMI drains out to Kaliyasot River a tributary of Betwa river through a network of natural channels. | The drainage system of Bhubaneswar city is governed by natural channels that lead to Kuakhai River and Daya River (Distributary of Kuakhai). | Kalyani is a planned satellite town of Kolkata on the banks of Hoogly river. The area is marked with a network of natural khals. The primary drains comprise the natural khals and channels, and are almost entirely unlined earth, while the tertiary drains are pucca with brick and concrete. The secondary drains comprise both natural earth and pucca channels. |
| 7 | Climate | Sub tropical monsoon type climate Avg. Temp | Sub tropical monsoon type climate Avg. Temp | Dry to sub-humid type climate Avg. Temp | Tropical Savanna climate Avg. Temp | Tropical climate Avg. Temp Summer – 30 ^o C |

| S No. | Parameter | Assam | Chhattisgarh | Madhya Pradesh | Odisha | West Bengal |
|-------|---------------------|---|--|---|---|---|
| | | Summer – 31 ⁰ C Winter – 11.3 ⁰ C Mean rainfall of the district is 1,717.7 MM | Summer – 28 ⁰ C Winter – 12 ⁰ C Mean rainfall of the district is 1,330 MM | Summer – 28 ⁰ C Winter – 16 ⁰ C mean rainfall of the district is 1,687.65 MM | Summer – 36.5 ⁰ C Winter – 15.6 ⁰ C Mean rainfall of the district is 1,492 MM | Winter – 19 ⁰ C Mean rainfall of district is 1,345 MM |
| 8 | Air Quality | Other than normal, there are no major air emission sources at the subproject site except for limited vehicular emissions from inter-urban traffic. | Other than normal, there are no major air emission sources at the subproject site. The site and surroundings are yet to develop in the new Raipur town and experiences very limited vehicular emissions. | The site is at a secluded campus complex that experiences very limited vehicular movement. There are no major air emission sources at the subproject site.. | Proposed site is located at peripheral area of the city experiencing new developments and other than normal, there are no major air emission sources. The area experiences very limited vehicular emissions. | Proposed site is located at demarcated institutional zone of the planned city with large open areas. Other than normal, there are no major air emission sources. The area experiences very limited vehicular emissions. |
| 9 | Water Quality | People of the area generally use municipal water as well as ground water for domestic use, and drinking. Water from both the sources are good for drinking purpose. Guwahati being on the banks of River Bramhaputra, water table is within 10 to 15 m. | The existing SIRD complex is dependent on ground water that is good for drinking and other domestic uses. The water table in the area is around 25-30m. | The existing WALMI complex receives treated municipal water supply. In the locality around the complex, ground water table is within 15 to 20m and is used for drinking purpose. | People of the area use both municipal water as well as ground water for domestic use, and drinking. Water table is between 15 to 20m and shallow hand tube wells are used by the general population to abstract water from the ground.. | People of the area generally use municipal water as well as ground water for domestic use, and drinking. Water from both the sources are good for drinking purpose. Being on the banks of River Hoogly average depth of ground water table is 8m in Chakda block where Kalyani town is located. |
| 10 | Noise and Vibration | The en-route area is peri-urban to urban within the Fatasil hills market area. The noise levels in the locality are similar to that of any small urban area. In this urban location | Present SIRD complex is located in a rural set up about a km away from the NH. The noise levels in the complex are similar to that of any small residential area and is | WALMI complex is located in a secluded hillock in the peri-urban area of Bhopal. Very limited number of vehicles visit the complex. The noise levels are similar to that of any small | The en-route area is peri-urban to urban beyond the Khandagiri hillock. The noise levels in the locality are similar to that of any small urban area. In | The subproject is located in the institutional zone with large vacant areas in a planned city. The noise levels from the residential areas around the proposed |

| S No. | Parameter | Assam | Chhattisgarh | Madhya Pradesh | Odisha | West Bengal |
|-------|--------------------------------|---|---|---|---|---|
| 10. | Noise and Vibration (Contd.) | noise is due to vehicles, machinery and other related activities, and is normally in the range of 55 to 75 dB(A). | normally less than the national prescribed noise standards for residential areas i.e. 55 dB(A) during the day time and 45 dB(A) during the night time | residential area and is normally less than the national prescribed noise standards for residential areas i.e. 55 dB(A) during the day time and 45 dB(A) during the night time | this urban location noise is due to vehicles, machinery and other related activities, and is normally in the range of 55 to 75 dB(A). | location are due to vehicles and related activities and is normally less than the national prescribed noise standards for residential areas i.e. 55 dB(A) during the day time and 45 dB(A) during the night time. |
| 11 | Biodiversity, Forest and Trees | There are no forests, national parks or sanctuaries in and around the proposed sub project site. Existing trees except one will not be affected due to the project. There are few trees | There are no forests, national parks or sanctuaries in and around the proposed sub project site. There are 8 trees within the proposed site which will not be affected due to the proposed buildings. | The three separate blocks proposed for the RCTRC have shrubs and bushes that grows in the area during rainy season. There are 3 trees in the proposed site for the administrative building that will not be affected due to construction. | The proposed site has 5 trees of local variety of which 3 will be affected. | The proposed site has 4 trees of which only 1 will be affected. There are no forests, national parks or sanctuaries in and around the proposed sub project site. |
| 12 | Socio-Economic | Old PWD staff quarters will be affected | Nil | Nil | Watch man cabin | Nil |
| 13 | Utility Structures | Nil | Nil | Structures of 'Sanitation Demonstartion Project' | High tension power line passess through one corner of the proposed site. | Nil |
| 14 | Physical and Cultural Heritage | One community space for religious activities (Naamghar) | Nil | Nil | Nil | Nil |

Table 5: Description of Environmental Parameters of Pilot RRNMU Buildings

| S No. | Parameter | Assam | Chhattisgarh | Madhya Pradesh | Odisha | West Bengal |
|-------|----------------|---|---|---|---|---|
| 1 | Land ownership | Owned by Assam PWD | Owned by Dept. of Panchayat and Rural Development, Govt. of Chhattisgarh | Owned by Dept. of Panchayat and Rural Development, Govt. of Madhya Pradesh | Government land allotted to Rural Development Department for RRNMU by District Land Allocation Committee | Government land allotted to Deptt. of Panchayats and Rural Development, Govt. of West Bengal. Land transfer in progress |
| 2 | Topography | Located on a hillock overlooking the Bramhaputra river | Plain | Plain | Plain | Plain |
| 3 | Land Use | Staff quarters of Assam PWD + vacant area | Vacant area | Vacant area | Vacant area | Vacant area |
| 4 | Soil | Alluvial Soil | Black Cotton, Red-Yellow Loamy | medium black type | medium black alluvial type | Gangetic alluvium |
| 5 | Geology | Seismic Zone V (most severe seismic zone)- corresponding to MSK-intensity IX (9.0) | Seismic Zone II (Least Active) | Seismic Zone III (Moderate) | Seismic Zone III (Moderate Risk) | Zone IV (High) |
| 6 | Drainage | Bramhaputra flows next on the southern side of the proposed location. The location being on a hillock, naturally drains to the river. | The district occupies the south eastern part of the upper Mahanadi valley and the bordering hills in the south and the east. Both Mahanadi and River Kharoon flow near Naya Raipur. Future water supply to Naya Raipur is planned to be catered from Mahanadi. The planned city of Naya Raipur has a well laid out drainage and sewer system. | The district falls mostly in the Narmada watershed area. Other smaller rivers are Gaur, Hirann, Sindor etc. | The major part of the area forms the plains of river Brahmani and its tributaries like Nandira Jhor, Singhara Jhor and Tikra River. The drainage network is controlled by river Brahmani. The rivulet Nandira, which flows centrally from west to east and meets Brahmani near the village Kamalanga is highly polluted as it is carrying almost all the industrial effluents and also a sizeable load of domestic effluent from industrial townships | Barasat is located in the Ganges Brahmaputra delta region. No notable river flows by the city |
| 7 | Climate | Sub tropical monsoon type | Sub tropical monsoon type climate | Sub tropical monsoon type | Tropical climate Avg. Temp | Tropical climate Avg. Temp |

| S No. | Parameter | Assam | Chhattisgarh | Madhya Pradesh | Odisha | West Bengal |
|-------|---------------------|---|--|--|---|---|
| | | Avg. Temp Summer – 28 ^o C Winter – 16 ^o C mean rainfall of the district is 1687.65 MM | Avg. Temp Summer – 28 ^o C Winter – 12 ^o C Mean rainfall of the district is 1330 MM | Avg. Temp Summer – 29 ^o C Winter – 15 ^o C mean rainfall of the district is 1062 MM | Summer – 37 ^o C Winter – 11 ^o C mean rainfall of the district is 1421 MM | Summer – 30 ^o C Winter – 19 ^o C Mean rainfall of district is 1579 MM |
| 8 | Air Quality | Other than normal, there are no major air emission sources at the subproject site except for limited vehicular emissions from inter-urban traffic. | Other than normal, there are no major air emission sources at the subproject site. The site and surroundings are yet to develop in the new Raipur town and experiences very limited vehicular emissions. | The site is at a secluded campus complex that experiences very limited vehicular movement. There are no major air emission sources at the subproject site.. | Proposed site is located at peripheral area of the city experiencing new developments and other than normal, there are no major air emission sources. The area experiences very limited vehicular emissions. | Proposed site is located at demarcated institutional zone of the planned city with large open areas. Other than normal, there are no major air emission sources. The area experiences very limited vehicular emissions. |
| 9 | Water Quality | People of the area generally use municipal water as well as ground water for domestic use, and drinking. Water from both the sources are good for drinking purpose. Guwahati being on the banks of River Brahmaputra, water table is within 10 to 15 m. | The existing SIRD complex is dependent on ground water that is good for drinking and other domestic uses. The water table in the area is around 25-30m. | The existing WALMI complex receives treated municipal water supply. In the locality around the Walmi complex, ground water table is within 15 to 20m and is used for drinking purpose. | People of the area use both municipal water as well as ground water for domestic use, and drinking. Water table is between 15 to 20m and shallow hand tube wells are used by the general population to abstract water from the ground.. | People of the area generally use municipal water as well as ground water for domestic use, and drinking. Water from both the sources are good for drinking purpose. Being on the banks of River Hoogly average depth of ground water table is 8m in Chakda block where Kalyani town is located. |
| 10 | Noise and Vibration | The en-route area is peri-urban to urban within the Fatasil hills market area. The noise levels in the locality are similar to that of any small urban area. In this | Present SIRD complex is located in a rural set up about a km away from the NH. The noise levels in the complex are similar to that of any small residential area and is | WALMI complex is located in a secluded hillock in the peri-urban area of Bhopal. Very limited number of vehicles visit the complex. The noise levels are | The en-route area is peri-urban to urban beyond the Khandagiri hillock. The noise levels in the locality are similar to that of any small urban area. In this urban location noise is due to vehicles, machinery and | The subproject is located in the institutional zone with large vacant areas in a planned city. The noise levels from the residential areas around the proposed location are due to vehicles and |

| S No. | Parameter | Assam | Chhattisgarh | Madhya Pradesh | Odisha | West Bengal |
|-------|--------------------------------|---|---|--|---|--|
| | | urban location noise is due to vehicles, machinery and other related activities, and is normally in the range of 55 to 75 dB(A). | normally less than the national prescribed noise standards for residential areas i.e. 55 dB(A) during the day time and 45 dB(A) during the night time | similar to that of any small residential area and is normally less than the national prescribed noise standards for residential areas i.e. 55 dB(A) during the day time and 45 dB(A) during the night time | other related activities, and is normally in the range of 55 to 75 dB(A). | related activities and is normally less than the national prescribed noise standards for residential areas i.e. 55 dB(A) during the day time and 45 dB(A) during the night time. |
| 11 | Biodiversity, Forest and Trees | There are no forests, national parks or sanctuaries in and around the proposed sub project site. Existing trees except one will not be affected due to the project. There are a few trees | There are no forests, national parks or sanctuaries in and around the proposed sub project site. There are 8 trees within the proposed site which will not be affected due to the proposed buildings. | The three separate blocks proposed for the RCTRC have shrubs and bushes that grow in the area during rainy season. There are 3 trees in the proposed site for the administrative building that will not be affected due to construction. | The proposed site has 5 trees of local variety of which 3 will be affected. | The proposed site has 4 trees of which only 1 will be affected. There are no forests, national parks or sanctuaries in and around the proposed sub project site. |
| 12 | Socio-Economic | Old PWD staff quarters will be affected | Nil | Nil | Watch man cabin | Nil |
| 13 | Utility Structures | Nil | Nil | Structures of 'Sanitation Demonstration Project' | High tension power line passes through one corner of the proposed site. | Nil |
| 14 | Physical and Cultural Heritage | One community space for religious activities (Naamghar) | Nil | Nil | Nil | Nil |

III. ASSESSMENT OF ENVIRONMENTAL IMPACTS AND SAFEGUARDS

A. Environmental Screening Considerations

20. Environmental issues for consideration have been raised by the following means: (i) desktop work on information relevant to the proposed subprojects; (ii) input from interested and affected parties; (iii) site visits; and (iv) evaluation of proposed design scope and potential impacts. The baseline environmental data indicated that the subprojects are located in urban areas and no natural habitat is near the sites. There are no protected areas, forest within or near the location of the proposed building locations. The proposed buildings are located at sites that are easily accessible by existing road. The proposed locations were selected to minimize any adverse environmental impacts, land acquisition, construction of ancillary facilities, and adequate provisions have been incorporated into the project design to mitigate the impacts.

21. Categorization of the subprojects and formulation of mitigation measures have been guided by ADB's generic REA Checklist and adapted for buildings (Refer Appendices). The screening indicated temporary significant impacts like noise and dust occurring during construction.

22. Preliminary design and results of the rapid environmental assessment indicate that implementation of the proposed subprojects will not be having major negative impacts as activities will be localized/site-specific and temporal. There is no rehabilitation and resettlement issues as the proposed sites are government owned land and construction works will be on existing unoccupied and vacant government land. Table 3.1 analyses the extent of impact.

Table 6: Fields in which the Subprojects are Not Expected to have Significant Impacts

| Sl. No. | Attribute | Rationale |
|----------|---|---|
| A | Physical Characteristics | |
| 1 | Topography, land use, geology and soils | <ul style="list-style-type: none"> • Land is already in possession of SRRDAs and dominant land use is institutional. • No anticipated change in topography, geology, or soils. • Erosion hazard is insignificant as trenching and excavation works will be conducted only during construction stage specific to shelters/ buildings. • No degradation of land will occur as a result of the foundation works as the excavated soil will be stored and reused in backfilling. |
| 2 | Air Quality | Conducting earthworks at dry season and moving large quantity of materials may create dust and vehicular emissions such as carbon monoxide, sulfur oxides, particulate matter, nitrous oxides, and hydrocarbons which will affect people who live and work near the sites. These impacts are short-term, site-specific and within a relatively small area. There are well developed methods for mitigation. After construction, the exposed soils will be turfed as part of landscaping or paved and therefore dust generation will be lower. |
| 3 | Water Quality | Trenching and excavation, run-off from stockpiled materials, and chemical contamination from fuels and lubricants shall be suitably controlled during construction phase and will not result in water pollution particularly during rainfall runoff which could cause siltation and reduction in the quality of adjacent water bodies. Potential impacts are short term, site-specific and within a small area. During operation, all wastewater will be treated in the septic |

| Sl. No. | Attribute | Rationale |
|-----------|---|---|
| | | tanks which will be properly maintained to avoid overflows towards the community sewers. |
| 4 | Noise and Vibration | <ul style="list-style-type: none"> Temporary increase in noise level and vibrations may be caused by excavation equipment and the transportation of equipment and materials during construction. Adequate mitigation measures to be taken according to EMP |
| B. | Biological Characteristics | |
| 1 | Biodiversity, Forest and Trees | <ul style="list-style-type: none"> Activities being located in the built-up urban areas will not cause direct impact on biodiversity values. The construction activities do not anticipate large scale cutting of trees or any encroachment of forest. |
| C. | Socioeconomic Characteristics | |
| 1 | Socio- Economic | <ul style="list-style-type: none"> The project will have positive impact in providing additional job opportunity, skill transfer, and training. Road closure is not anticipated. Hauling of construction materials and operation of equipment on-site will not cause any traffic problems. |
| D. | Historical, Cultural, and Archaeological Characteristics | |
| 1 | Physical and cultural heritage | <ul style="list-style-type: none"> There are no scheduled or unscheduled archaeological, paleontological, or architectural sites of heritage significance listed by local and/or national authority adjacent to subproject sites. The subproject components are not located in or near and excavation works. In any eventuality, chance find of artifacts will be governed by FIDIC provisions of the contractor halting the construction in the immediate area of chance find, reporting to the SRRDA as the employer, and retrieval of the artifacts with supervision of relevant authorities. |

23. **Climate Change Impact:** As most of the states will be experiencing changes in rainfall amount and distribution, all building were designed to have adequate runoff drainage systems to effectively convey water and avoid localize flooding. Rain water harvesting structures will be installed on structures as required by the Central Ground Water Board.

24. **Seismic Risk.** Out of the five project states, Assam is located in in seismic zone V (highest risk); both the RCTRC and RRNMU buildings have been planned with earthquake resistant pillar based designs.

B. Anticipated Impacts and Mitigation Measures – Pre-construction Phase

25. Land acquisition and resettlement. All proposed RCTRC and pilot RRNMUs are proposed on government land. There are no encroachers or residential/commercial structures in these lands.

26. Planning principles and design considerations have been reviewed and incorporated into the site planning process. Locations and siting of the proposed infrastructures were considered to further reduce impacts. Access to the subproject sites is through public ROW and existing roads hence, land acquisition and encroachment on private property will not occur.

27. Cutting of trees are minimal. Compensatory plantation for trees lost at a rate of 3 trees for every tree cut, in addition to the required tree plantation in the design, will be implemented by the contractor, who will also maintain the saplings for the duration of his contract.

C. Anticipated Impacts and Mitigation Measures – Construction Phase

28. The construction of the RCTRC and RRNMU buildings are confined to small lots within an institutional zoned area involving common and proven construction methods. The anticipated impacts during construction, other than transport of construction materials and disposal of debris which are hauled in small volumes, are localized and easily managed.

1. Construction method.

29. Tasks to be performed for construction of the RCTRC and RRNMUs are: (i) site clearing; (ii) laying of foundations; (iii) casting of ground floor slab; (iv) construction of floor beams and floor slabs; (v) construction of roof beams and roofing; (vi) installation of doors and windows; (vii) architectural components and finishes; and (viii) ordering, procurement and installation of building services. Excavation for the foundation will be accomplished through backhoe digger and supplemented by manual digging where necessary. Excavated soil will be used to fill depressions within the lot boundary and if there are excess materials will be temporarily stored inside the property until other users are found or permitted for disposal.

30. There is sufficient space for staging area, construction equipment, and stockpiling of materials at all the proposed sites. The contractors will remove all construction and demolition wastes from the work site on a weekly basis.

31. The construction camp will be limited to materials staging and perimeter security and no more than 5 persons will be permanently stationed in the area. During daytime, an estimated 50-75 laborers will be working during the peak periods of cement laying and finishing works. These workers will not take lodging in the project area.

32. Although construction of the proposed buildings involve quite simple techniques of civil work, there will be excavations works involving earth movement. The sub-projects sites are located on an institutional zoned area could affect the daytime activities of nearby offices and a limited residential structures. Unavoidable impacts in addition to dust and noise may occur like temporary disruption of water, telephone, and electric utilities that may need shifting. Diurnal increase in traffic from laborers and materials egress. These impacts are short-term, site-specific, and within relatively small areas and are unlikely to cause significant adverse impacts. The potential adverse impacts that are associated with construction activities can be mitigated to acceptable levels as detailed in Table 7.

Table 7: Anticipated Impacts and Mitigation Measures - Construction Phase

| Parameter | Impacts | Mitigation Measures |
|---|---|--|
| Physical Environment | | |
| Topography, landforms geology and soils | The amount of construction materials needed i.e. gravel, sand, borrow earth, and cement are not substantial enough to cause localized changes in topography and landforms in the source quarries. All materials are readily available in the market. There is also no adverse impacts on the local topography as the project site is small and the existing terrain is relatively flat. | All construction materials will be sourced from permitted suppliers. If there is a need for borrow materials, construction debris from other projects such as building demolition, road reconstruction that are being undertaken by the SRRDA will be utilized and no new borrow pits created. |

| Parameter | Impacts | Mitigation Measures |
|----------------------|--|---|
| Water Quality | Excavation, run-off from stockpiled materials, and chemical contamination from fuels and lubricants may result to silt-laden and petroleum contaminated runoff particularly during rainy season. These will cause siltation of the drainage canals and contribute to the water quality deterioration of the receiving water body. Potential impacts are short-term but may affect areas beyond the project boundary. | <p>All temporarily stored materials whether construction or excavated will be covered and either enclosed in a shallow bund or canal to contain runoff and spills. All petroleum materials will be stored in required containers and located on paved surface with perimeter catch drain.</p> <p>Construction debris and excess excavated materials, if any, will be used as fill materials on depressed areas to minimize off-site transport and disposal.</p> <p>All earthworks must be carried out during dry season to minimize impacts on water quality, access inconvenience, and localized flood risks.</p> <p>Location of stockyards shall be identified at least 500m away from watercourses. Place storage areas for fuels and lubricants away from any drainage leading to water bodies.</p> <p>Take all precautions to prevent wastewater entering into streams, watercourses, or irrigation system. Install temporary silt traps or sedimentation basins along the drainage leading to the water bodies.</p> <p>While working across or close to any water body, the flow of water must not be obstructed. Ensure no construction materials like earth, stone, or appendage are disposed of in a manner that may block the flow of water of any watercourse and cross drainage channels.</p> |
| Air Quality | Earthmoving may create dusts and increase in vehicle emission. | <p>Water sprinkling of storage and unpaved haul roads.</p> <p>Cover by tarpaulins the windward sections of storage piles. All haul trucks should be covered by tarpaulin during transport.</p> |
| Acoustic Environment | Construction activities near settlements and sensitive community structures like schools and churches will increase noise level from excavation and transportation activities. | <p>Plan activities in consultation with local municipal authority and local community so that activities with potential to generate noise are conducted during periods of the day which will result in least disturbance.</p> <p>Use of high noise generating equipment shall be stopped during night time.</p> <p>Utilize vehicles and machinery with</p> |

| Parameter | Impacts | Mitigation Measures |
|-------------------------------|---|--|
| | | <p>Pollution Under Control (PUC) to limit noise and exhaust emissions..</p> <p>All vehicles and equipment used in construction shall be fitted with exhaust silencers. Use silent-type generators.</p> <p>Identify any buildings at risk from vibration damage and avoid use of pneumatic drills or heavy vehicles in the vicinity.</p> <p>Provide netting, covers, and other noise barriers inbetween the source and nearby sensitive receivers.</p> |
| Aesthetics | Impairment of visual aesthetics on the general appearance of the area will occur from the clearing of trees, excavation of trenches, storage of excavated and construction materials, generation of solid wastes, and ponding of rainwater. | <p>Proper layout of construction site.</p> <p>Use of suitable storage containers for waste.</p> <p>Weekly collection of stored wastes.</p> <p>Coordinate with the local authority for beneficial uses of excess excavated soils or immediately dispose to designated areas. Avoid stockpiling of any excess spoils</p> <p>Suitably dispose of collected materials from drainages, unutilized materials and debris either through filling up of pits/wasteland or at pre-designated disposal locations.</p> <p>All vehicles delivering fine materials to the site and carrying waste debris for disposal shall be covered to avoid spillage of materials.</p> <p>In areas where the visual environment is particularly important or privacy concerns for surrounding buildings exist, the site may require screening. This could be in the form of shade cloth, temporary walls, or other suitable materials prior to the beginning of construction.</p> <p>The site must be kept clean to minimize the visual impact of the site. Manage solid waste according to the following preference hierarchy: reuse, recycling and disposal to designated areas.</p> |
| Biological Environment | | |
| Biodiversity | There are no protected areas, sensitive ecosystems, or wildlife habitats in or near the pilot | <p>Compensatory plantation at 1:3.</p> <p>Minimize the number of trees to be</p> |

| Parameter | Impacts | Mitigation Measures |
|--|---|---|
| | RRNMUs and RCTRC. | cleared particularly large trees. Prohibit workers from cutting of trees for firewood. |
| Socio-economic Environment | | |
| Community health and safety | Road closure is not anticipated. Hauling of construction materials and operation of equipment onsite may cause traffic problems. The impacts are negative but short-term, site-specific within a relatively small area and reversible by mitigation measures. Risk of damage to buried utilities. | <ul style="list-style-type: none"> - Plan transportation routes so that heavy vehicles do not use narrow local roads, except in the immediate vicinity of delivery sites. - Maintain safe passage for vehicles and pedestrians throughout the construction period. - Schedule truck deliveries of construction materials during periods of low traffic volume. - Erect and maintain barricades, including signs, markings, flags and flagmen informing diversions and alternative routes when required. - Notify affected sensitive receptors by providing sign boards informing nature and duration of construction activities and contact numbers for concerns/complaints. |
| Competition in water and electricity use with the host community | During construction, the influx of workers will increase the demand for water and electricity that will compete with the community's requirement. | During construction, diesel generator sets will supply the electricity requirement particularly for welding activities. Since workers are not expected to camp in the project site, the amount of water requirement will be minimal. |
| Worker's health and safety | Occupational health and safety risk due to hazardous working environment that requires repetitive work activities, presence of moving equipment/parts, noise, electrical, welding/hotworks, and working heights. | <p>Comply with requirements of Labour Laws viz. Industrial Employment (Standing Orders) Act 1946, Contract Labour (Regulation and Abolition) Act 1970, Payment of Wages Act 1936 etc. and all applicable laws and standards on workers health and safety (H&S).</p> <p>Produce and implement a site H&S plan which include measures as: (i) excluding the public from worksites; (ii) ensuring all workers are provided with and required to use personal protective equipment (reflectorized vests, footwear, gloves, goggles and masks) at all times.</p> <p>Arrange for readily available first aid unit including an adequate supply of sterilized dressing materials and appliances</p> <p>In case work camps are established, maintain necessary living accommodation and ancillary facilities in functional and hygienic manner in work camps.</p> |
| Historical, Cultural, and Archaeological Characteristics | | |

| Parameter | Impacts | Mitigation Measures |
|--------------------------------|----------------------------------|---|
| Physical and cultural heritage | Risk for chance finds maybe low. | All chance finds of archaeological interest discovered on the site shall be the property of the government. Stop work immediately to allow further investigation if any finds are suspected. |

D. Anticipated Impacts / Mitigation Measures – O&M Phase

33. During the operations and maintenance (O&M) phase, the RCTRCs and RRNMUs will conduct routine building maintenance that will have adverse impact on the environment if not properly guided. Routine repairs will be limited in scale, utilize manual labor, and periodic. O&M will be the responsibility of respective SRRDAs. Impacts during operation includes generation of solid and liquid waste, and consumption of water and electricity. The potential adverse impacts that are associated with O&M activities can be mitigated to acceptable levels as detailed in Table 8.

Table 8: Anticipated Impacts and Mitigation Measures - O&M Phase

| Parameter | Impacts | Mitigation Measures |
|---|---|--|
| A. Physical environment | | |
| Consumption of water and electricity for building operation. Consumption of fuel for vehicle and diesel generator set. Use of refrigerant for airconditioning. Use of paper. Food waste from the canteen. | Use of limited resources like water. Use of electricity generates emissions including GHG from the power generators. Fuel combustion from vehicles and generator set will generate emissions including GHG. Regular maintenance of airconditioning may lead to refrigerant scaping to the environment which have global warming potential. Use of paper will require cutting of trees of processing of waste paper. Use of paper will also generate wastes. | Installation of solar panels to reduce the amount of electricity demanded from the utilities. Use of fuel efficient vehicles and the use of high capacity vehicles to transport training participants. Proper scheduling of vehicle fleet dispatch. Re-use and recycle waste paper. Use of electronic media rather than handouts. Service all airconditioners only to shops that are capable of effectively recovering refrigerants. |

IV. ENVIRONMENTAL MANAGEMENT PLAN

A. Environmental Management Plan

34. The Environmental Management Plan (EMP) is prepared to facilitate effective implementation of recommended mitigations measures with defined roles and responsibility for implementation and monitoring, regulatory compliance requirements, stages of implementation with location, timeframe and costs. The mitigation measures are proposed to eliminate or minimize the identified impact associated with design, construction and operation stages of the project, to acceptable level by adopting the most feasible options.

35. The identified impacts are insignificant and are related to clearing operations of site, setting and operation of construction site, materials sourcing, transportation of materials, air and noise pollution due to construction activities and operation of construction equipment, tree cutting, and shifting of utilities. Appropriate mitigation measures are identified for all construction and operation activities. The nature of the project being similar for both RCTRC and RRNMU, a common EMP has been prepared as detailed at Table 9.

36. The EMP is an integral part of the tender document for both RCTRCs and RRNMUs which shall be available to contractor at the time of bidding.

B. Environmental Monitoring Plan

37. The environmental monitoring program is prepared with the aim to monitor the environmental performance of environmental management plan. The EMOP is planned with the focus on following objectives:

- To assess the effectiveness of mitigation measures proposed
- To assess the change in environmental quality during construction and operation stage with respect to before the project scenario.
- To assess compliance to regulatory requirements
- To monitor the status of corrective action taken in case of deviation from the planned measures or regulatory requirements.

38. The environmental monitoring plan is envisaged to be done once for the identified indicators at following stages of the project

- During Design and Pre-Construction Stage
- During early Construction Stage (Before 25% progress of Physical works)
- During substantial completion Stage (after 75% progress of Physical works)
- After 1st year of operation

39. The respective PIUs with support of the PIC will be responsible for carrying out the environmental monitoring at the respective project locations.

40. A monitoring plan with monitoring indicator and frequency of monitoring is given at table 9.

Table 9: Environmental Management Plan – RCTRCs and RRNMUs

| SI No | Environmental Issues | Duration / Extent | Magnitude | Mitigation Measures | Responsibility |
|-----------|--|-----------------------|-----------------------|--|--|
| 1. | LOCATION IMPACTS | | | | |
| 1.1 | Lost of land for the construction of Rural Connectivity Training and Research Center (RCTRC) Building and Rural Road Network Maintenance Unit (RRNMU) | Permanent | Minor | No land acquisition and resettlement impacts are anticipated as the proposed project shall be restricted to the existing government land available with SRRDA. | PIU / Project Architect/ Contractor |
| 1.2 | Lack of sufficient planning to assure long term sustainability of the improvements | Permanent | Major | The sub-project design shall include adequate provisions for ensuring effective maintenance and protection of the created assets so as to ensure the long term sustainability of the sites. | PIU |
| 1.3 | EMP Training | <i>Not applicable</i> | <i>Not applicable</i> | PIC will provide training training to contractors on site specific EMP highlighting waste management and OHS, GRM and reporting | PIC |
| 1.4 | Site-EMPs | <i>Not applicable</i> | <i>Not applicable</i> | Develop Site-EMPs, responding to all clauses and requirements of this EMP, and including sub-plans such as Spill Management Plan, Waste Management Plan, Temporary Traffic Management Plan, Occupational Health and Safety Plan, Soil Erosion Control Plan, and others. | PIU/Contractor |
| 2. | DESIGN AND PRE-CONSTRUCTION IMPACTS | | | | |
| 2.1 | Increased storm water runoff from alterations of the site's natural drainage patterns due to landscaping, excavation works in the proposed site, construction of parking lots, and addition of paved surfaces. | Permanent | Major | At the time of designing the proposed components, adequate care must be taken to enable efficient drainage of the sites and to maintain natural drainage patterns. The siting of the project components, involving physical construction shall be done to ensure that there is no disruption of natural drainage patterns or to its flow into the nearby river/ stream. | PIU / Project Architect |
| 2.2 | Selection of materials and construction technologies, if not carefully chosen, will adversely impact the aesthetic appeal of the buildings/sites | Permanent | Major | Designs to be worked out in such a manner that exposed steel and concrete structures are avoided. The design brief for all proposed components will strictly conform to the architectural character of the Institution. The usage of heavy construction machinery for construction work shall be in accordance to applicable laws and standards. If any new landscaping elements are planned, it will only be done by utilizing native species. | PIU / Project Architect |
| 2.3 | Integration of energy efficiency and energy conservation programs in design of sub- | Permanent | Moderate | The detailed designs for the sub-project components shall ensure that environmental sustainability principles, including energy efficiency, resource recycling, waste minimization etc are | PIU / Project Architect |

| SI No | Environmental Issues | Duration / Extent | Magnitude | Mitigation Measures | Responsibility |
|-----------|--|-------------------|-----------|---|---------------------------|
| | project components | | | considered together as an integrated approach, and the designs are accordingly worked out. All the electrical and mechanical equipments used in the construction works shall be energy efficient and ISO certified as per BOQ provisions | |
| 3. | PRE-CONSTRUCTION ACTIVITIES BY CONTRACTOR | | | | |
| 3.1 | Construction site – Location, Selection, Design and Layout | Temporary | Moderate | Construction site layout will be submitted by the Contractor no later than 30 days from the start of construction for approval of the PIU. The layout will illustrate the location of sanitation facilities, storage areas, gates, temporary lodging, water supply, diesel genset, canteen, first aid, health care, and day crèche facilities among others. | PIU/Contractor PIC/TSC |
| 3.2 | Drinking water availability and water arrangement | Temporary | Severe | The Contractor will be responsible for the arrangement of water in every workplace at suitable and easily accessible place for the whole construction period. Sufficient supply of potable water is to be provided and maintained. If the drinking water is obtained from an intermittent public water supply then, storage tanks will be provided. | PIU/Contractor PIC/TSC |
| 3.3 | Identification of disposal sites | Permanent | Major | Location of disposal sites will be finalized in consultation with local authority and confirm that: disposal of the material does not impact the natural drainage courses or surface water bodies or low lying areas and that no endangered / rare flora is impacted by such materials | PIU/Contractor PIC/TSC |
| 3.4 | Site clearance activities including delineation of construction areas | Temporary | Moderate | Commencements of site clearance activities shall be undertaken after obtaining necessary permissions from PIU to minimize environmental impacts. The area utilized for construction and camp activities shall be restored to their former conditions after project completion. | PIU/Contractor PIC/TSC |
| 4. | CONSTRUCTION IMPACTS | | | | |
| 4.1 | Improper stockpiling of construction materials cause impacts starting from obstruction of drainage, disturbance/ safety hazard to local residents etc. | Permanent | Moderate | Adequate safety precautions will be ensured during transportation of construction materials including borrow materials to the construction site. Vehicles transporting the material will be covered to prevent spillage. Operations to be undertaken by the contractor as per the direction and satisfaction of the Site Engineer. | Contractor/PIC |
| 4.2 | Stripping, stocking and preservation of top soil | Permanent | Moderate | The topsoil resulting from those areas of cutting and from areas where it is planned to be permanently covered, will be stripped to a specified depth no more than 150mm and temporarily stored within the project site for re-use in landscaping. The stockpiles | Contractor PIC/TSC |

| SI No | Environmental Issues | Duration / Extent | Magnitude | Mitigation Measures | Responsibility |
|-------|--|-------------------|-----------|---|-----------------------|
| | | | | will be covered with gunny bags or tarpaulin. | |
| 4.3 | Soil and water pollution due to storage of fuels, lubricants and construction wastes | Temporary | Moderate | Fuel and lubricant storage areas shall be designed in such a way that oil may not contaminate soil or water. The floor of storage area shall be protected by impermeable membrane and covered by roof so that it will not be affected by rain. Oil pumps should be used to take out the oil from the container and no oil spillage shall take place. All the construction waste should be disposed off properly at end of the day so that it may not create nuisance at site. Soil and water pollution parameters shall be monitored as the monitoring plan. | Contractor PIC/TSC |
| 4.4 | Siltation of water bodies due to spillage of construction wastes | Temporary | Moderate | Silt fencing to be provided at construction sites during rain period to prevent sediments from the construction site to enter into the river/ drainage channels. The number of units of silt fencing to be installed is to be decided by the Engineer. Areas of bare soil will be kept to a practical minimum so as to reduce silt runoff. Extraneous construction wastes will be transported to the pre-identified disposal site for safe disposal. | Contractor PIC/TSC |
| 4.5 | Emission from Construction Vehicles, Equipment and Machinery | Temporary | Moderate | The emission standards promulgated under the Environmental Protection Act will be strictly adhered to. All vehicles, equipment and machinery used for construction will conform to the relevant Standard. All vehicles, equipments and machinery used for construction will be regularly maintained to ensure that pollution emission levels comply with the relevant requirements. All the construction vehicles shall have Pollution Under Control (PUC) certificates to check air pollution. | Contractor PIC/TSC |
| 4.6 | Generation of Dust | Temporary | Moderate | The contractor will take every precaution to reduce the levels of dust at construction site and all haul roads to the satisfaction of the Engineer. All earth works are to be protected / covered in a manner acceptable to the satisfaction of the engineer in order to minimize dust generation. Clearance will be effected immediately by manual sweeping and removal of debris, or as directed by the Engineer; all exposed material piles, unpaved access roads, and exposed soil that are prone to wind erosion shall be watered using necessary equipment or the windward section of the pile covered. Construction site shall regularly be wetted by sprinkling of water when it is dusty especially during summer season and when it is windy. | Contractor PIC/TSC |
| 4.7 | Noise from construction activities | Temporary | Moderate | Maintenance of vehicles, equipment and machinery will be | Contractor |

| SI No | Environmental Issues | Duration / Extent | Magnitude | Mitigation Measures | Responsibility |
|-------|--|-------------------|-----------|--|---------------------------|
| | and equipment | | | <p>regular and shall be to the satisfaction of the Engineer, in order to keep noise from these at a minimum. All vehicles and equipment used for construction will be fitted with exhaust silencers. Noise limits for construction equipments used in this project (measured at one metre from the edge of the equipment in free field) such as compactors, rollers, front loaders, concrete mixers, cranes (movable), vibrators and saws will not exceed 75 dB (A). Notwithstanding any other conditions of contract, noise level from any item of plant(s) will comply with the noise standards specified by CPCB.</p> <p>The contractor will provide noise barriers to confine noise and insulate nearby offices, commercial, and other community structures.</p> <p>Workers will be provided with necessary PPEs to protect them from noisy environment.</p> | PIC/TSC |
| 4.8 | Material Handling at Site | Temporary | Minor | All workers employed on mixing asphaltic material, cement, lime mortars, concrete etc., will be provided with protective footwear and protective goggles. Workers, who are engaged in welding works, will be provided with welder's protective eye-shields. Workers engaged in stone breaking activities will be provided with protective goggles and clothing and will be seated at sufficiently safe intervals. | Contractor PIC/TSC |
| 4.9 | Disposal of Construction Waste / Debris / Cut Material | Temporary | Moderate | The waste generated will be reused in the construction activities, either as a fill material or otherwise, based on its suitability would be reused to the maximum extent possible. Safe disposal of the extraneous material will be ensured in the pre-identified disposal locations. In no case, no construction waste will be disposed around the sub-project locations indiscriminately. | Contractor PIC/TSC |
| 4.10 | Safety Measures During Construction | Temporary | moderate | Personal Protective Equipment (PPE's) shall be provided for workers and provision of adequate safety measures for workers during handling of materials at site will be taken up. The contractor has to comply with all regulations regarding safe scaffolding, ladders, working platforms, gangway, stairwells, excavations, trenches and safe means of entry and egress. | Contractor PIC/TSC |
| 4.11 | HIV/AIDS Awareness | Temporary | Major | The Contractor through the PIU will link with state health programs on HIV/AIDS and other communicable diseases | PIU/Contractor PIC/TSC |

| SI No | Environmental Issues | Duration / Extent | Magnitude | Mitigation Measures | Responsibility |
|-----------|---|-------------------|-----------|--|---------------------------|
| | | | | awareness. All the construction labours will be provided orientation for awareness on HIV/AIDs and other sexually transmitted diseases at the time of deployment. | |
| 4.12 | Clearing of Construction Camps & Restoration | Temporary | Major | Contractor has to prepare site restoration plans for obtaining approval by the Engineer. The plan has to be implemented by the contractor prior to demobilization. On completion of the works, all temporary structures shall be cleared away, all rubbish shall be burnt, excreta or other disposal pits or trenches shall be completely filled in and effectively sealed off and the site left clean and tidy, at the Contractor's expense and it shall be up to the entire satisfaction of the Engineer. | PIU/Contractor PIC/TSC |
| 4.13 | Trees/Vegetation | Temporary | Major | Preserve existing vegetation where no construction activity is planned; Remove trees or shrubs only as a last resort if they impinge directly on permanent structures; Properly re-vegetate disturbed areas after completion of civil works; | PIU/Contractor PIC/TSC |
| 4.14 | Labor standards and rights | Temporary | Major | Contractors shall (i) provide equal pay for equal work, regardless of gender or ethnicity; (ii) provide the timely payment of wages; (iii) use local unskilled labor to the maximum extent possible, (iv) comply with core labor standards and the applicable labor laws and regulations, including stipulations related to employment, e.g. health, safety, welfare and the workers' rights, and anti-trafficking laws; and (v) not employ child labor. Contractors shall maintain records of labor employment, including the name, ethnicity, age, gender, domicile, working time, and the payment of wages. Women labours shall be encouraged in construction activities to the extent possible. | PIU/Contractor PIC/TSC |
| 5. | O&M IMPACTS | | | | |
| 5.1 | Consumption of water and electricity for building operation. Consumption of fuel for vehicle and diesel generator set. Use of refrigerant for airconditioning. Use of paper. Food waste from the canteen. | Long term | Minor | Installation of solar panels to reduce the amount of electricity demanded from the utilities. Use of fuel efficient vehicles and the use of high capacity vehicles to transport training participants. Proper scheduling of vehicle fleet dispatch. Re-use and recycle waste paper. Use of electronic media rather than handouts. Service all airconditioners only to shops that are capable of effectively recovering refrigerants | PIU |

Table 10: Environmental Monitoring Plan

| Project Phase | Mitigation | Compliance Inspection Activities | Location | Frequency | Responsibility | Budget |
|-------------------------|--|---|-----------------|--|--|---------------------------|
| Pre-construction | Compensatory plantation of 1:3 to be integrated in the general landscaping | Identification of type of trees and number to be procured, procurement of seedlings or trees, time of delivery on-site | On-site | Once. Approval of number and types approved by the architect | Contractor and architect | Part of construction cost |
| | Development of site-specific EMP | Submission by the contractor and approval by the PIC | PIU-Office | At least 30 days prior to commencement of work | Contractor and PIC | Part of construction cost |
| | Conduct of on-site EMP Training | Actual conduct, attendance sheet, Occupational health as safety topics in a | On-site | At least 15 days after approval of EMP and commencement of work | Contractor will organize and PIC will conduct training | Part of construction cost |
| | Energy efficiency ratings of all equipment and electrical works | Certificates, seals of approvals, and similar proof showing energy efficiency of all electrical equipment to be installed | On-site | Submission of documentation of energy efficiencies to be collected by the Contractor and reviewed by the PIC and Architect | Contractor, PIC/Architect | Part of construction cost |
| | Water supply arrangement, disposal for debris, ground staking of construction site | Clearances, permits, approvals to be submitted prior to construction | Posted on-site | Prior to commencement of construction | Contractor and PIC | Part of construction cost |
| Construction | Transportation arrangement, ground staking of temporary storage areas including signages | Submission of transport routes, on-site inspection of storage areas | On-site | Monthly during the construction phase | Contractor and PIC | Part of construction cost |
| | Stripping and storage of 150mm topsoil | Site inspection of stripped and stored materials | On-site | During site clearing and excavation | Contractor and PIC | Part of construction cost |
| | Installation of proper fuel and lubricant storage area | Site inspection | On-site | Within 30 days after commencement of civil works | Contractor and PIC | Part of construction cost |
| | Installation of silt-fence or interceptor drains around the project site to control silted runoff from flowing out | Site inspection | On-site | Within 30 days after civil works or 15 days before the on-set of monsoon | Contractor and PIC | Part of construction |
| | PUC for all vehicles | Submission of PUC certificates to PIC prior to use of vehicle | On-site | Annual | Contractor and PIC | Part of construction cost |

| Project Phase | Mitigation | Compliance Inspection Activities | Location | Frequency | Responsibility | Budget |
|------------------|--|--|--------------------------------|--|--------------------|---------------------------------|
| | Dust control – regular sprinkling of all exposed soils including storage piles | Visual inspection of dust, dust settlement on surrounding structures and vegetation, complaints | On-site | Daily | Contractor and PIC | Part of construction cost |
| | Noise control – consultation with the surrounding communities/offices in the schedule of works that will generate noise, provision of noise buffers around noise generating equipment and activities | Spot noise monitoring using applicable cellphone apps or noise monitoring equipment on sensitive areas. Complaints. Regular consultations with surround communities/offices. | On-site and surround community | Daily during when noise generating activities or equipment are operating | Contractor and PIC | Part of construction cost |
| | Occupational health and safety, materials handling, HIV/AIDs awareness | Spot and periodic inspection. Linkage with state health programs | Onsite | Spot and weekly | PIC | Part of PIC contract |
| | Proper disposal and solid and liquid waste. Recycling and reuse of materials | Spot checking and periodic inspection | On-site | Spot and monthly | Contractor and PIC | Part of construction cost |
| Operation | Energy efficiency in building operation, waste minimization, recycling and re-use. Environment friendly maintenance of airconditioners. | Energy and waste audits | On-site | Annual | PIU | Part of annual operating budget |

V. INSTITUTIONAL ARRANGEMENTS AND GRIEVANCE REDRESS MECHANISM

A. Institutional Arrangements and Responsibilities

41. NRRDA constituted by MORD is the nodal agency for the implementation of PMGSY including environmental and social safeguards. SRRDA is the state level agency responsible for implementation of PMGSY program in the state. Each SRRDA has set up district level project implementation units (PIUs). NRRDA also appoints Technical Support Consultant (TSC) to provide technical support for capacity building of the SRRDA/PIUs, facilitating environmental and social safeguard compliance monitoring and due diligence. SRRDA appoints PIC (project implementation consultant) for supervision of construction work. PIC also helps PIUs in monitoring the EMP. NRRDA is also responsible to coordinate with SRRDA and ensure compliance to ADB safeguard requirements.

42. The implementation arrangement to implement the RCTRC and RRNMUs will be the same as the PMGSY roads as follow:

43. MORD with the support of the technical support consultant is responsible for: i) monitoring implementation of the EMP for the RCTRC and RRNMUs, ii) under taking necessary due diligence, iii) ensure ADB is given access to undertake environmental due diligence, if and when needed, and iv) undertake random monitoring of the implementation of the EMP.

44. The SRRDAs will: (i) nominate the sites for the RRNMU and RCTRC which will be subjected to rapid environmental assessment (REA) by the PIC with the assistance of the TSC, ii) mobilize the architect to prepare the DPRs to include necessary drawings and bill of quantities, iii) ensure that the DPRs for RCTRC and RRNMU include completed REA checklist environmental management plans; (ii) Ensure the ECOP checklists EMP are reviewed by the environmental officer of the concerned SRRDA; (iii) ensure that all required statutory environmental clearances are obtained and the conditions noted in the clearances are implemented; (iv) Ensure that the subproject specific EMPs and respective budget are included in the bidding documents; (iv) undertake routine monitoring of the implementation of the EMP and prepare monitoring reports at least once a year; and (vii) with the support of technical support consultants prepare satisfactory environmental due diligence reports; and the PIU with the assistance of the PIC will: (i) complete the REA checklist for all RCTRC and RRNMU and specific EMPs, ii) Obtain necessary clearance prior to commencement of civil works, (v) through the project implementation consultants, conduct monitoring of all subprojects and prepare pre-, during and post-construction monitoring checklists.

VI. PUBLIC CONSULTATION AND INFORMATION DISCLOSURE

A. Consultation and Information Disclosure

45. During the preparation of REA checklist and Detailed Project Report (DPR), respective PIU has to ensure consultation with the occupants of the structures at site including departmental staff and address their concerns. As the proposed project are located either inside existing state level training facility complexes or at such locations that are identified as institutional areas belonging mostly to public sector, the subprojects will not have any direct interference with activities of local people/community. However, disturbances to the local community what so ever minimal due to movement of construction materials, equipments and machinery, waste disposal, noise, dust pollution etc. needs be paid proper attention.

46. All environmental assessment documents are subject to ADB's Public Communication Policy (2011) and will be made available to the public, upon request. The SRRDAs are responsible for ensuring that all environmental checklist documentation, including the environmental due diligence and monitoring reports, are properly and systematically kept as part of the Investment Program specific records. Besides ADB, MORD should also disclose state specific RCTRC & pilot RRNMU IEE reports on its website.

Grievance Redress Mechanism

B. Grievance Redress Mechanism

47. Responsibility of day to day supervision of works will be directly by the respective PIUs. Any grievance emerging either due to project design or executin of works by the contractor involving movement of contractors vehicles, transportation of materials and debries, stockpiling of materials etc. will be addressed at the PIU level. The GRC will be headed by the Executive Engineer of the executing PIU where there will be other PIU officials, PIC and contractor's representative to address the emerged issues.

48. Any grievance that couldnot be resolved at the PIU level GRC will be refered to the CE, SRRDA for mitigation.

VII. CONCLUSIONS

A. Conclusions

49. The findings of Environment Assessment of RCTRC and pilot RRNMU buildings indicate that impacts are unlikely to cause any significant environmental impacts. Most of the impacts are likely to occur during construction stage, are temporary in nature, and can be mitigated with minor to negligible residual impacts. Operation phase impacts are related to proper sanitation system and waste disposal.

50. The sites/designs were selected based on availability of government land in the urban centres near the PIUs to avoid private land acquisition and related resettlement issues, and environment concerns relating to sensitive habitats. Accordingly, none of the proposed sites are near protected or sensitive areas or of any historical or archeologically protected areas. However, there may be the need for cutting of few trees that can not be avoided by design changes.

51. Adequate engineering measures are proposed for seismic zone, slope stabilisation, erosion control and drainage of water/sewage.

52. Considering the proposed sites are not environmentally sensitivity and the scale and scope of work are limited, the project is categorized as category B as per ADB Safeguard Policy Statement 2009.

53. No categorization is made under environmental legislation of India, since these small areas do not require any environmental clearance in accordance to Indian Environmental (Protection) Act and Rules, 1986 amended till date. However, clearance from Forest Department will be required for cutting of trees wherever necessary.

54. The impacts identified are mostly related to land clearing, cutting of trees, shifting of utilities, establishment of construction camp or material storage areas, occupational health and safety, dust and noise as the site is located in an institutional or commercial zoned areas, disruption of utilities, generation of construction debris, localized flooding, and transportation of material. All identified impacts are either eliminated or minimized through design consideration and suitable mitigative measures.

55. Environmental Management plan covering all stages of the construction (design, construction and operation) has been prepared with defined responsibility for its implementation. Environmental Monitoring plan is also prepared to ensure effective implementation of EMP.

56. NRRDA/SRRDAs have defined institutional setup with specified responsibility for environmental management. Existing capacity of the SRRDAs and Project Implementation Units (PIUs) for environmental screening and implementing environmental management measures need substantial strengthening.

Appendix 1: Rapid Environmental Assessment (REA) Checklist

PROPOSED RCTRC AT GUWAHATI - ASSAM

Instructions:

- (i) The project team completes this checklist to support the environmental classification of a project. It is to be attached to the environmental categorization form and submitted to the Environment and Safeguards Division (RSES) for endorsement by Director, RSES and for approval by the Chief Compliance Officer.
- (ii) This checklist focuses on environmental issues and concerns. To ensure that social dimensions are adequately considered, refer also to ADB's (a) checklists on involuntary resettlement and Indigenous Peoples; (b) poverty reduction handbook; (c) staff guide to consultation and participation; and (d) gender checklists.
- (iii) Answer the questions assuming the "without mitigation" case. The purpose is to identify potential impacts. Use the "remarks" section to discuss any anticipated mitigation measures.

Country/Project Title: India/Rural Connectivity Investment Programme

Sector Division: Transportation and Communications

| Screening Questions | Yes | No | Remarks |
|--|-----|----|---------|
| A. PROJECT SITING | | | |
| Is the Project Area Adjacent to or Within any of the Following Areas: | | | |
| ▪ Underground Utilities | | √ | |
| ▪ Cultural Heritage Site | | √ | |
| ▪ Protected Area | | √ | |
| ▪ Wetland | | √ | |
| ▪ Mangrove | | √ | |
| ▪ Estuarine | | √ | |
| ▪ Buffer Zone Of Protected Area | | √ | |
| ▪ Special Area For Protecting Biodiversity | | √ | |
| ▪ Bay | | √ | |
| B. POTENTIAL ENVIRONMENTAL IMPACTS | | | |
| Will the Project cause | | | |
| ▪ Encroachment on historical/cultural areas? | | √ | |
| ▪ Encroachment on precious ecology (e.g. sensitive or protected areas)? | | √ | |
| ▪ Impacts on the sustainability of associated sanitation and solid waste disposal systems? | | √ | |
| ▪ Dislocation or involuntary resettlement of people? | | √ | |
| ▪ Disproportionate impacts on the poor, women and children, Indigenous Peoples or other vulnerable groups? | | √ | |
| ▪ Accident risks associated with increased vehicular traffic, leading to loss of life? | | √ | |

| Screening Questions | Yes | No | Remarks |
|---|-----|----|--|
| <ul style="list-style-type: none"> ▪ Increased noise and air pollution resulting from increased traffic volume? | | √ | |
| <ul style="list-style-type: none"> ▪ Occupational and community health and safety risks? | √ | | During the project construction safety risk may arise. However, by adopting the mitigation measures proposed in the EMP, it shall be mitigated |
| <ul style="list-style-type: none"> ▪ Risks and vulnerabilities related to occupational health and safety due to physical, chemical, biological, and radiological hazards during project construction and operation? | √ | | General risks due to emulsion paints and gases used in welding machines |
| <ul style="list-style-type: none"> ▪ Generation of dust in sensitive areas during construction? | | √ | There are no sensitive areas in the vicinity of the sub project area. |
| <ul style="list-style-type: none"> ▪ Requirements for disposal of fill, excavation, and/or spoil materials? | √ | | Since two old staff quarters would be dismantled to accommodate the proposed design of the building, disposal of Salvage/ spoil materials will be generated, which can be used as fill material for the construction site. In case of excess quantity debris will be disposed off with due care as specified in the EMP. |
| <ul style="list-style-type: none"> ▪ Noise and vibration due to blasting and other civil works? | √ | | No Blasting will be required. Noise risks will be minimised as specified in the EMP. |
| <ul style="list-style-type: none"> ▪ Long-term impacts on groundwater flows as result of needing to drain the project site prior to construction? | | √ | |
| <ul style="list-style-type: none"> ▪ Long-term impacts on local hydrology as a result of building hard surfaces in or near the building? | | √ | |
| <ul style="list-style-type: none"> ▪ Large population influx during project construction and operation that causes increased burden on social infrastructure and services (such as water supply and sanitation systems)? | | √ | The proposed project will require laborers during the project construction for a period of about 2 years only. Mostly local labourers would be engaged on intermediate basis, large population influx is not anticipated. |
| <ul style="list-style-type: none"> ▪ Social conflicts if workers from other regions or countries are hired? | | √ | Local laborers shall be employed to the extent possible at the contractor's responsibility. |
| <ul style="list-style-type: none"> ▪ Risks to community safety caused by fire, electric shock, or failure of the buildings safety features during operation? | | √ | |
| <ul style="list-style-type: none"> ▪ Risks to community health and safety caused by management and disposal of waste? | | √ | |
| <ul style="list-style-type: none"> ▪ Community safety risks due to both accidental and natural hazards, especially where the structural elements or components of the project are accessible to members of the affected community or where their failure could result in injury to the community throughout project construction, operation and decommissioning? | | √ | The project area is protected by compound wall from the direct access of the public. |

Checklist for Preliminary Climate Risk Screening

Country/Project Title: India : Rural Connectivity Investment Project
Sector : Transport
Subsector: Road Transport
Division/Department: South Asia Transport and Communications Department

| Screening Questions | | Score | Remarks ⁴ |
|---------------------------------------|--|-------|----------------------|
| Location and Design of project | Is siting and/or routing of the project (or its components) likely to be affected by climate conditions including extreme weather related events such as floods, droughts, storms, landslides? | 0 | |
| | Would the project design (e.g. the clearance for bridges) need to consider any hydro-meteorological parameters (e.g., sea-level, peak river flow, reliable water level, peak wind speed etc)? | 0 | |
| Materials and Maintenance | Would weather, current and likely future climate conditions (e.g. prevailing humidity level, temperature contrast between hot summer days and cold winter days, exposure to wind and humidity hydro-meteorological parameters likely affect the selection of project inputs over the life of project outputs (e.g. construction material)? | 0 | |
| | Would weather, current and likely future climate conditions, and related extreme events likely affect the maintenance (scheduling and cost) of project output(s)? | 0 | |
| Performance of project outputs | Would weather/climate conditions and related extreme events likely affect the performance (e.g. annual power production) of project output(s) (e.g. hydro-power generation facilities) throughout their design life time? | 0 | |

Options for answers and corresponding score are provided below:

| Response | Score |
|-------------|-------|
| Not Likely | 0 |
| Likely | 1 |
| Very Likely | 2 |

Responses when added that provide a score of 0 will be considered low risk project. If adding all responses will result to a score of 1-4 and that no score of 2 was given to any single response, the project will be assigned a medium risk category. A total score of 5 or more (which include providing a score of 1 in all responses) or a 2 in any single response, will be categorized as high risk project.

Result of Initial Screening (Low, Medium, High): Low

Other Comments : The proposed project is to provide infrastructure/building for Research and Training. The proposed construction, operation and maintenance of the project do not have any impact on the climatic condition of the area.

Prepared by: Public Works Department, Assam

⁴ If possible, provide details on the sensitivity of project components to climate conditions, such as how climate parameters are considered in design standards for infrastructure components, how changes in key climate parameters and sea level might affect the siting/routing of project, the selection of construction material and/or scheduling, performances and/or the maintenance cost/scheduling of project outputs.

**Rapid Environmental Assessment (REA) Checklist
PROPOSED RRNMU AT TEZPUR - ASSAM**

Instructions:

- (i) The project team completes this checklist to support the environmental classification of a project. It is to be attached to the environmental categorization form and submitted to the Environment and Safeguards Division (RSES) for endorsement by Director, RSES and for approval by the Chief Compliance Officer.
- (ii) This checklist focuses on environmental issues and concerns. To ensure that social dimensions are adequately considered, refer also to ADB's (a) checklists on involuntary resettlement and Indigenous Peoples; (b) poverty reduction handbook; (c) staff guide to consultation and participation; and (d) gender checklists.
- (iii) Answer the questions assuming the "without mitigation" case. The purpose is to identify potential impacts. Use the "remarks" section to discuss any anticipated mitigation measures.

Country/Project Title: India/Rural Connectivity Investment Programme

Sector Division: Transportation and Communications

| Screening Questions | Yes | No | Remarks |
|--|-----|----|---|
| A. PROJECT SITING | | | |
| Is the Project Area Adjacent to or Within any of the Following Areas: | | | |
| ▪ Underground Utilities | | √ | |
| ▪ Cultural Heritage Site | | √ | |
| ▪ Protected Area | | √ | |
| ▪ Wetland | | √ | |
| ▪ Mangrove | | √ | |
| ▪ Estuarine | | √ | |
| ▪ Buffer Zone Of Protected Area | | √ | |
| ▪ Special Area For Protecting Biodiversity | | √ | |
| ▪ Bay | | √ | |
| B. POTENTIAL ENVIRONMENTAL IMPACTS | | | |
| Will the Project cause | | | |
| ▪ Encroachment on historical/cultural areas? | | √ | The sub project is proposed to be constructed on PWD owned land |
| ▪ Encroachment on precious ecology (e.g. sensitive or protected areas)? | | √ | There are no protected area in the vicinity of the sub project |
| ▪ Impacts on the sustainability of associated sanitation and solid waste disposal systems? | | √ | |
| ▪ Dislocation or involuntary resettlement of people? | | √ | |
| ▪ Disproportionate impacts on the poor, women and children, Indigenous Peoples or other vulnerable groups? | | √ | |
| ▪ Accident risks associated with increased vehicular traffic, leading to loss of life? | | √ | |

| Screening Questions | Yes | No | Remarks |
|---|-----|----|--|
| <ul style="list-style-type: none"> ▪ Increased noise and air pollution resulting from increased traffic volume? | | √ | |
| <ul style="list-style-type: none"> ▪ Occupational and community health and safety risks? | √ | | During the project construction safety risk may arise. However, by adopting the mitigation measures proposed in the EMP, it shall be mitigated |
| <ul style="list-style-type: none"> ▪ Risks and vulnerabilities related to occupational health and safety due to physical, chemical, biological, and radiological hazards during project construction and operation? | √ | | General risks due to emulsion paints and gases used in welding machines |
| <ul style="list-style-type: none"> ▪ Generation of dust in sensitive areas during construction? | | √ | There are no sensitive areas in the vicinity of the sub project area. |
| <ul style="list-style-type: none"> ▪ Requirements for disposal of fill, excavation, and/or spoil materials? | √ | | Since the existing Assam Type staff quarters would be dismantled to accommodate the proposed design of the RRNMU building, generation of salvage/spoil materials is anticipated, which can be used as fill material for the construction site. In case of excess quantity debris will be disposed off with due care as specified in the EMP. |
| <ul style="list-style-type: none"> ▪ Noise and vibration due to blasting and other civil works? | √ | | No blasting will be required. Noise risks will be minimised as specified in the EMP. |
| <ul style="list-style-type: none"> ▪ Long-term impacts on groundwater flows as result of needing to drain the project site prior to construction? | | √ | |
| <ul style="list-style-type: none"> ▪ Long-term impacts on local hydrology as a result of building hard surfaces in or near the building? | | √ | |
| <ul style="list-style-type: none"> ▪ Large population influx during project construction and operation that causes increased burden on social infrastructure and services (such as water supply and sanitation systems)? | | √ | The proposed project will require laborers during the project construction for a period of about 2 years only. Mostly local labourers would be engaged on intermediate basis, large population influx is not anticipated. |
| <ul style="list-style-type: none"> ▪ Social conflicts if workers from other regions or countries are hired? | | √ | Local laborers shall be employed to the extent possible at the contractor's responsibility. |
| <ul style="list-style-type: none"> ▪ Risks to community safety caused by fire, electric shock, or failure of the buildings safety features during operation? | | √ | |
| <ul style="list-style-type: none"> ▪ Risks to community health and safety caused by management and disposal of waste? | | √ | |
| <ul style="list-style-type: none"> ▪ Community safety risks due to both accidental and natural hazards, especially where the structural elements or components of the project are accessible to members of the affected community or where their failure could result in injury to the community throughout project construction, operation and decommissioning? | | √ | The proposed project area would be access controlled by barricading it. |

Checklist for Preliminary Climate Risk Screening

Country/Project Title: India : Rural Connectivity Investment Project
Sector : Transport
Subsector: Road Transport
Division/Department:

| Screening Questions | | Score | Remarks ⁵ |
|---------------------------------------|--|-------|----------------------|
| Location and Design of project | Is siting and/or routing of the project (or its components) likely to be affected by climate conditions including extreme weather related events such as floods, droughts, storms, landslides? | 0 | |
| | Would the project design (e.g. the clearance for bridges) need to consider any hydro-meteorological parameters (e.g., sea-level, peak river flow, reliable water level, peak wind speed etc)? | 0 | |
| Materials and Maintenance | Would weather, current and likely future climate conditions (e.g. prevailing humidity level, temperature contrast between hot summer days and cold winter days, exposure to wind and humidity hydro-meteorological parameters likely affect the selection of project inputs over the life of project outputs (e.g. construction material)? | 0 | |
| | Would weather, current and likely future climate conditions, and related extreme events likely affect the maintenance (scheduling and cost) of project output(s)? | 0 | |
| Performance of project outputs | Would weather/climate conditions and related extreme events likely affect the performance (e.g. annual power production) of project output(s) (e.g. hydro-power generation facilities) throughout their design life time? | 0 | |

Options for answers and corresponding score are provided below:

| Response | Score |
|-------------|-------|
| Not Likely | 0 |
| Likely | 1 |
| Very Likely | 2 |

Responses when added that provide a score of 0 will be considered low risk project. If adding all responses will result to a score of 1-4 and that no score of 2 was given to any single response, the project will be assigned a medium risk category. A total score of 5 or more (which include providing a score of 1 in all responses) or a 2 in any single response, will be categorized as high risk project.

Result of Initial Screening (Low, Medium, High): Low

Other Comments : The proposed project is to provide infrastructure/building for Research and Training. The proposed construction, operation and maintenance of the project do not have any impact on the climatic condition of the area.

Prepared by: Public Works Department, Assam

⁵ If possible, provide details on the sensitivity of project components to climate conditions, such as how climate parameters are considered in design standards for infrastructure components, how changes in key climate parameters and sea level might affect the siting/routing of project, the selection of construction material and/or scheduling, performances and/or the maintenance cost/scheduling of project outputs.

Rapid Environmental Assessment (REA) Checklist

PROPOSED RCTRC AT NIMORA - CHHATTISGARH

Instructions:

- (i) The project team completes this checklist to support the environmental classification of a project. It is to be attached to the environmental categorization form and submitted to the Environment and Safeguards Division (RSES) for endorsement by Director, RSES and for approval by the Chief Compliance Officer.
- (ii) This checklist focuses on environmental issues and concerns. To ensure that social dimensions are adequately considered, refer also to ADB's (a) checklists on involuntary resettlement and Indigenous Peoples; (b) poverty reduction handbook; (c) staff guide to consultation and participation; and (d) gender checklists.
- (iii) Answer the questions assuming the "without mitigation" case. The purpose is to identify potential impacts. Use the "remarks" section to discuss any anticipated mitigation measures.

Country/Project Title: India/Rural Connectivity Investment Programme

Sector Division: Transportation and Communications

| Screening Questions | Yes | No | Remarks |
|--|-----|----|---|
| A. PROJECT SITING | | | |
| Is the Project Area Adjacent to or Within any of the Following Areas: | | | |
| ▪ Underground Utilities | | √ | |
| ▪ Cultural Heritage Site | | √ | |
| ▪ Protected Area | | √ | |
| ▪ Wetland | | √ | |
| ▪ Mangrove | | √ | |
| ▪ Estuarine | | √ | |
| ▪ Buffer Zone Of Protected Area | | √ | |
| ▪ Special Area For Protecting Biodiversity | | √ | |
| ▪ Bay | | √ | |
| B. POTENTIAL ENVIRONMENTAL IMPACTS | | | |
| Will the Project cause | | | |
| ▪ Encroachment on historical/cultural areas? | | √ | The project is proposed to be constructed within the existing SIRD campus owned by the Panchayat & Rural Development Deptt., Govt. of Chhattisgarh. |
| ▪ Encroachment on precious ecology (e.g. sensitive or protected areas)? | | √ | |
| ▪ Impacts on the sustainability of associated sanitation and solid waste disposal systems? | | √ | |
| ▪ Dislocation or involuntary resettlement of people? | | √ | |
| ▪ Disproportionate impacts on the poor, women and children, Indigenous Peoples or other vulnerable groups? | | √ | |

| Screening Questions | Yes | No | Remarks |
|---|-----|----|---|
| ▪ Accident risks associated with increased vehicular traffic, leading to loss of life? | | √ | |
| ▪ Increased noise and air pollution resulting from increased traffic volume? | | √ | |
| ▪ Occupational and community health and safety risks? | √ | | During the project construction safety risk may arise. However, by adopting the mitigation measures proposed in the EMP, it shall be mitigated |
| ▪ Risks and vulnerabilities related to occupational health and safety due to physical, chemical, biological, and radiological hazards during project construction and operation? | √ | | General risks due to emulsion paints and gases used in welding machines |
| ▪ Generation of dust in sensitive areas during construction? | | √ | There are no sensitive areas in the vicinity of the sub project area. |
| ▪ Requirements for disposal of fill, excavation, and/or spoil materials? | √ | | |
| ▪ Noise and vibration due to blasting and other civil works? | √ | | No blasting will be required. Noise risks will be minimised as specified in the EMP. |
| ▪ Long-term impacts on groundwater flows as result of needing to drain the project site prior to construction? | | √ | |
| ▪ Long-term impacts on local hydrology as a result of building hard surfaces in or near the building? | | √ | |
| ▪ Large population influx during project construction and operation that causes increased burden on social infrastructure and services (such as water supply and sanitation systems)? | | √ | The proposed project will require laborers during the project construction for a period of about 2 years only. Mostly local labourers would be engaged on intermediate basis, large population influx is not anticipated. |
| ▪ Social conflicts if workers from other regions or countries are hired? | | √ | Local laborers shall be employed to the extent possible at the contractor's responsibility. |
| ▪ Risks to community safety caused by fire, electric shock, or failure of the buildings safety features during operation? | | √ | |
| ▪ Risks to community health and safety caused by management and disposal of waste? | | √ | |
| ▪ Community safety risks due to both accidental and natural hazards, especially where the structural elements or components of the project are accessible to members of the affected community or where their failure could result in injury to the community throughout project construction, operation and decommissioning? | | √ | The project area is protected by compound wall of SIRD complex from the direct access of the public. |

Checklist for Preliminary Climate Risk Screening

Country/Project Title: India : Rural Connectivity Investment Project

Sector : Transport

Subsector: Road Transport

Division/Department:

| Screening Questions | | Score | Remarks ⁶ |
|---------------------------------------|--|-------|----------------------|
| Location and Design of project | Is siting and/or routing of the project (or its components) likely to be affected by climate conditions including extreme weather related events such as floods, droughts, storms, landslides? | 0 | |
| | Would the project design (e.g. the clearance for bridges) need to consider any hydro-meteorological parameters (e.g., sea-level, peak river flow, reliable water level, peak wind speed etc)? | 0 | |
| Materials and Maintenance | Would weather, current and likely future climate conditions (e.g. prevailing humidity level, temperature contrast between hot summer days and cold winter days, exposure to wind and humidity hydro-meteorological parameters likely affect the selection of project inputs over the life of project outputs (e.g. construction material)? | 0 | |
| | Would weather, current and likely future climate conditions, and related extreme events likely affect the maintenance (scheduling and cost) of project output(s)? | 0 | |
| Performance of project outputs | Would weather/climate conditions and related extreme events likely affect the performance (e.g. annual power production) of project output(s) (e.g. hydro-power generation facilities) throughout their design life time? | 0 | |

Options for answers and corresponding score are provided below:

| Response | Score |
|-------------|-------|
| Not Likely | 0 |
| Likely | 1 |
| Very Likely | 2 |

Responses when added that provide a score of 0 will be considered low risk project. If adding all responses will result to a score of 1-4 and that no score of 2 was given to any single response, the project will be assigned a medium risk category. A total score of 5 or more (which include providing a score of 1 in all responses) or a 2 in any single response, will be categorized as high risk project.

Result of Initial Screening (Low, Medium, High): Low

Other Comments : The proposed project is to provide infrastructure/building for Research and Training. The proposed construction, operation and maintenance of the project do not have any impact on the climatic condition of the area.

Prepared by: CGRDA

⁶ If possible, provide details on the sensitivity of project components to climate conditions, such as how climate parameters are considered in design standards for infrastructure components, how changes in key climate parameters and sea level might affect the siting/routing of project, the selection of construction material and/or scheduling, performances and/or the maintenance cost/scheduling of project outputs.

Rapid Environmental Assessment (REA) Checklist

PROPOSED RRNMU AT NAYA RAIPUR - CHHATTISGARH

Instructions:

- (i) The project team completes this checklist to support the environmental classification of a project. It is to be attached to the environmental categorization form and submitted to the Environment and Safeguards Division (RSES) for endorsement by Director, RSES and for approval by the Chief Compliance Officer.
- (ii) This checklist focuses on environmental issues and concerns. To ensure that social dimensions are adequately considered, refer also to ADB's (a) checklists on involuntary resettlement and Indigenous Peoples; (b) poverty reduction handbook; (c) staff guide to consultation and participation; and (d) gender checklists.
- (iii) Answer the questions assuming the "without mitigation" case. The purpose is to identify potential impacts. Use the "remarks" section to discuss any anticipated mitigation measures.

Country/Project Title: India/Rural Connectivity Investment Programme

Sector Division: Transportation and Communications

| Screening Questions | Yes | No | Remarks |
|--|-----|----|---|
| A. PROJECT SITING | | | |
| Is the Project Area Adjacent to or Within any of the Following Areas: | | | |
| ▪ Underground Utilities | | √ | |
| ▪ Cultural Heritage Site | | √ | |
| ▪ Protected Area | | √ | |
| ▪ Wetland | | √ | |
| ▪ Mangrove | | √ | |
| ▪ Estuarine | | √ | |
| ▪ Buffer Zone Of Protected Area | | √ | |
| ▪ Special Area For Protecting Biodiversity | | √ | |
| ▪ Bay | | √ | |
| B. POTENTIAL ENVIRONMENTAL IMPACTS | | | |
| Will the Project cause | | | |
| ▪ Encroachment on historical/cultural areas? | | √ | The sub project is proposed to be constructed on govt. owned land under possession of CGRDA |
| ▪ Encroachment on precious ecology (e.g. sensitive or protected areas)? | | √ | There are no protected area in the vicinity of the sub project |
| ▪ Impacts on the sustainability of associated sanitation and solid waste disposal systems? | | √ | |
| ▪ Dislocation or involuntary resettlement of people? | | √ | |
| ▪ Disproportionate impacts on the poor, women and children, Indigenous Peoples or other vulnerable groups? | | √ | |
| ▪ Accident risks associated with increased vehicular traffic, leading to loss of life? | | √ | |

| Screening Questions | Yes | No | Remarks |
|---|-----|----|---|
| <ul style="list-style-type: none"> ▪ Increased noise and air pollution resulting from increased traffic volume? | | √ | |
| <ul style="list-style-type: none"> ▪ Occupational and community health and safety risks? | √ | | During the project construction safety risk may arise. However, by adopting the mitigation measures proposed in the EMP, it shall be mitigated |
| <ul style="list-style-type: none"> ▪ Risks and vulnerabilities related to occupational health and safety due to physical, chemical, biological, and radiological hazards during project construction and operation? | | √ | General risks due to emulsion paints and gases used in welding machines |
| <ul style="list-style-type: none"> ▪ Generation of dust in sensitive areas during construction? | | √ | There are no sensitive areas in the vicinity of the sub project area. |
| <ul style="list-style-type: none"> ▪ Requirements for disposal of fill, excavation, and/or spoil materials? | | √ | Vacant land |
| <ul style="list-style-type: none"> ▪ Noise and vibration due to blasting and other civil works? | √ | | No blasting will be required. Noise risks will be minimised as specified in the EMP. |
| <ul style="list-style-type: none"> ▪ Long-term impacts on groundwater flows as result of needing to drain the project site prior to construction? | | √ | |
| <ul style="list-style-type: none"> ▪ Long-term impacts on local hydrology as a result of building hard surfaces in or near the building? | | √ | |
| <ul style="list-style-type: none"> ▪ Large population influx during project construction and operation that causes increased burden on social infrastructure and services (such as water supply and sanitation systems)? | | √ | The proposed project will require laborers during the project construction for a period of about 2 years only. Mostly local labourers would be engaged on intermediate basis, large population influx is not anticipated. |
| <ul style="list-style-type: none"> ▪ Social conflicts if workers from other regions or countries are hired? | | √ | Local laborers shall be employed to the extent possible at the contractor's responsibility. |
| <ul style="list-style-type: none"> ▪ Risks to community safety caused by fire, electric shock, or failure of the buildings safety features during operation? | | √ | |
| <ul style="list-style-type: none"> ▪ Risks to community health and safety caused by management and disposal of waste? | | √ | |
| <ul style="list-style-type: none"> ▪ Community safety risks due to both accidental and natural hazards, especially where the structural elements or components of the project are accessible to members of the affected community or where their failure could result in injury to the community throughout project construction, operation and decommissioning? | | √ | The proposed project area would be access controlled by barricading it. |

Checklist for Preliminary Climate Risk Screening

Country/Project Title: India : Rural Connectivity Investment Project
Sector : Transport
Subsector: Road Transport
Division/Department:

| Screening Questions | | Score | Remarks ⁷ |
|---------------------------------------|--|-------|----------------------|
| Location and Design of project | Is siting and/or routing of the project (or its components) likely to be affected by climate conditions including extreme weather related events such as floods, droughts, storms, landslides? | 0 | |
| | Would the project design (e.g. the clearance for bridges) need to consider any hydro-meteorological parameters (e.g., sea-level, peak river flow, reliable water level, peak wind speed etc)? | 0 | |
| Materials and Maintenance | Would weather, current and likely future climate conditions (e.g. prevailing humidity level, temperature contrast between hot summer days and cold winter days, exposure to wind and humidity hydro-meteorological parameters likely affect the selection of project inputs over the life of project outputs (e.g. construction material)? | 0 | |
| | Would weather, current and likely future climate conditions, and related extreme events likely affect the maintenance (scheduling and cost) of project output(s)? | 0 | |
| Performance of project outputs | Would weather/climate conditions and related extreme events likely affect the performance (e.g. annual power production) of project output(s) (e.g. hydro-power generation facilities) throughout their design life time? | 0 | |

Options for answers and corresponding score are provided below:

| Response | Score |
|-------------|-------|
| Not Likely | 0 |
| Likely | 1 |
| Very Likely | 2 |

Responses when added that provide a score of 0 will be considered low risk project. If adding all responses will result to a score of 1-4 and that no score of 2 was given to any single response, the project will be assigned a medium risk category. A total score of 5 or more (which include providing a score of 1 in all responses) or a 2 in any single response, will be categorized as high risk project.

Result of Initial Screening (Low, Medium, High): Low

Other Comments : The proposed project is to provide infrastructure/building for Research and Training. The proposed construction, operation and maintenance of the project do not have any impact on the climatic condition of the area.

Prepared by: CGRRDA

⁷ If possible, provide details on the sensitivity of project components to climate conditions, such as how climate parameters are considered in design standards for infrastructure components, how changes in key climate parameters and sea level might affect the siting/routing of project, the selection of construction material and/or scheduling, performances and/or the maintenance cost/scheduling of project outputs.

Rapid Environmental Assessment (REA) Checklist

PROPOSED RCTRC AT BHOPAL – MADHYA PRADESH

Instructions:

- (i) The project team completes this checklist to support the environmental classification of a project. It is to be attached to the environmental categorization form and submitted to the Environment and Safeguards Division (RSES) for endorsement by Director, RSES and for approval by the Chief Compliance Officer.
- (ii) This checklist focuses on environmental issues and concerns. To ensure that social dimensions are adequately considered, refer also to ADB's (a) checklists on involuntary resettlement and Indigenous Peoples; (b) poverty reduction handbook; (c) staff guide to consultation and participation; and (d) gender checklists.
- (iii) Answer the questions assuming the "without mitigation" case. The purpose is to identify potential impacts. Use the "remarks" section to discuss any anticipated mitigation measures.

Country/Project Title: India/Rural Connectivity Investment Programme

Sector Division: Transportation and Communication

| Screening Questions | Yes | No | Remarks |
|--|-----|----|--|
| A. PROJECT SITING | | | |
| Is the Project Area Adjacent to or Within any of the Following Areas: | | | |
| ▪ Underground Utilities | | √ | |
| ▪ Cultural Heritage Site | | √ | |
| ▪ Protected Area | | √ | |
| ▪ Wetland | | √ | |
| ▪ Mangrove | | √ | |
| ▪ Estuarine | | √ | |
| ▪ Buffer Zone Of Protected Area | | √ | |
| ▪ Special Area For Protecting Biodiversity | | √ | |
| ▪ Bay | | √ | |
| B. POTENTIAL ENVIRONMENTAL IMPACTS | | | |
| Will the Project cause | | | |
| ▪ Encroachment on historical/cultural areas? | | √ | The project is proposed to be constructed within the existing WALMI campus owned by the Panchayat & Rural Development Deptt., Govt. of Madhya Pradesh. |
| ▪ Encroachment on precious ecology (e.g. sensitive or protected areas)? | | √ | |
| ▪ Impacts on the sustainability of associated sanitation and solid waste disposal systems? | | √ | |
| ▪ Dislocation or involuntary resettlement of people? | | √ | |
| ▪ Disproportionate impacts on the poor, women and children, Indigenous Peoples or other vulnerable groups? | | √ | |

| Screening Questions | Yes | No | Remarks |
|---|-----|----|---|
| ▪ Accident risks associated with increased vehicular traffic, leading to loss of life? | | √ | |
| ▪ Increased noise and air pollution resulting from increased traffic volume? | | √ | |
| ▪ Occupational and community health and safety risks? | √ | | During the project construction safety risk may arise. However, by adopting the mitigation measures proposed in the EMP, it shall be mitigated |
| ▪ Risks and vulnerabilities related to occupational health and safety due to physical, chemical, biological, and radiological hazards during project construction and operation? | √ | | General risks due to emulsion paints and gases used in welding machines |
| ▪ Generation of dust in sensitive areas during construction? | | √ | There are no sensitive areas in the vicinity of the sub project area. |
| ▪ Requirements for disposal of fill, excavation, and/or spoil materials? | √ | | Since the structures of 'Demonstration Sanitation Project' would be dismantled to accommodate the proposed design of the building, disposal of Salvage/spoil materials will be generated, which can be used as fill material for the construction site. In case of excess quantity debris will be disposed off with due care as specified in the EMP. |
| ▪ Noise and vibration due to blasting and other civil works? | √ | | No blasting will be required. Noise risks will be minimised as specified in the EMP. |
| ▪ Long-term impacts on groundwater flows as result of needing to drain the project site prior to construction? | | √ | |
| ▪ Long-term impacts on local hydrology as a result of building hard surfaces in or near the building? | | √ | |
| ▪ Large population influx during project construction and operation that causes increased burden on social infrastructure and services (such as water supply and sanitation systems)? | | √ | The proposed project will require laborers during the project construction for a period of about 2 years only. Mostly local labourers would be engaged on intermediate basis, large population influx is not anticipated. |
| ▪ Social conflicts if workers from other regions or countries are hired? | | √ | Local laborers shall be employed to the extent possible at the contractor's responsibility. |
| ▪ Risks to community safety caused by fire, electric shock, or failure of the buildings safety features during operation? | | √ | |
| ▪ Risks to community health and safety caused by management and disposal of waste? | | √ | |

| Screening Questions | Yes | No | Remarks |
|---|------------|-----------|---|
| ▪ Community safety risks due to both accidental and natural hazards, especially where the structural elements or components of the project are accessible to members of the affected community or where their failure could result in injury to the community throughout project construction, operation and decommissioning? | | √ | The project area is protected by compound wall of WALMI Complex from the direct access of the public. |

Checklist for Preliminary Climate Risk Screening

Country/Project Title: India : Rural Connectivity Investment Project
Sector : Transport
Subsector: Road Transport
Division/Department:

| Screening Questions | | Score | Remarks ⁸ |
|---------------------------------------|--|-------|----------------------|
| Location and Design of project | Is siting and/or routing of the project (or its components) likely to be affected by climate conditions including extreme weather related events such as floods, droughts, storms, landslides? | 0 | |
| | Would the project design (e.g. the clearance for bridges) need to consider any hydro-meteorological parameters (e.g., sea-level, peak river flow, reliable water level, peak wind speed etc)? | 0 | |
| Materials and Maintenance | Would weather, current and likely future climate conditions (e.g. prevailing humidity level, temperature contrast between hot summer days and cold winter days, exposure to wind and humidity hydro-meteorological parameters likely affect the selection of project inputs over the life of project outputs (e.g. construction material)? | 0 | |
| | Would weather, current and likely future climate conditions, and related extreme events likely affect the maintenance (scheduling and cost) of project output(s)? | 0 | |
| Performance of project outputs | Would weather/climate conditions and related extreme events likely affect the performance (e.g. annual power production) of project output(s) (e.g. hydro-power generation facilities) throughout their design life time? | 0 | |

Options for answers and corresponding score are provided below:

| Response | Score |
|-------------|-------|
| Not Likely | 0 |
| Likely | 1 |
| Very Likely | 2 |

Responses when added that provide a score of 0 will be considered low risk project. If adding all responses will result to a score of 1-4 and that no score of 2 was given to any single response, the project will be assigned a medium risk category. A total score of 5 or more (which include providing a score of 1 in all responses) or a 2 in any single response, will be categorized as high risk project.

Result of Initial Screening (Low, Medium, High): Low

Other Comments : The proposed project is to provide infrastructure/building for Research and Training. The proposed construction, operation and maintenance of the project do not have any impact on the climatic condition of the area.

Prepared by: MPRRDA

⁸ If possible, provide details on the sensitivity of project components to climate conditions, such as how climate parameters are considered in design standards for infrastructure components, how changes in key climate parameters and sea level might affect the siting/routing of project, the selection of construction material and/or scheduling, performances and/or the maintenance cost/scheduling of project outputs.

Rapid Environmental Assessment (REA) Checklist

PROPOSED RRNMU AT JABALPUR – MADHYA PRADESH

Instructions:

- (i) The project team completes this checklist to support the environmental classification of a project. It is to be attached to the environmental categorization form and submitted to the Environment and Safeguards Division (RSES) for endorsement by Director, RSES and for approval by the Chief Compliance Officer.
- (ii) This checklist focuses on environmental issues and concerns. To ensure that social dimensions are adequately considered, refer also to ADB's (a) checklists on involuntary resettlement and Indigenous Peoples; (b) poverty reduction handbook; (c) staff guide to consultation and participation; and (d) gender checklists.
- (iii) Answer the questions assuming the "without mitigation" case. The purpose is to identify potential impacts. Use the "remarks" section to discuss any anticipated mitigation measures.

Country/Project Title: India/Rural Connectivity Investment Programme

Sector Division: Transportation Sector

| Screening Questions | Yes | No | Remarks |
|--|-----|----|--|
| A. PROJECT SITING | | | |
| Is the Project Area Adjacent to or Within any of the Following Areas: | | | |
| ▪ Underground Utilities | | √ | |
| ▪ Cultural Heritage Site | | √ | |
| ▪ Protected Area | | √ | |
| ▪ Wetland | | √ | |
| ▪ Mangrove | | √ | |
| ▪ Estuarine | | √ | |
| ▪ Buffer Zone Of Protected Area | | √ | |
| ▪ Special Area For Protecting Biodiversity | | √ | |
| ▪ Bay | | √ | |
| B. POTENTIAL ENVIRONMENTAL IMPACTS | | | |
| Will the Project cause | | | |
| ▪ Encroachment on historical/cultural areas? | | √ | The sub project is proposed to be constructed on Panchayat and Rural Development Deptt. Land , parent Deptt. of MPRRDA. Land under possession of MPRRDA. |
| ▪ Encroachment on precious ecology (e.g. sensitive or protected areas)? | | √ | There are no protected area in the vicinity of the sub project |
| ▪ Impacts on the sustainability of associated sanitation and solid waste disposal systems? | | √ | |
| ▪ Dislocation or involuntary resettlement of people? | | √ | |
| ▪ Disproportionate impacts on the poor, women and children, Indigenous Peoples or other vulnerable groups? | | √ | |

| Screening Questions | Yes | No | Remarks |
|---|-----|----|---|
| ▪ Accident risks associated with increased vehicular traffic, leading to loss of life? | | √ | |
| ▪ Increased noise and air pollution resulting from increased traffic volume? | | √ | |
| ▪ Occupational and community health and safety risks? | √ | | During the project construction safety risk may arise. However, by adopting the mitigation measures proposed in the EMP, it shall be mitigated |
| ▪ Risks and vulnerabilities related to occupational health and safety due to physical, chemical, biological, and radiological hazards during project construction and operation? | √ | | General risks due to emulsion paints and gases used in welding machines |
| ▪ Generation of dust in sensitive areas during construction? | | √ | There are no sensitive areas in the vicinity of the sub project area. |
| ▪ Requirements for disposal of fill, excavation, and/or spoil materials? | | √ | |
| ▪ Noise and vibration due to blasting and other civil works? | √ | | No blasting will be required. Noise risks will be minimised as specified in the EMP. |
| ▪ Long-term impacts on groundwater flows as result of needing to drain the project site prior to construction? | | √ | |
| ▪ Long-term impacts on local hydrology as a result of building hard surfaces in or near the building? | | √ | |
| ▪ Large population influx during project construction and operation that causes increased burden on social infrastructure and services (such as water supply and sanitation systems)? | | √ | The proposed project will require laborers during the project construction for a period of about 2 years only. Mostly local labourers would be engaged on intermediate basis, large population influx is not anticipated. |
| ▪ Social conflicts if workers from other regions or countries are hired? | | √ | Local laborers shall be employed to the extent possible at the contractor's responsibility. |
| ▪ Risks to community safety caused by fire, electric shock, or failure of the buildings safety features during operation? | | √ | |
| ▪ Risks to community health and safety caused by management and disposal of waste? | | √ | |
| ▪ Community safety risks due to both accidental and natural hazards, especially where the structural elements or components of the project are accessible to members of the affected community or where their failure could result in injury to the community throughout project construction, operation and decommissioning? | | √ | The proposed project area would be access controlled by barricading it. |

Checklist for Preliminary Climate Risk Screening

Country/Project Title: India : Rural Connectivity Investment Project

Sector : Transport

Subsector: Road Transport

Division/Department:

| Screening Questions | | Score | Remarks ⁹ |
|---------------------------------------|--|-------|----------------------|
| Location and Design of project | Is siting and/or routing of the project (or its components) likely to be affected by climate conditions including extreme weather related events such as floods, droughts, storms, landslides? | 0 | |
| | Would the project design (e.g. the clearance for bridges) need to consider any hydro-meteorological parameters (e.g., sea-level, peak river flow, reliable water level, peak wind speed etc)? | 0 | |
| Materials and Maintenance | Would weather, current and likely future climate conditions (e.g. prevailing humidity level, temperature contrast between hot summer days and cold winter days, exposure to wind and humidity hydro-meteorological parameters likely affect the selection of project inputs over the life of project outputs (e.g. construction material)? | 0 | |
| | Would weather, current and likely future climate conditions, and related extreme events likely affect the maintenance (scheduling and cost) of project output(s)? | 0 | |
| Performance of project outputs | Would weather/climate conditions and related extreme events likely affect the performance (e.g. annual power production) of project output(s) (e.g. hydro-power generation facilities) throughout their design life time? | 0 | |

Options for answers and corresponding score are provided below:

| Response | Score |
|-------------|-------|
| Not Likely | 0 |
| Likely | 1 |
| Very Likely | 2 |

Responses when added that provide a score of 0 will be considered low risk project. If adding all responses will result to a score of 1-4 and that no score of 2 was given to any single response, the project will be assigned a medium risk category. A total score of 5 or more (which include providing a score of 1 in all responses) or a 2 in any single response, will be categorized as high risk project.

Result of Initial Screening (Low, Medium, High): Low

Other Comments : The proposed project is to provide infrastructure/building for Research and Training. The proposed construction, operation and maintenance of the project do not have any impact on the climatic condition of the area.

Prepared by: MPRRDA

⁹ If possible, provide details on the sensitivity of project components to climate conditions, such as how climate parameters are considered in design standards for infrastructure components, how changes in key climate parameters and sea level might affect the siting/routing of project, the selection of construction material and/or scheduling, performances and/or the maintenance cost/scheduling of project outputs.

Rapid Environmental Assessment (REA) Checklist

PROPOSED RCTRC AT BHUBANESWAR - ODISHA

Instructions:

- (i) The project team completes this checklist to support the environmental classification of a project. It is to be attached to the environmental categorization form and submitted to the Environment and Safeguards Division (RSES) for endorsement by Director, RSES and for approval by the Chief Compliance Officer.
- (ii) This checklist focuses on environmental issues and concerns. To ensure that social dimensions are adequately considered, refer also to ADB's (a) checklists on involuntary resettlement and Indigenous Peoples; (b) poverty reduction handbook; (c) staff guide to consultation and participation; and (d) gender checklists.
- (iii) Answer the questions assuming the "without mitigation" case. The purpose is to identify potential impacts. Use the "remarks" section to discuss any anticipated mitigation measures.

Country/Project Title: India/Rural Connectivity Investment Programme

Sector Division: Transportation Sector

| Screening Questions | Yes | No | Remarks |
|--|-----|----|--|
| A. PROJECT SITING | | | |
| Is the Project Area Adjacent to or Within any of the Following Areas: | | | |
| ▪ Underground Utilities | | √ | |
| ▪ Cultural Heritage Site | | √ | |
| ▪ Protected Area | | √ | |
| ▪ Wetland | | √ | |
| ▪ Mangrove | | √ | |
| ▪ Estuarine | | √ | |
| ▪ Buffer Zone Of Protected Area | | √ | |
| ▪ Special Area For Protecting Biodiversity | | √ | |
| ▪ Bay | | √ | |
| B. POTENTIAL ENVIRONMENTAL IMPACTS | | | |
| Will the Project cause | | | |
| ▪ Encroachment on historical/cultural areas? | | √ | The sub project is proposed to be constructed on Rural Development Deptt. Land , parent Deptt. of OSRRA. Land already under possession of OSRRA. |
| ▪ Encroachment on precious ecology (e.g. sensitive or protected areas)? | | √ | |
| ▪ Impacts on the sustainability of associated sanitation and solid waste disposal systems? | | √ | |
| ▪ Dislocation or involuntary resettlement of people? | | √ | |
| ▪ Disproportionate impacts on the poor, women and children, Indigenous Peoples or other vulnerable groups? | | √ | |

| Screening Questions | Yes | No | Remarks |
|---|-----|----|---|
| ▪ Accident risks associated with increased vehicular traffic, leading to loss of life? | | √ | |
| ▪ Increased noise and air pollution resulting from increased traffic volume? | | √ | |
| ▪ Occupational and community health and safety risks? | √ | | During the project construction safety risk may arise. However, by adopting the mitigation measures proposed in the EMP, it shall be mitigated |
| ▪ Risks and vulnerabilities related to occupational health and safety due to physical, chemical, biological, and radiological hazards during project construction and operation? | √ | | General risks due to emulsion paints and gases used in welding machines |
| ▪ Generation of dust in sensitive areas during construction? | | √ | There are no sensitive areas in the vicinity of the sub project area. |
| ▪ Requirements for disposal of fill, excavation, and/or spoil materials? | √ | | |
| ▪ Noise and vibration due to blasting and other civil works? | √ | | No blasting will be required. Noise risks will be minimised as specified in the EMP. |
| ▪ Long-term impacts on groundwater flows as result of needing to drain the project site prior to construction? | | √ | |
| ▪ Long-term impacts on local hydrology as a result of building hard surfaces in or near the building? | | √ | |
| ▪ Large population influx during project construction and operation that causes increased burden on social infrastructure and services (such as water supply and sanitation systems)? | | √ | The proposed project will require laborers during the project construction for a period of about 2 years only. Mostly local labourers would be engaged on intermediate basis, large population influx is not anticipated. |
| ▪ Social conflicts if workers from other regions or countries are hired? | | √ | Local laborers shall be employed to the extent possible at the contractor's responsibility. |
| ▪ Risks to community safety caused by fire, electric shock, or failure of the buildings safety features during operation? | | √ | |
| ▪ Risks to community health and safety caused by management and disposal of waste? | | √ | |
| ▪ Community safety risks due to both accidental and natural hazards, especially where the structural elements or components of the project are accessible to members of the affected community or where their failure could result in injury to the community throughout project construction, operation and decommissioning? | | √ | The project area is protected by compound wall from the direct access of the public. |

Checklist for Preliminary Climate Risk Screening

Country/Project Title: India : Rural Connectivity Investment Project
Sector : Transport
Subsector: Road Transport
Division/Department:

| Screening Questions | | Score | Remarks ¹⁰ |
|---------------------------------------|--|-------|-----------------------|
| Location and Design of project | Is siting and/or routing of the project (or its components) likely to be affected by climate conditions including extreme weather related events such as floods, droughts, storms, landslides? | 0 | |
| | Would the project design (e.g. the clearance for bridges) need to consider any hydro-meteorological parameters (e.g., sea-level, peak river flow, reliable water level, peak wind speed etc)? | 0 | |
| Materials and Maintenance | Would weather, current and likely future climate conditions (e.g. prevailing humidity level, temperature contrast between hot summer days and cold winter days, exposure to wind and humidity hydro-meteorological parameters likely affect the selection of project inputs over the life of project outputs (e.g. construction material)? | 0 | |
| | Would weather, current and likely future climate conditions, and related extreme events likely affect the maintenance (scheduling and cost) of project output(s)? | 0 | |
| Performance of project outputs | Would weather/climate conditions and related extreme events likely affect the performance (e.g. annual power production) of project output(s) (e.g. hydro-power generation facilities) throughout their design life time? | 0 | |

Options for answers and corresponding score are provided below:

| Response | Score |
|-------------|-------|
| Not Likely | 0 |
| Likely | 1 |
| Very Likely | 2 |

Responses when added that provide a score of 0 will be considered low risk project. If adding all responses will result to a score of 1-4 and that no score of 2 was given to any single response, the project will be assigned a medium risk category. A total score of 5 or more (which include providing a score of 1 in all responses) or a 2 in any single response, will be categorized as high risk project.

Result of Initial Screening (Low, Medium, High): Low

Other Comments : The proposed project is to provide infrastructure/building for Research and Training. The proposed construction, operation and maintenance of the project do not have any impact on the climatic condition of the area.

Prepared by: OSRRA

¹⁰ If possible, provide details on the sensitivity of project components to climate conditions, such as how climate parameters are considered in design standards for infrastructure components, how changes in key climate parameters and sea level might affect the siting/routing of project, the selection of construction material and/or scheduling, performances and/or the maintenance cost/scheduling of project outputs.

Rapid Environmental Assessment (REA) Checklist

PROPOSED RRNMU AT ANGUL - ODISHA

Instructions:

- (i) The project team completes this checklist to support the environmental classification of a project. It is to be attached to the environmental categorization form and submitted to the Environment and Safeguards Division (RSES) for endorsement by Director, RSES and for approval by the Chief Compliance Officer.
- (ii) This checklist focuses on environmental issues and concerns. To ensure that social dimensions are adequately considered, refer also to ADB's (a) checklists on involuntary resettlement and Indigenous Peoples; (b) poverty reduction handbook; (c) staff guide to consultation and participation; and (d) gender checklists.
- (iii) Answer the questions assuming the "without mitigation" case. The purpose is to identify potential impacts. Use the "remarks" section to discuss any anticipated mitigation measures.

Country/Project Title: India/Rural Connectivity Investment Programme

Sector Division: Transportation Sector

| Screening Questions | Yes | No | Remarks |
|--|-----|----|--|
| A. PROJECT SITING | | | |
| Is the Project Area Adjacent to or Within any of the Following Areas: | | | |
| ▪ Underground Utilities | | √ | |
| ▪ Cultural Heritage Site | | √ | |
| ▪ Protected Area | | √ | |
| ▪ Wetland | | √ | |
| ▪ Mangrove | | √ | |
| ▪ Estuarine | | √ | |
| ▪ Buffer Zone Of Protected Area | | √ | |
| ▪ Special Area For Protecting Biodiversity | | √ | |
| ▪ Bay | | √ | |
| B. POTENTIAL ENVIRONMENTAL IMPACTS | | | |
| Will the Project cause | | | |
| ▪ Encroachment on historical/cultural areas? | | √ | The sub project is proposed to be constructed on govt. owned land under possession of RD Deptt., Govt. of Odisha |
| ▪ Encroachment on precious ecology (e.g. sensitive or protected areas)? | | √ | There are no protected area in the vicinity of the sub project |
| ▪ Impacts on the sustainability of associated sanitation and solid waste disposal systems? | | √ | |
| ▪ Dislocation or involuntary resettlement of people? | | √ | |
| ▪ Disproportionate impacts on the poor, women and children, Indigenous Peoples or other vulnerable groups? | | √ | |
| ▪ Accident risks associated with increased vehicular traffic, leading to loss of life? | | √ | |

| Screening Questions | Yes | No | Remarks |
|---|-----|----|---|
| ▪ Increased noise and air pollution resulting from increased traffic volume? | | √ | |
| ▪ Occupational and community health and safety risks? | √ | | During the project construction safety risk may arise. However, by adopting the mitigation measures proposed in the EMP, it shall be mitigated |
| ▪ Risks and vulnerabilities related to occupational health and safety due to physical, chemical, biological, and radiological hazards during project construction and operation? | √ | | General risks due to emulsion paints and gases used in welding machines |
| ▪ Generation of dust in sensitive areas during construction? | | √ | There are no sensitive areas in the vicinity of the sub project area. |
| ▪ Requirements for disposal of fill, excavation, and/or spoil materials? | √ | | |
| ▪ Noise and vibration due to blasting and other civil works? | √ | | No blasting will be required. Noise risks will be minimised as specified in the EMP. |
| ▪ Long-term impacts on groundwater flows as result of needing to drain the project site prior to construction? | | √ | |
| ▪ Long-term impacts on local hydrology as a result of building hard surfaces in or near the building? | | √ | |
| ▪ Large population influx during project construction and operation that causes increased burden on social infrastructure and services (such as water supply and sanitation systems)? | | √ | The proposed project will require laborers during the project construction for a period of about 2 years only. Mostly local labourers would be engaged on intermediate basis, large population influx is not anticipated. |
| ▪ Social conflicts if workers from other regions or countries are hired? | | √ | Local laborers shall be employed to the extent possible at the contractor's responsibility. |
| ▪ Risks to community safety caused by fire, electric shock, or failure of the buildings safety features during operation? | | √ | |
| ▪ Risks to community health and safety caused by management and disposal of waste? | | √ | |
| ▪ Community safety risks due to both accidental and natural hazards, especially where the structural elements or components of the project are accessible to members of the affected community or where their failure could result in injury to the community throughout project construction, operation and decommissioning? | | √ | The proposed project area would be access controlled by proper boundary wall and barricades during construction.. |

Checklist for Preliminary Climate Risk Screening

Country/Project Title: India : Rural Connectivity Investment Project

Sector : Transport

Subsector: Road Transport

Division/Department:

| Screening Questions | | Score | Remarks ¹¹ |
|---------------------------------------|--|-------|-----------------------|
| Location and Design of project | Is siting and/or routing of the project (or its components) likely to be affected by climate conditions including extreme weather related events such as floods, droughts, storms, landslides? | 0 | |
| | Would the project design (e.g. the clearance for bridges) need to consider any hydro-meteorological parameters (e.g., sea-level, peak river flow, reliable water level, peak wind speed etc)? | 0 | |
| Materials and Maintenance | Would weather, current and likely future climate conditions (e.g. prevailing humidity level, temperature contrast between hot summer days and cold winter days, exposure to wind and humidity hydro-meteorological parameters likely affect the selection of project inputs over the life of project outputs (e.g. construction material)? | 0 | |
| | Would weather, current and likely future climate conditions, and related extreme events likely affect the maintenance (scheduling and cost) of project output(s)? | 0 | |
| Performance of project outputs | Would weather/climate conditions and related extreme events likely affect the performance (e.g. annual power production) of project output(s) (e.g. hydro-power generation facilities) throughout their design life time? | 0 | |

Options for answers and corresponding score are provided below:

| Response | Score |
|-------------|-------|
| Not Likely | 0 |
| Likely | 1 |
| Very Likely | 2 |

Responses when added that provide a score of 0 will be considered low risk project. If adding all responses will result to a score of 1-4 and that no score of 2 was given to any single response, the project will be assigned a medium risk category. A total score of 5 or more (which include providing a score of 1 in all responses) or a 2 in any single response, will be categorized as high risk project.

Result of Initial Screening (Low, Medium, High): Low

Other Comments : The proposed project is to provide infrastructure/building for Research and Training. The proposed construction, operation and maintenance of the project do not have any impact on the climatic condition of the area.

Prepared by: OSRRA

¹¹ If possible, provide details on the sensitivity of project components to climate conditions, such as how climate parameters are considered in design standards for infrastructure components, how changes in key climate parameters and sea level might affect the siting/routing of project, the selection of construction material and/or scheduling, performances and/or the maintenance cost/scheduling of project outputs.

Rapid Environmental Assessment (REA) Checklist

PROPOSED RCTRC AT KALYANI – WEST BENGAL

Instructions:

- (i) The project team completes this checklist to support the environmental classification of a project. It is to be attached to the environmental categorization form and submitted to the Environment and Safeguards Division (RSES) for endorsement by Director, RSES and for approval by the Chief Compliance Officer.
- (ii) This checklist focuses on environmental issues and concerns. To ensure that social dimensions are adequately considered, refer also to ADB's (a) checklists on involuntary resettlement and Indigenous Peoples; (b) poverty reduction handbook; (c) staff guide to consultation and participation; and (d) gender checklists.
- (iii) Answer the questions assuming the "without mitigation" case. The purpose is to identify potential impacts. Use the "remarks" section to discuss any anticipated mitigation measures.

Country/Project Title: India/Rural Connectivity Investment Programme

Sector Division: Transportation Sector

| Screening Questions | Yes | No | Remarks |
|--|-----|----|---|
| A. PROJECT SITING | | | |
| Is the Project Area Adjacent to or Within any of the Following Areas: | | | |
| ▪ Underground Utilities | | √ | |
| ▪ Cultural Heritage Site | | √ | |
| ▪ Protected Area | | √ | |
| ▪ Wetland | | √ | |
| ▪ Mangrove | | √ | |
| ▪ Estuarine | | √ | |
| ▪ Buffer Zone Of Protected Area | | √ | |
| ▪ Special Area For Protecting Biodiversity | | √ | |
| ▪ Bay | | √ | |
| B. POTENTIAL ENVIRONMENTAL IMPACTS | | | |
| Will the Project cause | | | |
| ▪ Encroachment on historical/cultural areas? | | √ | The sub project is proposed to be constructed on government owned land already under possession of WBSRDA |
| ▪ Encroachment on precious ecology (e.g. sensitive or protected areas)? | | √ | There are no protected area in the vicinity of the sub project |
| ▪ Impacts on the sustainability of associated sanitation and solid waste disposal systems? | | √ | |
| ▪ Dislocation or involuntary resettlement of people? | | √ | |
| ▪ Disproportionate impacts on the poor, women and children, Indigenous Peoples or other vulnerable groups? | | √ | |
| ▪ Accident risks associated with increased vehicular traffic, leading to loss of life? | | √ | |

| Screening Questions | Yes | No | Remarks |
|---|-----|----|---|
| <ul style="list-style-type: none"> ▪ Increased noise and air pollution resulting from increased traffic volume? | | √ | |
| <ul style="list-style-type: none"> ▪ Occupational and community health and safety risks? | √ | | During the project construction safety risk may arise. However, by adopting the mitigation measures proposed in the EMP, it shall be mitigated |
| <ul style="list-style-type: none"> ▪ Risks and vulnerabilities related to occupational health and safety due to physical, chemical, biological, and radiological hazards during project construction and operation? | | √ | General risks due to emulsion paints and gases used in welding machines |
| <ul style="list-style-type: none"> ▪ Generation of dust in sensitive areas during construction? | | √ | There are no sensitive areas in the vicinity of the sub project area. |
| <ul style="list-style-type: none"> ▪ Requirements for disposal of fill, excavation, and/or spoil materials? | √ | | |
| <ul style="list-style-type: none"> ▪ Noise and vibration due to blasting and other civil works? | √ | | No blasting will be required. Noise risks will be minimised as specified in the EMP. |
| <ul style="list-style-type: none"> ▪ Long-term impacts on groundwater flows as result of needing to drain the project site prior to construction? | | √ | |
| <ul style="list-style-type: none"> ▪ Long-term impacts on local hydrology as a result of building hard surfaces in or near the building? | | √ | |
| <ul style="list-style-type: none"> ▪ Large population influx during project construction and operation that causes increased burden on social infrastructure and services (such as water supply and sanitation systems)? | | √ | The proposed project will require laborers during the project construction for a period of about 2 years only. Mostly local labourers would be engaged on intermediate basis, large population influx is not anticipated. |
| <ul style="list-style-type: none"> ▪ Social conflicts if workers from other regions or countries are hired? | | √ | Local laborers shall be employed to the extent possible at the contractor's responsibility. |
| <ul style="list-style-type: none"> ▪ Risks to community safety caused by fire, electric shock, or failure of the buildings safety features during operation? | | √ | |
| <ul style="list-style-type: none"> ▪ Risks to community health and safety caused by management and disposal of waste? | | √ | |
| <ul style="list-style-type: none"> ▪ Community safety risks due to both accidental and natural hazards, especially where the structural elements or components of the project are accessible to members of the affected community or where their failure could result in injury to the community throughout project construction, operation and decommissioning? | | √ | The project area will be protected by compound wall from the direct access of the public. |

Checklist for Preliminary Climate Risk Screening

Country/Project Title: India : Rural Connectivity Investment Project
Sector : Transport
Subsector: Road Transport
Division/Department:

| Screening Questions | | Score | Remarks ¹² |
|---------------------------------------|--|-------|-----------------------|
| Location and Design of project | Is siting and/or routing of the project (or its components) likely to be affected by climate conditions including extreme weather related events such as floods, droughts, storms, landslides? | 0 | |
| | Would the project design (e.g. the clearance for bridges) need to consider any hydro-meteorological parameters (e.g., sea-level, peak river flow, reliable water level, peak wind speed etc)? | 0 | |
| Materials and Maintenance | Would weather, current and likely future climate conditions (e.g. prevailing humidity level, temperature contrast between hot summer days and cold winter days, exposure to wind and humidity hydro-meteorological parameters likely affect the selection of project inputs over the life of project outputs (e.g. construction material)? | 0 | |
| | Would weather, current and likely future climate conditions, and related extreme events likely affect the maintenance (scheduling and cost) of project output(s)? | 0 | |
| Performance of project outputs | Would weather/climate conditions and related extreme events likely affect the performance (e.g. annual power production) of project output(s) (e.g. hydro-power generation facilities) throughout their design life time? | 0 | |

Options for answers and corresponding score are provided below:

| Response | Score |
|-------------|-------|
| Not Likely | 0 |
| Likely | 1 |
| Very Likely | 2 |

Responses when added that provide a score of 0 will be considered low risk project. If adding all responses will result to a score of 1-4 and that no score of 2 was given to any single response, the project will be assigned a medium risk category. A total score of 5 or more (which include providing a score of 1 in all responses) or a 2 in any single response, will be categorized as high risk project.

Result of Initial Screening (Low, Medium, High): Low

Other Comments : The proposed project is to provide infrastructure/building for Research and Training. The proposed construction, operation and maintenance of the project do not have any impact on the climatic condition of the area.

Prepared by; WBSRDA

¹² If possible, provide details on the sensitivity of project components to climate conditions, such as how climate parameters are considered in design standards for infrastructure components, how changes in key climate parameters and sea level might affect the siting/routing of project, the selection of construction material and/or scheduling, performances and/or the maintenance cost/scheduling of project outputs.

Rapid Environmental Assessment (REA) Checklist

PROPOSED RRNMU AT BARASAT – WEST BENGAL

Instructions:

- (i) The project team completes this checklist to support the environmental classification of a project. It is to be attached to the environmental categorization form and submitted to the Environment and Safeguards Division (RSES) for endorsement by Director, RSES and for approval by the Chief Compliance Officer.
- (ii) This checklist focuses on environmental issues and concerns. To ensure that social dimensions are adequately considered, refer also to ADB's (a) checklists on involuntary resettlement and Indigenous Peoples; (b) poverty reduction handbook; (c) staff guide to consultation and participation; and (d) gender checklists.
- (iii) Answer the questions assuming the "without mitigation" case. The purpose is to identify potential impacts. Use the "remarks" section to discuss any anticipated mitigation measures.

Country/Project Title: India/Rural Connectivity Investment Programme

Sector Division: Transportation Sector

| Screening Questions | Yes | No | Remarks |
|--|-----|----|--|
| A. PROJECT SITING | | | |
| Is the Project Area Adjacent to or Within any of the Following Areas: | | | |
| ▪ Underground Utilities | | √ | |
| ▪ Cultural Heritage Site | | √ | |
| ▪ Protected Area | | √ | |
| ▪ Wetland | | √ | |
| ▪ Mangrove | | √ | |
| ▪ Estuarine | | √ | |
| ▪ Buffer Zone Of Protected Area | | √ | |
| ▪ Special Area For Protecting Biodiversity | | √ | |
| ▪ Bay | | √ | |
| B. POTENTIAL ENVIRONMENTAL IMPACTS | | | |
| Will the Project cause | | | |
| ▪ Encroachment on historical/cultural areas? | | √ | The sub project is proposed to be constructed on govt. owned land under possession of WBSRDA |
| ▪ Encroachment on precious ecology (e.g. sensitive or protected areas)? | | √ | There are no protected area in the vicinity of the sub project |
| ▪ Impacts on the sustainability of associated sanitation and solid waste disposal systems? | | √ | |
| ▪ Dislocation or involuntary resettlement of people? | | √ | |
| ▪ Disproportionate impacts on the poor, women and children, Indigenous Peoples or other vulnerable groups? | | √ | |
| ▪ Accident risks associated with increased vehicular traffic, leading to loss of life? | | √ | |

| Screening Questions | Yes | No | Remarks |
|---|-----|----|---|
| <ul style="list-style-type: none"> ▪ Increased noise and air pollution resulting from increased traffic volume? | | √ | |
| <ul style="list-style-type: none"> ▪ Occupational and community health and safety risks? | √ | | During the project construction safety risk may arise. However, by adopting the mitigation measures proposed in the EMP, it shall be mitigated |
| <ul style="list-style-type: none"> ▪ Risks and vulnerabilities related to occupational health and safety due to physical, chemical, biological, and radiological hazards during project construction and operation? | | √ | General risks due to emulsion paints and gases used in welding machines |
| <ul style="list-style-type: none"> ▪ Generation of dust in sensitive areas during construction? | | √ | General risks due to emulsion paints and gases used in welding machines |
| <ul style="list-style-type: none"> ▪ Requirements for disposal of fill, excavation, and/or spoil materials? | √ | | There are no sensitive areas in the vicinity of the sub project area. |
| <ul style="list-style-type: none"> ▪ Noise and vibration due to blasting and other civil works? | √ | | No Blasting will be required. Noise risks will be minimised as specified in the EMP. |
| <ul style="list-style-type: none"> ▪ Long-term impacts on groundwater flows as result of needing to drain the project site prior to construction? | | √ | |
| <ul style="list-style-type: none"> ▪ Long-term impacts on local hydrology as a result of building hard surfaces in or near the building? | | √ | |
| <ul style="list-style-type: none"> ▪ Large population influx during project construction and operation that causes increased burden on social infrastructure and services (such as water supply and sanitation systems)? | | √ | The proposed project will require laborers during the project construction for a period of about 2 years only. Mostly local labourers would be engaged on intermediate basis, large population influx is not anticipated. |
| <ul style="list-style-type: none"> ▪ Social conflicts if workers from other regions or countries are hired? | | √ | Local laborers shall be employed to the extent possible at the contractor's responsibility. |
| <ul style="list-style-type: none"> ▪ Risks to community safety caused by fire, electric shock, or failure of the buildings safety features during operation? | | √ | |
| <ul style="list-style-type: none"> ▪ Risks to community health and safety caused by management and disposal of waste? | | √ | |
| <ul style="list-style-type: none"> ▪ Community safety risks due to both accidental and natural hazards, especially where the structural elements or components of the project are accessible to members of the affected community or where their failure could result in injury to the community throughout project construction, operation and decommissioning? | | √ | The proposed project area is well protected by boundary walls |

Checklist for Preliminary Climate Risk Screening

Country/Project Title: India : Rural Connectivity Investment Project

Sector : Transport

Subsector: Road Transport

Division/Department:

| Screening Questions | | Score | Remarks ¹³ |
|---------------------------------------|--|-------|-----------------------|
| Location and Design of project | Is siting and/or routing of the project (or its components) likely to be affected by climate conditions including extreme weather related events such as floods, droughts, storms, landslides? | 0 | |
| | Would the project design (e.g. the clearance for bridges) need to consider any hydro-meteorological parameters (e.g., sea-level, peak river flow, reliable water level, peak wind speed etc)? | 0 | |
| Materials and Maintenance | Would weather, current and likely future climate conditions (e.g. prevailing humidity level, temperature contrast between hot summer days and cold winter days, exposure to wind and humidity hydro-meteorological parameters likely affect the selection of project inputs over the life of project outputs (e.g. construction material)? | 0 | |
| | Would weather, current and likely future climate conditions, and related extreme events likely affect the maintenance (scheduling and cost) of project output(s)? | 0 | |
| Performance of project outputs | Would weather/climate conditions and related extreme events likely affect the performance (e.g. annual power production) of project output(s) (e.g. hydro-power generation facilities) throughout their design life time? | 0 | |

Options for answers and corresponding score are provided below:

| Response | Score |
|-------------|-------|
| Not Likely | 0 |
| Likely | 1 |
| Very Likely | 2 |

Responses when added that provide a score of 0 will be considered low risk project. If adding all responses will result to a score of 1-4 and that no score of 2 was given to any single response, the project will be assigned a medium risk category. A total score of 5 or more (which include providing a score of 1 in all responses) or a 2 in any single response, will be categorized as high risk project.

Result of Initial Screening (Low, Medium, High): Low

Other Comments : The proposed project is to provide infrastructure/building for Research and Training. The proposed construction, operation and maintenance of the project do not have any impact on the climatic condition of the area.

Prepared by: WBSRDA

¹³ If possible, provide details on the sensitivity of project components to climate conditions, such as how climate parameters are considered in design standards for infrastructure components, how changes in key climate parameters and sea level might affect the siting/routing of project, the selection of construction material and/or scheduling, performances and/or the maintenance cost/scheduling of project outputs.

Appendix 2: Photoplates of Site Visit and Consultations
Assam



Consultation at Guwahati



Consultation at Tezpur



Proposed Site for RCTRC at Guwahati



Proposed Site for Pilot RRNMU at Tezpur

Chhattisgarh



Consultation at RCTRC Site - Nlmora



**Consultation at Pilot RRNMU Site
Naya Raipur**



Proposed Site for RCTRC at SIRD Complex Nimora



Proposed Site for Pilot RRNMU at Naya Raipur

Madhya Pradesh



Consultation at RCTRC Site – WALMI, Bhopal



Consultation at Pilot RRNMU Site – Jabalpur



Proposed Site for RCTRC at SIRD Complex Nimora



Proposed Site for Pilot RRNMU at Naya Raipur

Odisha



Consultation at RCTRC Site – Bhubaneswar



Consultation at Pilot RRNMU Site - Angul



Proposed Site for RCTRC at Bhubaneswar



Proposed Site for Pilot RRNMU at Angul

West Bengal



Consultation at RCTRC Site – Kalyani



Consultation at Pilot RRNMU Site - Barasat



Proposed Site for RCTRC at Kalayani



Proposed Site for Pilot RRNMU at Barasat