

# Environmental Assessment and Review Framework

June 2017

## SRI: Second Integrated Road Investment Program

Prepared by the Road Development Authority, Ministry of Higher Education and Highways,  
Government of Sri Lanka for the Asian Development Bank

## CURRENCY EQUIVALENTS

(As of 4 May 2017)

|               |   |                          |
|---------------|---|--------------------------|
| Currency unit | – | Sri Lanka Rupee (Rs/SLR) |
| SLR 1.00      | = | \$ 0.0065                |
| \$1.00        | = | SLR 154.34               |

## ABBREVIATIONS

|           |    |   |
|-----------|----|---|
| ABD       | -  | Asian Development Bank  |
| BIQ       | -  | Basic Information Questionnaire                               |
| BOQ       | -  | Bill of Quantities  |
| CCA       | -  | Coast Conservation Act  |
| CC & CRMD | -  | Coast Conservation and Coastal Resource Management Department |
| CSD       | -  | Context Sensitive Design                                      |
| DG        | -  | Director General  |
| DS        | -  | Divisional Secretariat  |
| DWLC      | -  | Department of Wildlife Conservation                           |
| EARF      | -  | Environment Assessment and Review Framework                   |
| EC        | -  | Environment Checklist   |
| EO        | -  | Environment Officer   |
| EIA       | -  | Environment Impact Assessment                                 |
| EMC       | -- | Environment Monitoring Checklist                              |
| EMP       | -  | Environment Management Plan                                   |
| EMAP      | -  | Contract Package Specific Environment Management Action Plans |
| EPL       | -  | Environmental Protection License                              |
| ES        | -  | Environment Specialist  |
| ESDD      | -  | Environment and Social Development Division                   |
| ESO       | -  | Environment Safeguard Officer                                 |
| ESU       | -  | Environment and Social Unit                                   |
| FaFPA     | -  | Fauna and Flora Protection Act                                |
| FD        | -  | Forest Department   |
| FGD       | -  | Focus Group Meeting   |
| GHG       | -  | Green House Gas   |
| GoSL      | -  | Government of Sri Lanka                                       |
| GN        | -  | Grama Niladhari   |
| GND       | -  | Grama Niladhari Division                                      |
| GRC       | -  | Grievance Redress Committee                                   |
| GRM       | -  | Grievance Redress Mechanism                                   |
| GS & MB   | -  | Geological Survey and Mines Bureau                            |
| HoHEH     | -  | Ministry of Higher Education and Highways                     |
| IEE       | -  | Initial Environment Examination                               |
| IEER      | -  | Initial Environment Examination Report                        |
| iRoad     | -  | Integrated Road Investment Program                            |
| iRoad 2   | -  | Second Integrated Road Investment Program                     |
| IML       | -  | Industrial Mining License                                     |
| MFF       | -  | Multi tranche Financing Facility                              |
| MRM       | -  | Management Review Meeting                                     |
| NEA       | -  | National Environment Act                                      |
| NBRO      | -  | National Building Research Organization                       |
| NP        | -  | National Park   |

|       |   |   |
|-------|---|---|
| NPPD  | - | National Physical Planning Department             |
| NR    | - | Nature Reserve                                    |
| PAA   | - | Project Approving Authority                       |
| PD    | - | Project Director                                  |
| PFR   | - | Periodic Financing Request                        |
| PIC   | - | Project Implementing Consultant                   |
| PIU   | - | Project Implementing Unit                         |
| PP    | - | Project Proponent                                 |
| PRDA  | - | Provincial Road Development Authority             |
| PS    | - | Pradeshiya Sabha                                  |
| RDA   | - | Road Development Authority                        |
| REA   | - | Rapid Environment Assessment                      |
| ROW   | - | Right of Way                                      |
| SAPE  | - | Survey and Preliminary Engineering                |
| SGRS  | - | Social, Gender, Resettlement Specialist           |
| SLSI  | - | Sri Lanka Standards Institution                   |
| SNR   | - | Strict Nature Reserve                             |
| SPS   | - | ADB, Safeguards Policy Statement, 2009            |
| SSO   | - | Social Safeguards Officer                         |
| TA    | - | Technical Assistance                              |
| TEC   | - | Technical Evaluation Committee                    |
| TEEMP | - | Transport Emissions Evaluation Model for Projects |
| UDA   | - | Urban Development Authority                       |
| UXO   | - | Unexploded Ordinance                              |

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## **EXECUTIVE SUMMARY**

### **A. Introduction**

1. In year 2014, the Government of Sri Lanka (GoSL) formulated the Integrated Road Investment Program (iRoad program) with the intension of (a) improving road conditions between selected rural communities and socioeconomic centers, and (b) enhanced capacity of road agencies. Asian Development Bank (ADB) financed this program through a time slice Multitranchise Financing Facility (MFF). The program is now being implemented in Southern, Central, Sabargamuwa, North Western and North Central Provinces and Kalutara District in Western Province. Based on the success of this program, the GoSL has requested ADB to finance Second iRoad program (iRoad 2) under the same loan modality. The second integrated road investment program (iRoad 2) will be implemented in Northern, Eastern, Uva and Western Provinces.

2. Around 5,600 kilometers (km) of roads (including class A & B National roads) located in above four provinces were selected (long list of road) based on the multi criteria list to conduct Survey and Preliminary Engineering Survey (SAPE) works. The final list of roads (from the long list) in each province to be rehabilitated, improved and maintained under this investment program will be selected based on the outcome of SAPE works. Based on the geographic spread and cost of construction, each district will have contract packages between two (2) to four (4) numbers. For Pradeshiya Sabha (PS) and Provincial Road Development Authority (PRDA) roads, the improved carriageway width will be from 2.5 m to 5.5 m, while carriageway of roads under Road Development Authority (RDA) will be improved up to 5.5 m to 8.0 m.

### **B. Legal Framework and Institutional Capacity**

3. The National Environment Act No. 47 of 1980 (NEA) and its amendment Act No. 56 of 1988 is considered as the basic national law for protection, management and enhancement of the country's environment. The Environment Impact Assessment (EIA) process is implemented through designated Project Approving Agencies (PAA) as prescribed by the Minister under section 23 Y of the NEA. The Central Environmental Authority established in 1981 administers the NEA.

4. The Coast Conservation Act No. 57 of 1981 and its amendments govern the activities that are carried out within the Coastal Zone as defined in the Act. The Coast Conservation and Coastal Resource Management Department regulates the provisions stipulated in this Act.

5. The Fauna and Flora Protection Act which is administered by the Department of Wild Life Conservation is responsible to protect, conserve and preserve fauna and flora in Sri Lanka and to prevent any commercial exploitation of such species.

6. The scope of iRoad 2 is to rehabilitate and upgrade existing PS, PRDA and RDA roads with no widening of Right of Way (ROW). Thus, the program will not fall within the "Prescribed Project" category of NEA requiring an Initial Environment Examination (IEE) or EIA. As some of the project roads are located within the Coastal Zone, RDA shall obtain recommendations from Coast Conservation and Coastal Resource Management Department. Any road that is located fully or partially within or in the buffer zone of a Strict Nature Reserve (SNR), Nature Reserve (NR) or National Park (NP) will not be selected for improvements. RDA will consult Department of Wild Life Conservation in case a road is located fully or partially within other protected area other than a SNR, NR or NP. Other than the above requirements, specific approvals/ clearances,

permits and licenses will be required to be obtained during pre-construction and construction stages of the investment program.

7. ADB's Safeguard Policy Statement, 2009 (SPS) consists of policy objectives, scope and triggers, and principles on Environment, Indigenous People and Involuntary Resettlement safeguards. The SPS involves a structured process of impact assessment, planning, and mitigation to address the adverse effects of projects throughout the project cycle.

8. RDA as the Project Implementing Agency will establish Project Implementing Units (PIUs) in each province with the Western Province PIU also acting as the central coordinating PIU. Each PIU will be headed by a Project Director (PD) supported by an expert staff and support staff. Each PIU will have an Environment and Social Unit (ESU). A Survey and Preliminary Engineering (SAPE) works team will assist the central coordinating PIU in preparation of relevant safeguards document during SAPE work stage of the investment program. The Environment and Social Development Division (ESDD) of RDA will also assist the coordinating PIU and other PIUs established at Provincial level to execute safeguard requirements. Project Implementing Consultants (PICs) will also be appointed at province level to assist the provincial PIUs.

### **C. Anticipated Environment Impacts**

9. The investment program will involve rehabilitation, upgrading and maintaining roads belonging to PS, PRDA and RDA to suit all weather conditions. Carriageway width for PS and PRDA roads will be from 2.5 m to 5.5 m; RDA roads will be improved within a carriageway from 5.5 m to 8.0 m. All these improvements will be carried out within the available ROW, and no land acquisition will be carried out. Most of the adverse impacts will occur during the construction stage of the investment program. Impacts on the local environment in the form of air pollution, water pollution, generation of noise and vibration, soil erosion, slope failures and landslides, generation of solid waste, loss of vegetation including damages to coastal habitats and aesthetic beauty are some of the key negative environment impacts. Worker force safety, safety of public and vehicles, conflicts between residents of an area and worker force are some of the social issues that would arise during the construction stage. Suitable mitigation measures will be developed to address these issues, and specific issues that are observed during preparation of road specific environment checklists. These measures will be included in the environment assessment reports prepared for each province. Due to improvements to the existing carriageways, it is expected that there will be a minor increase in Green House Gas (GHG) emissions. Therefore, it is suggested to analyze the changes in GHG emissions and consider other climate change impacts. However, the overall impact of the investment program is expected to be positive.

### **D. Environment Assessment Procedures**

10. Roads to be included in this investment program will be selected based on a multi criteria list. Road selected will further be subjected to the following screening criteria on environment safeguards:

- i. Roads that will cause significant and irreversible environmental impacts that would trigger classification as environment 'Category A' in accordance with the SPS will NOT BE INCLUDED in this investment program. A road project improvement work will be classified as environment 'Category A' if the road works are located fully or partially inside a legally protected area or critical habitat area

- or have direct and irreversible impacts, and adversely impact on cultural heritage sites of national and international significance.
- ii. Roads falling in part or whole inside or within the buffer zone of a SNR, NR or NP will NOT BE SELECTED under the investment program.
- iii. Rehabilitation of roads falling adjacent to other protected areas (such as sanctuaries or protected wet lands) or eco-sensitive areas WILL BE INCLUDED only if there is NO WIDENING OF THE ROAD “RIGHT OF WAY” OR ACQUIRING of land from the protected area or eco-sensitive area. For such project roads, proper consultations will be held with the Department of Wildlife Conservation, local community and other relevant stakeholders, and appropriate clearances or endorsements should be sought if required.
- iv. Rehabilitation and improvement work of the project road must have minimal or no long term impacts on other forms of sensitive ecological habitats such as marshes, natural streams, tanks and related wetland habitats.

11. An environment checklist will be completed for each road to understand the nature and significance of environment impacts. One Rapid Environment Assessment (REA) checklist will be developed for each province considered under this program. Categorization of the program will be done on a province basis based on the information from province specific REA checklist. All project roads within the Provinces under this investment program will fall under category B, and there will be no category A tranches. For category B projects, Initial Environment Examination Reports (IEER) will be prepared for each province. Basic information questionnaires will be developed on a province basis and submitted to Central Environmental Authority (CEA). The IEER will include one general or standard Environment Management Plan (EMP) that will cover all possible impacts and mitigation measures within the respective province. Province level draft IEERs including standard EMPs will be submitted to ADB for review and approval in a timely manner to allow disclosure of the draft final report on the ADB website before the loan approval.

#### **E. Consultation, Information Disclosure and Grievance Redress Mechanism**

12. The need of effective and meaningful public consultation and information disclosure during the project cycle is clearly stipulated in SPS. Meaningful public consultations will be carried out from early stage of the program (i.e. from SAPE works stage). Women and vulnerable groups (handicapped people, senior citizens, school children) will be encouraged to participate during these consultations, and every effort will be made to engage as many stakeholders as possible.

13. According to the requirements of the SPS, for environment category B projects the respective draft IEER will be disclosed before the Management Review Meeting (MRM), or equivalent meeting or approval of the respective tranche if there is no MRM. Project notice boards will be displayed at all project roads. Information in these boards will include: nature of construction works, road length, construction period, name of contractor and contract sum. The information will be displayed in all three languages.

14. A Grievance Redress Mechanism (GRM) will be established at each province. There will be three levels in the GRM. The first level involving representatives of PIU, PIC and contractors; the second level will be established at Grama Niladhari level, while the third level will be at Divisional Secretary level. Any grievance will be recorded in a request, suggestion and complaint register maintained at respective contractor's office. Any public grievance shall be attended and settled within six weeks from receiving such complaint.

## **F. Institutional Arrangement**

15. The Ministry of Higher Education and Highways (MOHEH) will be the executing agency for this investment program, while RDA will be implementing agency. The Western Province PIU established under the Director General/ RDA will be the central coordinating PIU. PIUs will be established at each of the provinces. Each PIU will have an Environment and Social Unit (ESU) staffed with a Senior Environment Safeguard Officer, a Senior Social Safeguard Officer and their Assistants. The coordinating PIU will be supported by a SAPE works team during SAPE work stage. PICs will also be established at provincial level to assist PIUs in supervising the designs and civil works of the contractors. Each PIC will include an Environment Safeguard Consultant who will review and approve safeguard documents prepared by contractor/s and monitor safeguards implementation. Implementing environment safeguard requirements during the project cycle will be the responsibility of MoHEH, RDA and PIUs, ESDD, PICs, civil work contractors, and even with CEA, CC & CRMD, Department of Wildlife Conservation and ADB.

## **G. Monitoring and Reporting**

16. Monitoring the implementation of package specific Environment Management Action Plan (EMAP) will be carried out during pre-construction, construction, and operation and maintenance stages by the environment safeguard specialist of each PIC. ESUs will also carry out periodic monitoring visits, and ESDD will visit sites on a bi-annual basis. Monitoring checklists will be prepared for each road once during pre-construction, one to three during construction and one per year during operation and maintenance stage. An annual monitoring report will be prepared by each PIC to be submitted to ADB through PIU. Satisfactory environmental due diligence reports will also be prepared by PIC of each province and submitted through their respective PIUs to ADB before approval of any subsequent tranche.



## I. INTRODUCTION

1. Sri Lanka being a country in the Asian region has shown exceptional figures in social development indicators, such as life expectancy and literacy rate, compared to many developing countries. The country has shown a steady progress in its economy in the recent past, but poverty level continues as an issue. As per recent statistical information of Department of Census and Statistics, the estimated population of the country in mid-year 2016 was around 21 million. Out of this population, it is estimated that around 17 million (or around 80%) live in peri urban and rural areas, and it is a known fact that the majority of the poor in the country are living in these peri urban and rural areas. Majority of this people is working in agriculture or agriculture related employment which does not yield substantial earnings. Further, the poor links between, or isolation, from social and economic infrastructures has limited people in peri urban and rural areas from earning through off-farm activities.

2. The Government of Sri Lanka (GoSL) identifying the need to improve the connectivity between rural communities and social economic centers formulated the Integrated Road Investment Program (iRoad program) in year 2014 to (i) improve road conditions between the selected rural communities and socioeconomic centers, and (ii) enhance capacity of road agencies. GoSL requested ADB to finance the investment program under a time slice Multitranche Financing Facility (MFF). Under this investment program ADB approved the first tranche in January 2015, and the program is now being implemented in Southern, Central, Sabargamuwa, North Western and North Central Provinces and Kalutara District in Western Province.<sup>1</sup>

3. Following the successful implementation of the program in above provinces and Kalutara district, the GoSL identified the need for a second program that would benefit peri urban and rural population in Northern, Eastern, Uva and Western Provinces. The program is to be called as Second iRoad Program (iRoad 2). The program will be executed by Ministry of Higher Education and Highways (MoHEH) and implemented by Road Development Authority (RDA).

### A. Background of the investment program

4. Around 5,600 km of roads (including class A & B National roads) located in above four provinces were selected based on the multi criteria list (**Appendix 1**) which was adopted during iRoad program (long list of roads). Survey and Preliminary Engineering (SAPE) works for these roads are to be conducted which includes environment categorization and assessments. This road list (long list) will then be short listed based on environment, social and construction cost factors. Based on the geographic spread and cost of construction, each district will have between two (2) to four (4) contract packages. Reconstruction and rehabilitation of Pradeshiya Sabha (PS) and Provincial Road Development Authority (PRDA) roads will be for a period of two (2) years with a maintenance period of three (3) years. For class A and B road, under the purview of the RDA, the reconstruction and rehabilitation works will continue for two (2) years followed by another five (5) years of maintenance. The number of roads selected in the long list for each district with total lengths are summarized in table 1 below.

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<sup>1</sup> Tranche two and three were approved in July 2015 and March 2016.

**Table 1: A Summary of Roads under iRoad 2**

| Province     | District    | Rural roads (PS and PRDA) |               | Road Development Authority roads |              |
|--------------|-------------|---------------------------|---------------|----------------------------------|--------------|
|              |             | No.                       | Length (km)   | No.                              | Length (km)  |
| Northern     | Jaffna      | 189                       | 345.0         | 5                                | 140.3        |
|              | Kilinochchi | 63                        | 223.5         |                                  |              |
|              | Mannar      | 120                       | 182.9         |                                  |              |
|              | Vavuniya    | 78                        | 252.5         |                                  |              |
|              | Mullaitivu  | 63                        | 182.9         |                                  |              |
| <b>Total</b> |             | <b>518</b>                | <b>1327.0</b> | <b>5</b>                         | <b>140.3</b> |
| Eastern      | Batticaloa  | 170                       | 263.7         | 16                               | 155.8        |
|              | Trincomalee | 154                       | 243.5         |                                  |              |
|              | Ampara      | 385                       | 705.8         |                                  |              |
| <b>Total</b> |             | <b>709</b>                | <b>1213.0</b> | <b>16</b>                        | <b>155.8</b> |
| Uva          | Monaragala  | 119                       | 671.6         | 7                                | 72.9         |
|              | Badulla     | 206                       | 772.4         |                                  |              |
| <b>Total</b> |             | <b>325</b>                | <b>1497.0</b> | <b>7</b>                         | <b>72.9</b>  |
| Western      | Colombo     | 296                       | 360.0         |                                  |              |
|              | Gampaha     | 394                       | 484.0         |                                  |              |
|              | Kalutara    | 267                       | 564.0         |                                  |              |
| <b>Total</b> |             | <b>957</b>                | <b>1408</b>   |                                  |              |

Source: Road Development Authority (as at 24 May, 2017).

5. The investment program is planned to be implemented over a period of ten (10) years under a series of tranches (a time slice MFF as in iRoad program). The program will follow guidelines and fulfill the requirements stipulated under national laws and policies related to environment safeguards as well as the ADB Safeguard Policy Statement, 2009 (SPS). This Environment Assessment and Review Framework (EARF) is developed to guide: (1) survey and preliminary engineering works teams in road screening, selection, categorization and impact assessments during project preparatory works; and (2) project implementation and monitoring of environment safeguards; according to requirements of the GoSL and ADB.

6. Proposed work under the investment program will involve rehabilitation and improvement of existing rural roads under PS, PRDA and national roads under RDA (Class A & B roads) to all weather standard status. Rehabilitation works will include improving pavements/road surface, construction of side drains and embankments, widening or replacement of culverts, cause ways and bridges. All rehabilitation and improvement works will be carried out mainly within the available right of way (ROW) of each candidate road. For PS and PRDA roads, the improved carriageway width will be from 2.5 m to 5.5 m, while carriageway of roads under RDA will be improved up to 5.5 m to 8.0 m.

## **II. LEGAL FRAMEWORK AND INSTITUTIONAL CAPACITY**

### **A. Legal Framework of GoSL on Environment Safeguards**

#### **1. National Environment Act (NEA) and Environment Impact Assessment (EIA) System**

7. The National Environment Act No. 47 of 1980 (NEA) is considered as the basic national charter for *protection and management* of the environment. NEA was amended by Act No. 56 of 1988 to include provisions for protection, management and *enhancement* of the environment. This amendment also gave provisions for the Environment Impact Assessment (EIA) process as

indicated under part IV C as “Approval of Projects”. Part VI C of NEA was again amended by Act No. 53 of 2000.

8. Section 23 Z of NEA states that the EIA process applies only to “Prescribed Projects” (PP) which have been specified by the Minister in-charge of the subject of Environment in Gazette Extra-Ordinary No. 772/22 of 24 June 1993. The list of “Prescribed Projects” was amended by the Gazette Extra-Ordinary No. 1104/22 of 5 November 1999.

9. The EIA process is implemented through designated Project Approving Agencies (PAA) as prescribed by the Minister under section 23 Y of the NEA. The list of PAA are given in Gazette Extra-Ordinary No. 859/14 of 23 February 1995, Gazette Extra-Ordinary No. 978/13 of 4 June 1997 and Gazette Extra-Ordinary No. 1373/6 of 29 December 2004.

10. Section 23 CC of NEA regulates the procedure the PAA shall adopt in approving any Prescribed Project submitted for approval. The section also stipulates that the procedure shall be based on the guidelines prescribed by the Minister for such purpose.

11. The NEA has identified two (2) levels in the EIA process for projects listed as “Prescribed Projects”. The first level which is “Initial Environment Examination” or IEE is an assessment of possible impacts of a project with a view of determining whether the impacts are significant or not. The IEE shall address the possible impacts, their intensity and measures to avoid, minimize or mitigate such adverse impacts. The PAA will award a conditional approval for the proposed project based on the findings of the IEE which will be reviewed by a Technical Evaluation Committee (TEC) appointed by the PAA. The TEC shall also submit their recommendations to the conditional approval. The second level which is the “Environment Impact Assessment” or EIA is a more comprehensive assessment where a comprehensive documentation is done considering alternatives to the proposed project with the opinion of least impact on environment is identified and assessed. Measures shall be discussed to avoid, minimize or mitigate adverse impacts as part of this assessment. An environment cost benefit analysis will also be carried out wherever possible and an Environment Management Plan (EMP) will also be prepared. The EIA report will be opened to the public for comments for a period of 30 working days before awarding the approval which will be a conditional approval given by the respective PAA. The conditional approval will be based on the findings of the EIA, public comments and recommendations made by the TEC.

12. The act is administered through the Central Environmental Authority (CEA) which was established in year 1981 under the NEA and functions under the Ministry of Mahaweli Development and Environment.

## **2. Coast Conservation Act (CCA)**

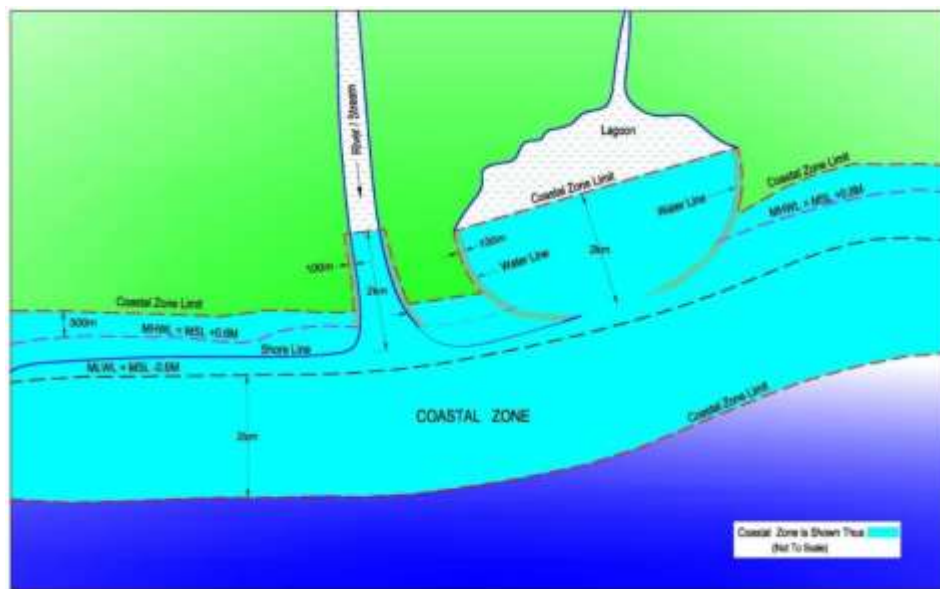
13. In year 1963, a Coast Protection Unit was established within the Colombo Port Commission, with the realization that a comprehensive approach to coastal resources management was required. Based on the observations made on coastal development during the 1970’s, the government established a Coast Conservation Division under the Ministry of Fisheries. In 1981, the parliament enacted the Coast Conservation Act (CCA) No. 57 of 1981. This act decreed the appointment of a Director of Coast Conservation with following responsibilities: (1) Administration and implementation of the provisions of the Act; (2) Formulation and execution of schemes of the work for coast conservation within the Coastal Zone; and (3) Conduct of research, in collaboration with other Departments, Agencies and Institutions for the purpose of coast conservation. The act is administered by the Coast Conservation & Coastal

Resource Management Department (CC & CRMD) which was established by upgrading the Coast Conservation Division.

14. The act was amended in 2011 through Coast Conservation (Amendment) Act, No. 49 of 2011 (Coast Conservation and Coastal Resource Management Act). Through this amendment the scope of CC & CRMD extended from conservation to management of coastal resources.

15. The Coast Conservation and Coastal Resource Management Act is empowered within the “Coastal Zone” as defined in the Act as follows:

16. *“The area lying within a limit of three hundred (300) meters landwards of the Mean High Water Line and a limit of two (2) kilometers seaward of the Mean Low Water Line and in the case of rivers, streams, lagoons, or any other body of water connected to the sea, either permanently or periodically, the landward boundary extends to a limit of two (2) kilometers, measured perpendicular to the straight base line drawn between the natural entrance points thereof and shall include the waters of such rivers, streams and lagoons or any other body of water so connected to the sea, and shall also include the area lying within a further extended limit of hundred (100) meters inland from the Zero Mean Sea Level along the periphery.”* The Coastal Zone is depicted in figure 1 below.



**Figure 1: The Coastal Zone of Sri Lanka**

17. Activities within the Coastal Zone prohibited by the Coast Conservation Department are:

- Removal of coral other than for research purposes;
- Mining of sand, except in areas identified by the Coast Conservation Department;
- Development within 200 meters of designated archaeological sites; and
- Any development activity that will significantly degrade the quality of designated natural areas of exceptional value.

18. All the other development activities within the Coastal Zone may require permits. The Director shall issue a permit if:

- The activity is consistent with management policies stated in chapter 3, 4 and 5 of Coastal Zone Management Plan.

- The activity is not prohibited by the Coastal Zone Management Plan.
- The activity is outside designated set- back lines.

19. The Act ensures all permitted activities within the Coastal Zone are met with National Standards set by the Sri Lanka Standards Institution (SLSI) for the relevant environmental parameters, and where such standers are not available, the interim standers of the Central Environmental Authority.

- The activity allows for continuation of existing fishing activities.
- The activity is consistent with the intent agency zoning schemes and/or guidelines recognized by Coast Conservation Department.

20. Activities within the Coastal Zone prohibited by the Coast Conservation Department are:

- Removal of coral other than for research purposes;
- Mining of sand except in areas identified by the Coast Conservation Department;
- Development within 200 meters of designated archaeological sites; and
- Any development activity that will significantly degrade the quality of designated natural areas of exceptional value.

21. All the other development activities within the Coastal Zone may require permits. The Director shall issue a permit if:

- The activity is consistent with management policies stated in chapter 3, 4 and 5 of Coastal Zone Management Plan.
- The activity is not prohibited by the Coastal Zone Management Plan
- The activity is outside designated set- back lines.

### **3. Fauna and Flora Protection Act (FaFPA)**

22. The Act originated as an Ordinance in year 1937 (Ordinance No. 2 of 1937) with the objective of providing protection to fauna and flora of the country. The Ordinance was amended by Act No. 49 of 1993 and No. 22 of 2009 to enhance the scope of Fauna and Flora Ordinance in the areas of Protection, Conservation and Preservation of fauna and flora of Sri Lanka. The amendments also prevent any commercial exploitation of such fauna and flora. The Department of Wild Life Conservation is authorized to administer this Act.

23. Other than the above key environmental legislation under GoSL, there are a number of other environmental laws and regulations that are applicable to this investment program. These laws and legislations are summarized in below table.

**Table 2: Applicable National Laws and Regulations for the Investment Program**

| <b>Item</b> | <b>Legislation</b>   | <b>Relevance and main content</b>  | <b>Authorizing institution</b> |
|-------------|--|--|--------------------------------|
| 01.         | National environmental protection and quality regulations under Extraordinary gazette notification No. 1534/18 and No. 1533/16 of 2008 under NEA section 32 & 23A, 23B | This regulates the discharge and deposit of any kind of waste or emission into the environment and stipulates requirements for an Environmental Protection License (EPL) depending on the project activity. Examples of activities requiring and EPL are: asphalt processing plant, concrete batching plants, treatment plants, sewerage networks, mechanized mining activities etc. | CEA                            |
| 02.         | National Environmental   | Provides standards for discharging effluents into  | CEA                            |

| Item | Legislation   | Relevance and main content   | Authorizing institution   |
|------|---|--|---------------------------|
|      | (Protection and Quality) Regulation No. 1 of 1990 published in Gazette Extraordinary No. 595/16 of February, 1990   | inland surface water during proposed project activities.   |                           |
| 03.  | National Environmental (Ambient Air Quality) Regulations, 1994, published in Gazette Extraordinary, No. 850/4 of December, 1994 and amendment gazette No. 1562/22 of 2008 | Provides standards for emissions to the atmosphere during proposed project activities.   | CEA                       |
| 04.  | National Environmental (Noise Control) Regulations No.1 of 1996 and its amendments  | Regulates maximum allowable noise levels for construction activities at the boundary of such construction site/ area during proposed project activities  | CEA                       |
| 05.  | National Environmental (Vehicle Horns) Regulations, No. 1 of 2011   | Regulates maximum allowable noise emanating from vehicular horns on a highway or road any motor vehicle use during project construction activities   | CEA                       |
| 06.  | National Environmental (Municipal Solid Waste) Regulations, No. 1 of 2009   | Regulates dumping municipal solid waste along sides of any national highway or at any place other than places designated for such purpose by the relevant local authority during proposed project activities   | CEA                       |
| 07.  | Forest Act No. 34 of 1951   | This act is to consolidate and amend the Ordinance relating to the conservation, protection and management of forest and forest resources. For control of felling and transport of timber and for matters connected therewith or incidental thereto.   | Forest Department         |
| 08.  | Felling of Trees Control Act No.9 of 1951 as amended through Act No. 30 of 1953   | This Act sought to prohibit and control felling of specified tree species (mainly intended to stop indiscriminate felling of specified trees) in the country.  | Forest Department         |
| 09.  | Water Resources Board Act No.29 of 1964 and (Amendment) Act, No. 42 of 1999   | The act controls and regulates developments (including conservation and utilization) of water resources; prevention of pollution of rivers, streams and other water resources; formulation of national policies relating to control and use of water resources.  | Water Resources Board     |
| 10.  | Soil Conservation Act, No. 25 of 1951 and Amended No. 24 of 1996  | This Act makes provisions for the enhancement of productive capacity of soil; to restore degraded land for the prevention and mitigation of soil erosion; for the conservation of soil resources and protection of land against damage by floods, salinity, alkalinity, water logging; and to provide for matters connected therewith or incidental thereto. | Department of Agriculture |
| 11.  | Explosives Act No. 36 of 1976   | To provide control of explosions and regulations of matters connected with explosive activities  | Ministry of Defense       |

| Item | Legislation   | Relevance and main content   | Authorizing institution   |
|------|---|--|---|
|      |   | related with the project.  | (MOD)   |
| 12.  | Municipal Councils Ordinance No. 29 of 1947, the Urban Councils Ordinance No. 61 of 1939 and the Pradeshiya Sabha Act No. 15 of 1987 as amended in 2010 | Regulates and control actions pertaining to socioeconomic development such as roads, culverts, bridges, ferries, waterways and other means of local transport and related site clearance for constructing worker camps, site offices etc. and methods taking place within the command area relevant to government laws and regulations.  | Ministry of Local Government and Provincial Council                                       |
| 13.  | Flood Protection Ordinance No.04 of 1924, No 22 of 1955   | An ordinance for protection of areas subjected to damage from floods. This includes declaration of flood areas, preparation of schemes for flood protection and other rules and regulations regarding flood in the country.  | Irrigation Department   |
| 14.  | Crown (State) Land Ordinance No. 8 of 1947 and Act No. 13 of 1949   | An ordinance/ Act to make provision for the grant and disposition of crown (State) lands in Sri Lanka; for the management and control of such lands and the foreshore; for the regulation of the use of the water of lakes and public streams; and for other matters incidental to or connected with the matters related to proposed project.  | Land Commissioner General's Department  |
| 15.  | Agrarian Development Act No. 46 of 2000 (Section 32)  | This act regulates using paddy land for any other purpose other than agricultural cultivation without the written permission of the Commissioner General.  | Department of Agrarian Development  |
| 16.  | Land development statuette No. 7 of 2002 the western province provincial council, amendment No. 1287/26 of 2003   | A statute for regularizing utilization of state lands situated within the western province either by state or the provincial council, for regulating the distributing of the aforesaid lands and lands in possession of the provincial council, for augmenting productivity of lands and for matters connected with or incidental to them this statute is in compliance with the Crown (State) Land Ordinance No. 08 of 1947 (chapter 454) and the land development ordinance No.19 of 1935 chapter 464 as amended by land development (amendment) acts, No. 16 of 1969, No. 27 of 1981, No. 22 of 1998, No. 22 of 1995. State Land (Recovery of Possession) Act No. 07 of 1979. | Governor – Western Province Provincial Council and Land Commissioner General's Department |
| 17.  | Sri Lanka Land Reclamation And Development Corporation Act 15 of 1968 as amended by Act No 52 of 1982   | This act established the Sri Lanka Land Reclamation and Development Corporation which grants permission for the public to fill marshy land subject to provision of storm water drainage.   | Sri Lanka Land Reclamation and Development Corporation                                    |
| 18.  | National Thoroughfares Act, No. 40 of 2008  | This act is also known as the RDA Act provide directive for planning, design construction, development, maintenance and administration of an integrated public road network in Sri Lanka.  | Road Development Authority  |
| 19.  | Urban Development Authority (UDA) Law No. 41 of 1978  | This law provides for the establishment of the UDA to promote integrated planning and implementation of economic, social and physical  | Urban Development Authority   |

| Item | Legislation  | Relevance and main content  | Authorizing institution                      |
|------|--|---|--|
|      | and Urban Development Projects (Special Provisions) Act No. 2 of 1980  | development of certain areas as may be declared by the minister to be urban development areas and for matters connected with the relevant project activities.<br><br>Urban Development Projects (Special Provisions) Act No. 2 of 1980 is an act to provide for the declaration of lands urgently required for carrying out urban development projects and to provide for matters connected there with relevant project activities. | (UDA)  |
| 20.  | Town and country planning ordinance No. 13 of 1946 and The Town & Country Planning (Amendment) Act, No. 49 of 2000 | This regulates the National Physical Plan with transport as the main component.   | National Physical Planning Department (NPPD) |
| 21.  | Buddhist Temporalities Ordinance No. 19 of 1931  | This act provides necessary assistance to administer and protect the property of Viharas, interventions to settle disputes regarding property of Viharas and makes recommendations to release money to be paid as compensation in respect of property of Viharas acquired by government for any development project.  | Department of Buddhist Affairs               |
| 22.  | Cemeteries and Burial Grounds Ordinance No.9 of 1899 and amendments  | The act regulates any disturbance, removal of burial, monuments and use of such areas for development project.  | Local Government Authority                   |
| 23.  | Antiquities Ordinance No. 9 of 1940 and amendments   | The Act regulate activities of projects located in close proximity of any archeological reserves.   | Department of Archeology                     |
| 24.  | Unexploded Ordinance   | To ensure safety of work force during constriction period in roads located in areas were the armed conflict existed (i.e. in Northern and Eastern Provinces)  | Ministry of Defense                          |

24. The scope of iRoad 2 includes rehabilitation and upgrading of existing PS, PRDA and RDA roads with no widening of the existing Right of Way. According to the Gazette Extra-ordinary No. 772/22 of 24th June 1993 and subsequent amendments, all rehabilitation works for existing highways and roads do not fall within the category of Prescribed Projects. Hence, it is likely that the project roads under the investment program will not be required to prepare an IEE or EIA for securing an environmental clearance from the CEA. However, RDA shall submit a BIQ for each province considered under iRoad 2, including information on the scope of project with the list of roads to be rehabilitated and improved. Based on this information, RDA shall obtain a clearance from CEA (as done during iRoad) with any conditions or guidelines.

25. Some of the candidate roads in Northern, Western, and Eastern Provinces are located within the Coastal Zone as defined in the CCA. Thus, RDA shall submit preliminary information and obtain clearance/recommendations from CC & CRMD for proposed rehabilitation and improvements to such road sections.

26. If a project road falls adjacent to the boundary or inside a protected area (other than a Strict Nature Reserve, Nature Reserve or National Park), necessary clearance will need to be



sought from the Department of Wildlife Conservation (DWLC) and/or Forest Department (FD) even if there will be no widening of the road ROW. Depending on the sensitivity of the protected area, the DWLC may require an IEE or EIA study for the respective road. For roads within or adjacent to gazette forest lands, all developments of such sections will be under supervision of FD. Any road that is located partially, or fully, within, or in, the buffer zone of a Strict Nature Reserve (SNR), National Park (NP) or Nature Reserve (NR) will not be selected for improvements.

27. Other than the above requirements, specific approvals/clearances, permits and licenses that need to be obtained for the proposed program are out lined under table 3. These approvals/clearances, permits and licenses are based on the laws and regulations under the NEA, CCA, FaFPA and other Acts and regulations listed in table 2.

**Table 3: Approvals/Clearances, Permits and Licenses Applicable for the Investment Program**

| <b>Project stage</b>  | <b>Approvals</b>   | <b>Project related activity</b>   | <b>Relevant agency</b>                      | <b>Responsible party/ies</b>   |
|---|--|---|---|--|
| Pre-construction stage (Before mobilization or contractor/s)                                      | Environment clearance  | Implementation of the project within Provinces of North, East, Uva and Western.   | CEA   | RDA, Project coordinating PIU assisted by ESDD <sup>2</sup>                                  |
|   | Permit or clearance from CC & CRMD                                 | Implement road rehabilitation and upgrading activities within the Coastal Zone  | CC & CRMD                                   | RDA, Project coordinating PIU assisted by ESDD   |
|   | Certificate of Unexploded Ordinance (UXO certificate)              | Implementation of the project within Provinces of North and East  | Ministry of Defense                         | RDA, Project coordinating PIU and Provincial PIUs of Northern and Eastern Provinces          |
| Pre-construction stage (With mobilization of contractor/s but before commencement of civil works) | Recommendation from National Building Research Organization (NBRO) | Clearing of vegetation and cutting of slopes in hilly terrains especially in Uva Province and Kalutara District in Western Province | National Building and Research Organization | RDA, Project coordinating PIU and Provincial PIUs Uva and Western Provinces assisted by ESDD |
|   | Environmental Protection License (EPL) <sup>3</sup>                | Opening and operation of material extraction sites (borrow pits and quarry sites); Siting and operation of                          | CEA   | Contractor/s under direct guidance of PIC <sup>4</sup>                                       |

<sup>2</sup> Project coordinating PIU: The Project Implementing Unit under the Director General's Office, RDA which is functioning as the project coordinating unit for the investment program. ESDD: Environment and Social Development Division of RDA.

<sup>3</sup> EPL, IML, Explosive permits and Trade Licenses should be renewed as per the conditions stipulated in these documents.

<sup>4</sup> PIC: Project Implementing Consultant who will be appointed on a province basis for this investment program (iRoad 2).

| <b>Project stage</b> | <b>Approvals</b>  | <b>Project activity related</b>   | <b>Relevant agency</b>  | <b>Responsible party/ies</b>                                       |
|----------------------|---|---|---|--|
|                      |   | asphalt plants, crusher plants, concrete batch mixing plants etc.   |   | Contractor/s under direct guidance of PIC                          |
|                      | Industrial Mining License (IML)                               | Operation of quarries, borrow sites and other material extraction sites.  | Geological Survey and Mines Bureau (GS & MB)  |  |
|                      | Explosive Permits   | For blasting activities within the quarry or road side.   | Ministry of Defense   |  |
|                      | Trade License and machinery permits                           | Trade license should be obtained for asphalt plants, concrete batch mixing plants, crusher plants, quarry sites and borrow pits.  | Respective Provincial Council or Pradeshiya Sabha   |  |
| During construction  | Approval from relevant local government agencies              | Opening and operation of construction material storage sites other than aggregate and gravel, yards, any labour camp with more than 25 labourers, and waste disposal sites. | Respective Provincial Council or Pradeshiya Sabha   | Contractor/s under direct guidance of PIC                          |
|                      | Approval for removal of trees                                 | Tree felling activities related to road rehabilitation and improvement works.   | Divisional Secretariat, Forest Department   | PIU of province with assistance from PIC                           |
|                      | Approval for activities near paddy lands                      | Ground preparation for ROW and side drains.   | Department of Agrarian Development  | PIU of province with assistance from PIC                           |
|                      | Consent and recommendations from relevant government agencies | Construction of bridges, culverts and other drainage systems, land filling, dredging activities.  | Department of Irrigation, Department of Agrarian Services, Local government authority, Land Reclamation and Development Cooperation | PIU of province with assistance from PIC and relevant contractor/s |

28. Sri Lanka is also a signatory to a number international agreements and conventions related to environmental conservation. Those that are relevant for this investment program are provided below:

- Conventions on Wetlands of International Importance Especially as Water Fowl habitats (Ramsar)
- Convention concerning the protection of the World Cultural and Natural Heritage
- Convention on International Trade in Endangered Species of Wild Fauna & Flora (CITES)
- Convention on the conservation of Migratory Species of Wild Animals (CMS 1979)
- United Nations Framework Convention on Climate Change

- Convention on Biological Diversity
- Plant Protection Agreement for Asia and the Pacific region

## **B. ADB Safeguard Policy Statement**

29. ADB's Safeguard Policy Statement (SPS) consists of policies on the Environment, Indigenous People and Involuntary Resettlement. SPS involves a structured process of impact assessment, planning, and mitigation to address the adverse effects of projects throughout the project cycle. This policy requires that (i) impacts are identified and assessed early in the project cycle; (ii) plans to avoid, minimize, mitigate, or compensate for the potential adverse impacts are developed and implemented; and (iii) affected people are informed and consulted during project preparation and implementation. The policies apply to all ADB-financed projects, including private sector operations, and to all project components.

30. Proposed projects or tranches (for MFF's) are screened according to type, location, scale, sensitivity, and the magnitude of their potential environmental impacts, including direct or indirect, induced, and cumulative impacts. Projects are classified into the following four categories:

31. **Category A:** A proposed project is likely to have significant adverse environmental impacts that are irreversible, diverse, or unprecedented. These impacts may affect an area larger than the sites or facilities subject to physical works. An EIA, including an environmental management plan, is required. The draft EIA report is required to be disclosed 120 days before consideration for approval by the ADB board.

32. **Category B:** The proposed project's potential adverse environmental impacts are site-specific. Few if any of them are irreversible; and in most cases, mitigation measures can be designed more readily than for category A projects. An IEE report, including an EMP, is required.

33. **Category C:** A proposed project is likely to have minimal or no adverse environmental impacts. An EIA or IEE is not required, although environmental implications need to be reviewed.

34. **Category FI:** A proposed project involves the investment of ADB funds to or through a financial intermediary. The financial intermediary must apply and maintain an environmental and social management system, unless all of the financial intermediary's business activities have minimal or no environmental impacts or risks.

## **C. Institutional capacity**

35. RDA as the Project Implementing Agency (PIA) will establish PIUs in each province with the Western Province PIU also acting as the central coordinating PIU of RDA. Each PIU will be headed by a Project Director (PD) supported by expert staff and support staff including Senior Environment Safeguards Officer and Social Safeguards Officer and Assistants.

36. The central coordinating PIU will be responsible to carry out all Survey and Preliminary Engineering (SAPE) works including environment assessments and preparation of environment related documents as listed in this EARF. A team of experts including Environment Specialists will assist the coordinating PIU to carry out these assessments and prepare the necessary reports. The provincial level PIUs will be responsible for overall implementation and monitoring of environment safeguards compliance in their respective province.

37. RDA has a separate division placed directly under the Director General (DG) to cover environment and social safeguard requirements at all stages of road and highway projects implemented by RDA. Headed by a director, the Environment and Social Development Division (ESDD) was established under a Technical Assistance (TA) provided by ADB in 2006. This division is now considered as the environment and social safeguard arm of RDA. At present the ESDD is manned by around 20 safeguard officer staff and assistants.

38. Since ESDD is responsible for all projects under RDA and given the scale of the iRoad 2, this division will not have adequate time and resources to implement and monitor safeguards for the investment program. Therefore, a separate safeguards team (an Environment and Social Unit or ESU) dedicated to the investment program will be created within each PIU for managing safeguards. ESDD will provide technical support and monitor the implementation of safeguards under the investment program by visiting each province, at least, on a biannual basis. The institutional setup for iRoad 2 is discussed in detail under the section on “Institutional Arrangements”.

### **III. ANTICIPATED ENVIRONMENT IMPACTS**

39. Second Integrated Road Investment program will be implemented in a diverse geographic area of the country. Some of the roads selected in Northern, Eastern and Western Provinces are located within the Coastal Zone as defined in the CCA. Uva Province is located within the south-east slopes of the island. Kalutara district in Western Province and Badulla District in Uva Province are identified as districts that are prone to landslides. Thus, it is important to identify and assess the magnitude of project induced adverse impacts and develop suitable measures to avoid, minimize and mitigate such adverse impacts.

40. The investment program will involve rehabilitation and upgrading of existing roads belonging to Pradeshiya Sabha, Provincial Councils and Road Development Authority to suit all weather standard status. Rehabilitation and upgrading works will include improving pavements/road surface; construction of road side earth shoulders; construction of road side drains and embankments; repairing, widening or replacement of existing culverts, cause ways and bridges; construction of new culverts; construction of retaining walls; and fixing of road furniture. Rehabilitation and improvement works for PS and PRDA roads will be carried out within a ROW from 2.5 m to 5.5 m, while RDA roads will be improved within a carriageway from 5.5 m to 8.0 m, with no acquisition of land.<sup>5</sup>

41. Most of the adverse impacts will be occurring during the construction stage of the investment program. Pollution of local environment in the form of air pollution, water pollution, generation of noise and vibration, soil erosion, slope failures and landslides, generation of solid waste, loss of vegetation including damages to coastal habitats and aesthetic beauty, damages to irrigation and drainage canals are some of the key issues leading to adverse environment impacts. Worker force safety, safety of public and vehicles; conflicts between residents of an area and worker force are some of the social issues that would arise during the construction stage. Key activities to be undertaken are listed below:

- Clearing of overgrown road side vegetation;
- Earth works including road edge improvement works, embankment improvement works and construction of temporary diversions;

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<sup>5</sup> Small strips of land from land lots adjacent to roads may be required to improve road side drainage or to include shoulders for safety needs. Such small strips of land will be taken through the process of “Voluntary Land Donation” as elaborated in the Resettlement Framework of iRoad 2.

- Sub-base and road base works;
- Widen, repair or reconstruct existing culverts, bridges, causeways and construct new culverts;
- Cutting of slopes in hilly terrain;
- Road pavement works including asphaltting;
- Fixing of road furniture; and
- Marking of road edge lines and center line for RDA roads.

42. Measures that would be taken to address these issues will include:

- Spraying of water or wetting over any surface that would emit dust;
- Use of tarpaulin or hard barricade to separate construction sites from habitations;
- Covering of material when they are being transported to and from site;
- Storing of fuel and chemicals in a storage facility having an impervious floor (cement or concrete floor), with adequate ventilation and with protection from storm water;
- Limiting operations which create high noise levels to hours that would cause least nuisance to public;
- Adjusting the level of vibration of equipment at locations where structures that are sensitive to vibration are sited;
- Carry out routine and periodic maintenance of all construction and equipment;
- Reuse of excavated material as much as possible and disposal of construction debris in a systematic manner which will avoid any undue damage to the environment (including siltation of water bodies);
- Placing a toe wall around all material stock piles and covering them using suitable covers (e.g. tarpaulin);
- Construction of silt traps especially at yards and stock pile areas and developing and implementing erosion control measures on site specific basis;
- Adjusting cut slope angles and construction of retaining structures where necessary;
- Planting of suitable plant species along the ridges of cut slopes;
- Maintenance of proper hygiene and safety standards and facilities in the camps and working areas;
- Modification to cross section designs to minimize the tree removal and carrying out compensatory afforestation programs to compensate the number of trees removed from sites;
- Close coordination with Irrigation Department and Department of Agrarian Development when construction works are carried out close to irrigation or drainage canals;
- Obtaining Unexploded Ordinance (UXO) certificate before commencement of civil works in areas of Northern and Eastern Provinces where the armed conflict existed;
- Removal of all temporary diversions constructed over paddy lands, water bodies, lagoons or marshy lands and implementing of site restoration programs at such sites.

43. However, based on the geographic spread of the roads selected under iRoad 2 program, more specific environment issues shall be identified during the environment assessment; and mitigations measures shall be developed.

44. The concept of “Context Sensitive Design” or CSD shall be used from design stage to identify specific design requirement with respect to the physical, ecological and social environment through which a candidate road is located. The concept of CSD is a very useful tool in developing designs that are sustainable in nature and acceptable to public. CSD allows roadway design decisions to better balance economic, social and environmental objectives.

45. If any of the roads requiring rehabilitation fall inside or near ecologically sensitive area (other than SNR, NP or NR) such as wildlife sanctuaries, lagoons or other forms of conservation areas, proper consultation will be held with the respective national and local wildlife authorities. Measures will be taken to carry out all construction works within the existing ROW and to the extent possible all efforts will be made to include technical measures in the road design to minimize or mitigate negative impacts on wildlife and enhance habitat conditions or migratory pathways for wildlife.

46. During the operation and maintenance phase, minor physical works will still be implemented such as clearing drains and other drainage structures, filling of potholes, maintaining saplings or plants that were planted and others. The improved road conditions will result in increased numbers of vehicles moving along these roads as well as their speed. This can cause an increase in accidents and other safety issues. Minor increase in Green House Gas (GHG) emissions and noise can also be expected from the increased traffic. It is suggested a suitable emission model is used to analyze the changes in GHG emissions due to the investment program. The “Transport Emissions Evaluation Model for Projects” or TEEMP<sup>6</sup> is one such tool which could be used for this analysis. It is also important to discuss climate change impacts and measures adopted by the investment program. The contractor will be responsible to ensure that all road safety measures such as speed breakers, warning signs and other road furniture are well maintained for a period of three years for PS and PRDA roads, and five years for RDA roads. Compensatory afforestation is expected to offset the increased GHG emissions up to a certain extent. If noise levels exceed the prescribed standards during operation and maintenance stage, RDA (through provincial PIU) with assistance from relevant authority (PS or PRDA) will implement suitable noise calming measures such as implementing speed limits and noise warning sign boards at such locations.

47. However, the overall impact of the investment program is expected to be positive. Development of the roads to all weather standards will improve rural access and link rural hubs to the national road network. The program will serve as a tool for poverty alleviation, allowing poor people in the area to directly access other areas of the country helping them to engage in a number of social and economic activities. As RDA roads are also included under iRoad 2 program, the National Highways Network will also be improved and strengthened, establishing smooth traffic flow, reduced costs and travel time and increased lifetime of these roads also.

#### **IV. ENVIRONMENT ASSESSMENT PROCEDURES**

48. All tranches and project roads under this investment program will follow environment assessment procedures as described in this section. These environment assessment procedures have been developed to meet the requirements of GoSL and ADB’s SPS 2009. Any tranche or project road which is not subjected to these procedures will not be put forward for consideration or inclusion under the investment program.

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<sup>6</sup> The TEEMP tools were initially developed by the Clean Air Initiative for Asian Cities (CAI-Asia) and Institute for Transportation and Development Policy (ITDP) for evaluating the emissions impacts of the ADB transport projects.

## A. Environmental Criteria for Selection of Project Roads

49. Project roads for inclusion in each province under this investment program will be selected based on priorities for connecting selected Grama Niladhari Divisions<sup>7</sup> (GNDs) to the main trunk roads. The project roads will be further subjected to the following screening criteria on environment safeguards:

- i. Roads that will cause significant and irreversible environmental impacts that would trigger classification as environment 'Category A' in accordance with the SPS will NOT BE INCLUDED in this investment program. A road project improvement work will be classified as environment 'Category A' if the road works are located fully or partially inside a legally protected area or critical habitat area<sup>8</sup> or have direct and irreversible impacts, and adversely impact on cultural heritage sites of national and international significance.
- ii. Roads falling in part or whole inside or within the buffer zone of a SNR, NP or NR will NOT BE SELECTED under the investment program.
- iii. Roads falling adjacent to other protected areas (such as sanctuaries or protected wet lands) or eco-sensitive areas WILL BE INCLUDED only if there is NO WIDENING OF THE ROAD "RIGHT OF WAY" OR ACQUIRING of land from the protected area or eco-sensitive area. For such project roads, proper consultations will be held with the Department of Wildlife Conservation, Forest Department, local community and other relevant stakeholders, and appropriate clearances or endorsements should be sought if required.
- iv. Rehabilitation and improvement work of the project road must have minimal or no long-term impacts on other forms of sensitive ecological habitats such as marshes, natural streams, tanks and related wetland habitats.

## B. Screening and Classification

50. Each project road will be initially screened to understand the nature and significance of anticipated environmental impacts by completing an Environmental Checklist (EC) provided in Appendix 2. Based on the findings of these individual checklists per project road, one Rapid Environmental Assessment (REA) checklist (also included in Appendix 2) required by the SPS will be prepared for the entire Province. Most sensitive issues identified in each EC will be recorded in the REA checklist, and accordingly, categorization as B or C as per the SPS will be determined.

51. As this program will have no category A, project roads, Provinces or tranches, all project roads and Provinces under this investment program will fall under category B. An Initial Environment Examination will be prepared for each Province and submitted to ADB for approval prior to the approval of the MFF.

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<sup>7</sup> Grama Niladhari Division is a subunit of a Divisional Secretariat Division and is the smallest administrative unit of the country. A *Grama Niladhari* or "Village officer" is appointed by the central government to carry out administrative duties.

<sup>8</sup> Critical habitat according to the SPS is an area with high biodiversity value, including habitat required for the survival of critically endangered or endangered species; areas having special significance for restricted range species; sites that are critical for the survival of migratory species; areas supporting globally significant concentrations or numbers individuals of congregatory species; areas with unique assemblages of species or that area associated with key evolutionary processes or provide ecosystem services; and areas having biodiversity of significant social, economic or cultural importance to local communities.

52. To fulfil requirements of the NEA, a basic information questionnaire (BIQ) will be completed for each Province based on the findings of the environmental checklists prepared for each road in that Province. The BIQ will be submitted to CEA for necessary screening and classification as per the regulations of NEA.

### **C. Environmental Assessment and Environmental Management Plan**

53. The scale of this investment program does not allow to compile IEER of an individual road basis. Such approach will be difficult and time consuming. Hence, one IEER will be prepared for each Province considered under iRoad 2 program. The report will be prepared based on the findings of each road as indicated in the ECs of all roads within the province. The report shall clearly present information and issues that may be unique to a district or geographic area or a project road. All sensitive issues identified in the environment checklist for each project road must be clearly documented in the IEER. The IEER will include one general or standard Environment Management Plan that will cover all possible impacts and mitigation measures within the respective province.

54. Due to the geographic spread of the investment program and considering the road lengths of project roads (where most of the roads are less than 5.0 km) and time line of the program, measurement of concentrations or levels of selected environment parameters of air quality, water quality, noise and vibration will not be practicable. Therefore, monitoring the implementation of mitigation measures will be based on a set of performance indicators. However, measurements of such parameters will be done by the contractor on complaint basis, or as deemed necessary by the PIC, and as stipulated in the IEEs. Therefore, it is important to allocate necessary budgetary provisions to take such measurements under the cost for execution of EMP.

55. Recommended outline of the IEE report in accordance with the SPS is provided in **Appendix 3**. Following the outline given in Appendix 3, the IEER should also investigate and record the following (but not limited to these):

- (i) Potential impacts on biodiversity including modified, natural, critical habitat and protected areas and necessary measures to minimize, mitigate and offset impacts;
- (ii) Landslide, erosion, slope stability issues and necessary engineering and bioengineering measures to address them;
- (iii) Potential impacts on air, noise, water and suitable mitigation measures;
- (iv) Potential waste issues including excavated spoil, hazardous materials and wastes and appropriate measures for their disposal, treatment and other forms of management;
- (v) Occupational health safety issues and measures for the construction workers as well as the local communities in and around the project site, and whether measures taken on occupation health and safety comply with the World Bank Environment Health and Safety standards;
- (vi) Climate change impacts and risks and recommendations for adaptation, as well as mitigation;
- (vii) Other cumulative and induced impacts of the project in light of existing environment, ongoing development projects and planned projects in the near future;
- (viii) Potential impacts on physical and cultural resources and measures to avoid, minimize or mitigate impacts;
- (ix) Grievance Redressal Mechanism to address concerns and grievances of the affected people in the course of the project cycle.



56. A sample of standard EMP is provided in **Appendix 4**. Once the civil work contracts are awarded, respective contractors shall prepare Contract Package Specific Environment Management Action Plans (EMAPs). The contractor shall refer the standard EMP, road specific information in the environmental checklists and the detailed design (level 1 design) when preparing the EMAP. The package specific EMAPs shall include specific cost items for proposed management and mitigation measures. These cost items must be included in the Bill of Quantities (BOQ).

57. Province level draft IEERs, including standard EMPs, will be submitted to ADB for review and approval in a timely manner to allow disclosure of the draft final report on the ADB website before the Management Review Meeting (MRM) or Staff Review Meeting (SRM) or approval of respective tranche (if no MRM/SRM). The package specific EMAP prepared by contractor/s will be reviewed and approved by the PIC (on behalf of the respective PIU) prior to the start of any major physical works by respective contractor/s.

## **V. CONSULTATION, INFORMATION DISCLOSURE AND GRIEVANCE REDRESS MECHANISM**

### **A. Public consultation**

58. The SPS clearly stipulates the need of effective and meaningful public consultation and information disclosure during the project cycle as a means of conducting a project in an environment and social sustainable manner. The EIA process under the NEA considers stakeholder engagement as a key element for successful management of environmental impacts.

59. Meaningful public consultations will be held early on (during SAPE work stage and design stage which specifically adopts context sensitive design approaches) and continuously throughout the project implementation stage to allow incorporation of relevant views of the stakeholders in the final project road design, mitigation measures, implementation issues, and enhance the distribution of benefits. Stakeholders will include project beneficiaries, local affected people including any indigenous people (if any), government bodies, and non-governmental organizations. Effective participation of women and vulnerable groups (handicapped people, senior citizens, school children) will be encouraged during these consultations and effort will be made to engage as many stakeholders as possible.

60. An environment free of any influence will be maintained during these consultations which will be done during transect walk surveys and compiling of environment checklists. Focus Group Discussions (FGDs), household level and key person interviews will be conducted during SAPE works and during civil works. These discussions will start with an introduction on the investment program, proposed development interventions, possible impacts and how public could actively participate in the program. Feedback and recommendations received during the consultations will be addressed and, where relevant, incorporated in the environmental assessment and EMP. Consultations during SAPE works shall be completed before finalization of the respective Periodic Financing Request (PFR) and all proceedings shall be clearly documented in the IEER.

### **B. Information disclosure**

61. As per the regulations of NEA for "Prescribed Project" requiring IEE, the disclosure of such report to public will be decided by the PAA. If such disclosure is deemed to be required, the PAA will do so before granting a conditional approval. CEA, or the respective PAA, will establish procedures for making the IEER available to public through Divisional Secretary of the Divisional

Secretariat Division of the area, Secretary Office at Ministry for Highways, Chairmen's office of RDA, Office of the Director of ESDD, RDA. CEA or the respective PAA will forward all comments received to the coordinating PIU and ESDD for review and incorporation in to the final IEER. CEA or the respective PAA will evaluate the responses and revisions on the final report before making a decision to issue the conditional environment clearance.

62. According to the requirements of the SPS, for environment category B projects, the respective draft IEER will be disclosed before the MRM or equivalent meeting or approval of the respective tranche, if there is no MRM.

63. Signboards with project information including details on nature of construction works, road length, construction period, name of contractor, contract sum and contact information for reporting complaints or grievances will be posted in three languages (Sinhala, Tamil and English) and will be placed at the start and end points of all road sections BEFORE start of civil works.

64. During project implementation, annual environmental monitoring reports will be prepared per province (by respective PIC) and submitted to ADB for disclosure on the ADB website.

### **C. Grievance Redress Mechanism**

65. Grievances from the affected people on social and environmental issues during project implementation will be addressed mainly through the existing local administrative system. Depending on the nature and significance of the grievances or complaints, grievances will be addressed at three (3) levels. The first will be at the grass roots level where complaints will be directly received and addressed by the contractor, PIC and PIU representatives on site. Grievances which are simple but still cannot be addressed at the grass roots level will be addressed at the Grama Niladhari (GN) level or level two. More complex grievances which cannot be addressed at the GN level will be addressed at the Divisional Secretariat (DS) level which is considered as level three. There will be a Grievance Redress Committee (GRC) at the GN and DS levels. Minimum composition of GRCs at GN and DS levels are discussed below.

66. At the GN level the GRC members will be:

|      |   |           |
|------|---|-----------|
| i)   | Grama Niladhari of the area                   | Chairman  |
| ii)  | Representative of PIU                         | Secretary |
| iii) | Representative of PIC                         | Member    |
| iv)  | Representative of Contractor                  | Member    |
| v)   | A community member/religious leader           | Member    |
| vi)  | Woman representative from the local community | Member    |

67. At the DS Level GRC members will be:

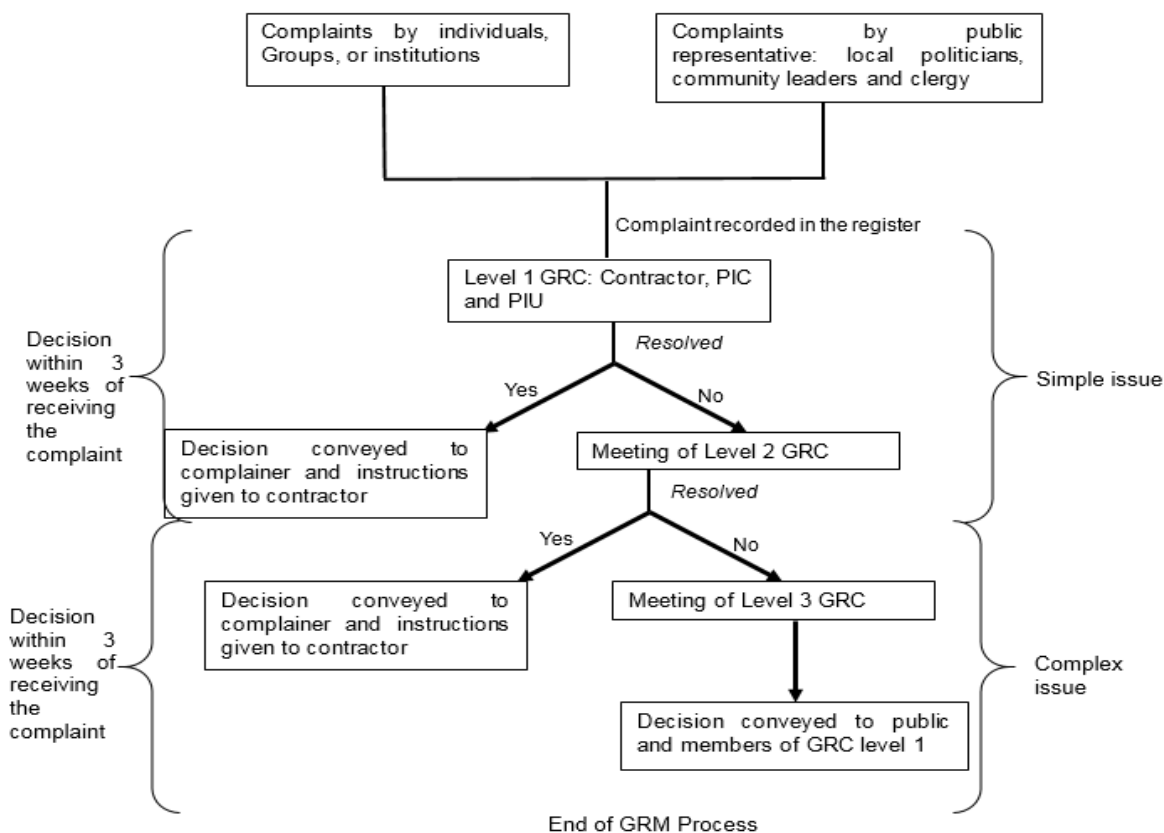
|      |   |           |
|------|---|-----------|
| i)   | Divisional Secretary of the area  | Chairman  |
| ii)  | Representative of PIU   | Secretary |
| iii) | Grama Niladhari   | Member    |
| iv)  | Representative of PIC   | Member    |
| v)   | Representative of Contractor  | Member    |
| vi)  | Representative of a social organization (Non-Governmental Organization/Community- | Member    |

- Based Organization) of the area
- vii) A community member/religious leader Member
- viii) Woman representative from the local community Member

68. To make the Grievance Redress Mechanism (GRM) process gender responsive, the GRC will include one woman member to represent the local community women. Further, when grievances or complaints are submitted to the GRC, both women and men complainants will be treated equally and necessary measures will be taken to address the grievance in the best way possible.

69. Recommended steps with timeline on the operation of the GRM is provided in figure 2. Adjustments may be made to the GRC composition (i.e. inclusion of more members) during the implementation of the program in each Province.

70. Public notices will be put up at each road before commencing of civil works, providing information on GRM and contact persons in case of such grievance. Suggestions, requests and complain boxes will be installed at suitable locations within each project road. The online method developed under iRoad will also be implemented as a means of collecting public grievances in iRoad 2. A request, suggestion and complain register will be maintained at contractor's office by the Environment Officer (EO) the respective contractor. All suggestions, requests and complains shall be recorded in this register with actions taken.



**Figure 2: Summary of GRM Process**

## **VI. INSTITUTIONAL ARRANGEMENT**

### **A. Institutional arrangement**

71. Ministry of Higher Education and Highways (MoHEH) will be the Executing Agency (EA) of this investment program. Secretary to the ministry will be responsible for decisions on overall approvals and operational policies of the project. RDA will be the Implementing Agency (IA) of the program. A project coordinating PIU (which will also be the Western Province PIU) will be established under DG/RDA for coordinating overall program work starting from SAPE works. Provincial level PIUs will be established in the four provinces considered under iRoad 2 program. The PIUs will be headed by a Project Director assisted by a staff of engineers and administrative staff. Each PIU will also have an environment and social unit staffed with one Senior Environment Safeguard Officer (ESO), one Senior Social Safeguard Officer (SSO) and their assistant staff (The indicative staffing plan of PIUs for iRoad 2 includes: Five (5) Environment/ Social Officers for NP, three (3) Environment/ Social Officers for EP and three (3) Environment/ Social Officers for WP. Uva Province will have Four (4) Environment/ Social Officers due to packaging requirements). ESDD will guide and support these environment and social units on environment and social related technical and monitoring matters.

72. The project coordinating PIU will also be supported by a SAPE works team which will also include experts on the fields of environment and social safeguards. These experts in SAPE works teams will be responsible in completing required environment and social assessments during SAPE works stage and prepare necessary environment and social safeguard documents including ECs, REA checklists, BIQs and IEERs. ESDD shall review these documents before submission to ADB for approval and disclosure.

73. Project Implementing Consultants will also be appointed for each province to support respective provincial PIU in supervising the designs and civil works of the contractors. Headed by a Team Leader, each PIC will have Resident Engineers, Assistant Resident Engineers, Site Engineers, Technical Officers and administration staff. The PICs will also have an Environment Safeguard Consultant (ES) who will review and approve safeguard documents prepared by contractor/s (Package/cluster specific Environment Management Action Plans, Environment Monitoring Checklists and any other document related to environment safeguards); monitor safeguards implementation (i.e. execution of cluster specific EMAP at site level); and instruct and assist contractor/s to rectify any non-compliance issue and prepare periodic environment compliance monitoring reports. Each ES will be assisted by Field Assistants who will also assist the Social, Gender, Resettlement Specialist (SGRS) of PIC. These Assistants will be appointed on a district basis (i.e. one assistant per district) and will operate from Resident Engineer's office which will also be established on a district basis.

74. Appointed civil work contractors will be directly responsible to execute environment safeguard measures at site level. Safeguard measures will be as per the measures outlined in the EMAP. Each contractor will appoint a qualified and experienced person to work as the Environment Officer who will implement the safeguard measures at site level. Project Manager and/or Contract Representative of each contractor will provide all necessary inputs (including personnel and machinery) to the EO to effectively execute the mitigation measures at site. The EO will be assisted by an officer who will be responsible for safety (personnel as well as site) and public relations.

75. Other than these key environment and social staff of PIU, PIC and Contractors, the Project Engineers of PIU, site engineers and technical officers of PIC and contractors will also be trained

as a part of capacity building of project staff on environment safeguards compliance monitoring and reporting (reporting to environment staff of PIU, PIC and contractors).

## B. Responsibilities

76. iRoad 2 program is scheduled to rehabilitate and improve roads located in four provinces. Although the execution of safeguard measures related with civil works is the responsibility of civil work contractors, there are other safeguard compliance requirements which also need to be fulfilled during the course of this investment program. Responsibility of implementing such measures lay with MoHEH, RDA and PIUs, ESDD, PIC and even with CEA, CC & CRMD, DWLC and ADB. Below table illustrate the responsibilities of each above agencies in implementation of safeguard matters.

**Table 4: Responsibilities for Environmental Safeguards Implementation**

| No. | Agency   | Responsibilities  |
|-----|--|---|
| 1.  | Ministry of Higher Education and Highways (Program EA)     | <ul style="list-style-type: none"> <li>✓ Make final decision on roads to be included under the investment program.</li> <li>✓ Overall responsibility for project design, feasibility, construction and operation and guide RDA to play its role as the IA.</li> <li>✓ Ensure that sufficient funds are available to properly implement all agreed environmental safeguards measures.</li> <li>✓ Ensure that all project roads and tranches, regardless of financing source, complies with the provisions of SPS and GoSL's environmental laws and regulations.</li> <li>✓ Ensure that tender and contract documents for civil works include all relevant parts of the environmental assessment and agreements related to environment safeguards.</li> </ul>   |
| 2.  | Road Development Authority (Program IA)                    | <ul style="list-style-type: none"> <li>✓ Ensure that the investment program complies with ADB's SPS and GoSL laws and regulations.</li> <li>✓ Ensure that the program complies with all environment safeguard requirements as given in this EARF.</li> <li>✓ Ensure that tender and contract documents for civil works include all relevant parts of the environmental assessment and agreements pertaining to environment safeguards.</li> </ul>   |
| 3.  | Project coordinating PIU with support from SAPE works team | <ul style="list-style-type: none"> <li>✓ Ensure that the program complies with ADB's SPS and GoSL laws and regulations.</li> <li>✓ Ensure that the program complies with all environment safeguard requirements as given in this EARF.</li> <li>✓ Ensure that environment checklists are compiled for each project road.</li> <li>✓ Compile one Rapid Environment Assessment (REA) checklist for each province based on the information collected in each EC.</li> <li>✓ Preparation of one province level IEER based on the information from the project road specific environment checklists, other consultations and literature review as necessary.</li> <li>✓ Obtain feedback on draft IEE report findings from major stakeholders where necessary and facilitate necessary revisions.</li> <li>✓ Facilitate public disclosure of safeguard documents where necessary in accordance to the requirements of ADB and CEA.</li> </ul> |

| No. | Agency  | Responsibilities  |
|-----|---|---|
|     |   | <ul style="list-style-type: none"> <li>✓ Ensure that environmental protection and mitigation measures in the Environmental Assessment report and EMP are incorporated into the design (level 2 design).</li> <li>✓ Ensure that requisite measures from the Environmental Assessment report and EMP are incorporated into the bid and contract documents.</li> <li>✓ Ensure that necessary provisions are made in the contract documents for the EMP to be updated in accordance with revisions in the final detailed design (level 1 design).</li> <li>✓ Ensure that RDA has obtained necessary environmental clearances, permits, license(s) etc. from CEA and other agencies as specified in this EARF (Table 3).</li> <li>✓ Facilitate additional environmental assessment (if required) for specific sub-projects and submit to ADB and CEA for review and clearance.</li> </ul>  |
| 4.  | Provincial level PIU (PIUs of Northern, Eastern, Uva and Western Provinces) | <ul style="list-style-type: none"> <li>✓ Ensure that civil works are carried out in compliance with environment safeguard requirements stipulated in SPS and GoSL laws and regulations.</li> <li>✓ Ensure that contractors obtain necessary environmental permits, license(s) etc. from respective agencies as specified in this EARF (Table 3) prior to commencement of civil works contracts.</li> <li>✓ Organize environmental management capacity building activities for PIU and orientation and awareness training for PIC and contractors.</li> <li>✓ Facilitate the establishment of a grievance redress mechanism, as described in this EARF and respective IEE report, to receive and facilitate resolution of affected peoples' concerns, complaints, and grievances related to environment safeguards</li> <li>✓ Ensure that all mitigation measures as given in the EMAP are implemented properly.</li> <li>✓ Ensure proper conduction of environmental monitoring during construction and operation phases.</li> <li>✓ Ensure annual environmental monitoring reports are prepared and submitted to ADB on a timely manner for disclosure on their website on an annual basis.</li> <li>✓ Identify environmental corrective actions along with PIC and prepare corrective action plans as necessary.</li> <li>✓ Ensure the preparation of due diligence reports by respective PICs on the environment safeguards performance of the earlier tranche before the approval of the next tranche.</li> </ul> |
| 5.  | Environment and Social Development Division of RDA                          | <ul style="list-style-type: none"> <li>✓ Facilitate and act as resource persons during training workshops under the investment program.</li> <li>✓ Provide technical advice and support as necessary to environment and social units within the PIUs.</li> <li>✓ Assist PIUs in preparation of annual monitoring reports through respective PICs.</li> <li>✓ Monitor implementation of safeguards under the investment program on a bi-annual basis or as necessary.</li> </ul>   |
| 6.  | Project Implementation Consultants (at provincial level)                    | <ul style="list-style-type: none"> <li>✓ Review and approve the contract package specific EMAPs prior to commencement of major civil works.</li> <li>✓ Review and approve road specific Environment Monitoring Checklists (EMC) at pre-construction, construction and operational. Maintenance stage.</li> </ul>  |

| No. | Agency                          | Responsibilities  |
|-----|---------------------------------|---|
|     |                                 | <ul style="list-style-type: none"> <li>✓ Daily on site supervision for implementation of environmental safeguards.</li> <li>✓ Close coordination and communication with the contractors to facilitate implementation of all mitigation measures identified in EMAP.</li> <li>✓ Conduct measurements to obtain levels of selected environment parameters of air quality, water quality, noise and vibration on complaint basis or deemed as required.</li> <li>✓ Provide technical support and advice for addressing complaints and grievances and participate in resolving issues as a member of the GRC.</li> <li>✓ Provide technical advice and on the job training to the contractor's staff as necessary.</li> <li>✓ Preparation of monitoring reports and submission to the respective PIU.</li> <li>✓ Preparation of annual monitoring reports based on field observations, monitoring checklists and submission to PIU for further submission to ADB.</li> <li>✓ Preparation of due diligence reports (on behalf of the PIU) on environment safeguards performance of the earlier tranche before the approval of the next tranche.</li> </ul>  |
| 7.  | Civil work contractors          | <ul style="list-style-type: none"> <li>✓ Based on the standard EMP, road specific environment checklists and the detailed design (level 1 design) prepare a contract package specific EMAP for approval by the PIC before start of major physical works.</li> <li>✓ Ensure that adequate budget provisions are made for implementing all mitigation measures specified in the EMAP.</li> <li>✓ Participate in induction training on safeguard requirements and EMP provisions delivered by PIC and PIU.</li> <li>✓ Ensure that all workers, site agents, including site supervisors and management participate in training sessions delivered by PIC and PIU.</li> <li>✓ Obtain necessary environmental license(s), permits etc. from relevant agencies as specified in Table 3 of this EARF for associated facilities for project road works, quarries, hot-mix plant etc. prior to commencement of civil works contracts.</li> <li>✓ Implement all mitigation measures as listed in the EMAP.</li> <li>✓ Ensure compliance with environmental statutory requirements and contractual obligations.</li> <li>✓ Carry out measurements of selected environment parameters as instructed by PIC.</li> <li>✓ Participate in resolving issues as a member of the GRC</li> <li>✓ Respond promptly to grievances raised by the local community or any stakeholder and implement environmental corrective actions or additional environmental mitigation measures as necessary.</li> <li>✓ Based on the results of EMAP monitoring, cooperate with the PIC and PIU to implement environmental corrective actions and corrective action plans, as necessary.</li> <li>✓ Review the road specific EMAP and update as and when necessary and submit the same to PIC for review and approval.</li> </ul> |
| 8.  | Central Environmental Authority | <ul style="list-style-type: none"> <li>✓ Review BIQs submitted on province basis and provide conditional clearance for the investment program (on a province basis).</li> </ul>   |

| No. | Agency  | Responsibilities  |
|-----|---|---|
|     |   | <ul style="list-style-type: none"> <li>✓ Issuance of environmental licenses and renewal of same as required by the contractors.</li> <li>✓ Undertake monitoring of the project's environmental performance.</li> </ul>  |
| 9.  | Coast Conservation and Coastal Resource Management Department | <ul style="list-style-type: none"> <li>✓ Review the applications submitted by RDA and providing clearances with necessary recommendations and/ or conditions.</li> <li>✓ Undertake monitoring of the project's environmental performance within Coastal Zone.</li> </ul>  |
| 10. | Department of Wildlife Conservation                           | <ul style="list-style-type: none"> <li>✓ Review the applications submitted by RDA and providing clearances with necessary recommendations and/ or conditions.</li> <li>✓ Undertake monitoring of the project's environmental performance within the areas under the authority of DWLC.</li> </ul>   |
| 11. | Asian Development Bank  | <ul style="list-style-type: none"> <li>✓ Review REA checklists and endorse or modify the project classification and recommend the Terms of Reference for the environmental assessment report.</li> <li>✓ Review IEE reports and disclose the draft and final reports on the ADB's website as required.</li> <li>✓ Issue approval for the initial tranche based on IEEs.</li> <li>✓ Issue approval for subsequent tranches based on the due diligence reports on environment safeguard compliance.</li> <li>✓ Monitor implementation and monitoring of EMP through due diligence missions.</li> <li>✓ Monitor overall compliance of the project roads to this EARF.</li> <li>✓ Provide assistance to the EA and IA if required, in carrying out its responsibilities and for building capacity for safeguard compliance.</li> <li>✓ If necessary provide further guidance to the RDA and PIUs on the format, content, and scope of the IEE reports and annual monitoring reports for submission to ADB.</li> </ul> |

### C. Allocation of a budget for environment management

77. Budget requirements for implementing this EARF includes costs for (i) transect walks and completion of environment checklists for all roads; (ii) preparation of province level IEER including standard EMPs; (iii) preparation of package specific EMAPs; (iv) institutional and capacity building activities; and (v) monitoring and reporting on implementation of EMAP. Implementation of package specific EMAPs will be part of the construction costs, and will be included in the Bill of Quantities as relevant line items by the respective bidding contractors. Table 5 serves as a guide on the sourcing and planning of budget requirements for implementing this EARF.

**Table 5: Summary of Budget Requirements for Implementing this EARF**

| No.                                      | Activity   | Budget source            | Budget purpose   | Remarks                             |
|--|--|--------------------------|--|-------------------------------------|
| 01.                                      | Conduction of transect walks and completion of the environment checklists for all roads, preparation of province level IEE and standard EMP. | GoSL funds through MoHEH | To conduct field surveys and investigations to prepared road specific ECs and provincial level IEERs with standard EMPs. | Costs will be covered by RDA, MoHEH |
| 02. Institutional and Capacity Building: |  |                          |  |                                     |



| No.   | Activity   | Budget source                   | Budget purpose  | Remarks  |
|-------|--|---------------------------------|---|--|
| 02.1. | Designation of ESO, SSO and Assistants within environment and social unit of each PIU. | GoSL funds through MoHEH to RDA | Salary and allowances for ESO, SSO and Assistant staff. | Costs will be covered by RDA, MoHEH  |
| 02.2. | Training workshops (local)   | ADB loan                        | Logistical costs and payment of resource persons        | Logistical costs will be borne by the PIU. Payment for resource persons will be sourced from the budget allocation as indicated in the loan. |
| 03.   | Monitoring implementation of EMP and preparation of monitoring reports                 | ADB loan                        | Consultancy fees for PIC                                | Covered under budget allocation for consultancy fees for PIC.<br>In kind support for monitoring will be provided by ESU of PIU.              |

## VII. MONITORING AND REPORTING

78. Monitoring the implementation of package specific EMAP will be carried out during pre-construction, construction, and operation and maintenance stages of the program. ES of each PIC will be directly responsible for monitoring the implementation with support of ESUs of PIUs. ESDD will also conduct monitoring visits on a bi-annual basis or as required. ADB will also field monitoring mission on a periodic basis.

79. Based on the package specific EMAPs, Monitoring Checklists (MC) will be prepared for each road during pre-construction, construction, and operation and maintenance stages. Every road will have at least one MC completed during pre-construction, one to three<sup>9</sup> during construction depending on the length of the road and one per year during operation and maintenance. Suggested format for the monitoring checklist is provided in **Appendix 5**.

80. Records of these completed monitoring checklists must be systematically maintained within the PIC office. ES of each PIC will prepare monitoring reports based on these records and information collected during site visits. These monitoring reports will be prepared on an annual basis<sup>10</sup> per province and submitted to ADB through their respective PIU for disclosure on the ADB website. The recommended outline of the annual monitoring report is provided in **Appendix 6**.

81. Satisfactory environmental due diligence reports will also be prepared by PIC of each province and submitted through their respective PIUs to ADB before approval of any subsequent tranche.

<sup>9</sup> The monitoring checklist during construction stage will be completed three times when the progress of physical works is 25%, 50% and 75% respectively. This may not be practically feasible for shorter roads that are only 1 to 3 km long. Hence, for these shorter roads only one completed monitoring checklist during construction stage will be adequate.

<sup>10</sup> The first annual monitoring report will cover the period starting from the date of first contract award.

## **APPENDIX 1: MULTI CRITERIA LIST FOR ROAD SELECTION**

1. Following agreed selection criteria will be used for shortlisting of roads along with the outcome of the SAPE works.

### **Select roads in areas with:**

- 50 No's of House Holds
- Availability of Electricity & Water
- Educational Facilities
- Health Facilities / Medical Centers
- Agriculture Land use
- All Other Industries
- Weekly Fare & Commercial Centers
- Collection Centers for Dairy / Farm & other products
- Improving / Developing Empty Land
- Improving / Developing Empty Land
- Backwardness due to lack of access
- Regional Balancing / Spatial Distribution
- Alternative Shortcut
- Development potential
- Social Justice to vulnerable / disadvantages groups / under privileged in the society
- Value addition by processing and product development

### **Avoid selecting:**

- Roads which do not have sufficient ROW (No land acquisition is allowed).
- Passing through environment ssensitive areas as defined in EARF.
- Private Roads.
- Urban Roads.
- Roads use only for rresidential activities.

## APPENDIX 2: ENVIRONMENT CHECKLIST AND RAPID ENVIRONMENTAL ASSESSMENT (REA) CHECKLIST

### 1.1: Environment Checklist

Road Name:

GNDs:

DSD Name/s:

District Name:

Total Length of the Road:

#### A. Climatic Conditions

|              |            |      |
|--------------|------------|------|
| Temperature  | High:      | Low: |
| Humidity     | High:      | Low: |
| Rainfall     | mm/year    |      |
| Rainy Season | From ..... | to   |

#### B. Location of the Road and Generic description of Environment

| No. | Type of Ecosystem   | Yes | No | Explanation  |
|-----|---|-----|----|--|
| 1.  | Type of Terrain (Plain/ Undulating/ Hilly/ Mountainous etc.)<br>(Explain the topography of the Area and how many km of the road are located in the hilly area)                          |     |    | Altitude:  |
| 2.  | Forest Area / Mangrove / Other natural habitats (Explain whether the road passes through forest areas or located along the forest areas and distance from shoulder to the forest area)? |     |    | Type of Vegetation:<br>Legal Status of the Forest Area: (Reserved, National Park, Sanctuaries, Unclassified, etc.) |
| 3.  | Inhabited Area  |     |    |  |
| 4.  | Agricultural Land   |     |    |  |
| 5.  | Barren Land   |     |    |  |

#### C. Specific description of the Road Environment

(Note: Questions number 1, 4, 5, 7 and 8 must be answered after discussions with the local community people)

| No. | Parameter/ Component  | Yes | No | Explanation  |
|-----|---|-----|----|--|
| 1   | Are there any areas with landslide or erosion problems along the road? (If yes, indicate the location whether Right or Left side and the chainage)  |     |    | ( ) No secondary information is available and local community is not aware of this matter. |
| 2   | Are there any Tanks/streams /rivers etc. along /crossing the road or any lakes/swamps beside the road? (If yes, list them indicating the location Right/ Left or crossing and the chainage) |     |    |  |

| No. | Parameter/ Component   | Yes | No | Explanation  |
|-----|--|-----|----|--|
| 3   | Is the area along the project road prone to flooding or any problems of water stagnation and other drainage issues? (If yes, mention chainage, flood level and frequency)  |     |    | ( ) No secondary information is available and local community is not aware of this matter. |
| 4   | Are there any trees with a DBH of 30 cm or more within 10 m on either side from the center line of the road alignment? (If yes attach list of trees indicating the location (Right or Left side) and the chainage) |     |    |  |
| 5   | Along the road and within 100 m of the road shoulder, are there any Faunal habitat areas, Faunal breeding ground, bird migration area, or other similar areas? (If yes, specify details of habitat with chainage)  |     |    | ( ) No secondary information is available and local community is not aware of this matter. |
| 6   | Along the road and within 100 m of the road shoulder is there any evidence of Flora and Fauna species that are classified as endangered species?   |     |    | ( ) No secondary information is available and local community is not aware of this matter. |
| 7   | Are there any utility structures <sup>11</sup> within 10 m on either side from the center line of the road alignment? (If yes, attach list with chainage)  |     |    |  |
| 8   | Are there any religious, cultural or community structures/ buildings <sup>12</sup> within 50 m on either side from the center line of the road alignment? (If yes attach list with chainage)                       |     |    |  |

**D. Public Consultation**

| No. | Consultation Activities  | Yes | No | Remarks |
|-----|--|-----|----|---------|
| 1.  | Consultation with local community was conducted before finalizing the alignment. (Attach list of people met and dates) |     |    |         |

<sup>11</sup> Water tap, hand pump, electric pole, telephone pole, pipe lines and other similar structures.

<sup>12</sup> Religious/cultural/historical monuments, school, health center, public toilet and other similar structures.

| No. | Consultation Activities  | Yes | No | Remarks |
|-----|--|-----|----|---------|
| 2.  | Any suggestion received in finalizing the alignment              |     |    |         |
| 3.  | If suggestions received, were they incorporated into the design? |     |    |         |

**E. Please attach the following:**

- I. List of utility structures indicating location (left or right side of the road) and chainage (as required under C. 7)
- II. List of community structures indicating location (left or right side of the road) and chainage (as required under C.8)
- III. Project Map
- IV. Photographs of the project area showing at least 10 m on either side from center line of road alignment.

## 1.2 Rapid Environmental Assessment (REA) Checklist for Roads and Highways

### Rapid Environmental Assessment (REA) Checklist<sup>13</sup>

### Roads and Highways

**Instructions:**

- This checklist is to be prepared to support the environmental classification of a project. It is to be attached to the environmental categorization form that is to be prepared and submitted to the Chief Compliance Officer of the Regional and Sustainable Development Department.
- This checklist is to be completed with the assistance of an Environment Specialist in the SAPE works team.
- This checklist focuses on environmental issues and concerns. To ensure that social dimensions are adequately considered, refer also to ADB checklists and handbooks on (i) involuntary resettlement, (ii) indigenous peoples planning, (iii) poverty reduction, (iv) participation, and (v) gender and development.
- 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:**

**Province:**


| SCREENING QUESTIONS  | Yes                      | No                       | REMARKS |
|--|--------------------------|--------------------------|---------|
| <b>A. Project Siting</b>   |                          |                          |         |
| Is the Project area adjacent to or within any of the following environmentally sensitive areas?  |                          |                          |         |
| ▪ Cultural heritage site   | <input type="checkbox"/> | <input type="checkbox"/> |         |
| ▪ Protected Area   | <input type="checkbox"/> | <input type="checkbox"/> |         |
| ▪ Wetland  | <input type="checkbox"/> | <input type="checkbox"/> |         |
| ▪ Mangrove   | <input type="checkbox"/> | <input type="checkbox"/> |         |
| ▪ Estuarine  | <input type="checkbox"/> | <input type="checkbox"/> |         |
| ▪ Buffer zone of protected area  | <input type="checkbox"/> | <input type="checkbox"/> |         |
| ▪ Special area for protecting biodiversity   | <input type="checkbox"/> | <input type="checkbox"/> |         |
| <b>B. Potential Environmental Impacts</b>  |                          |                          |         |
| Will the Project cause...  |                          |                          |         |
| ▪ encroachment on historical/cultural areas; disfiguration of landscape by road embankments, cuts, fills, and quarries?  | <input type="checkbox"/> | <input type="checkbox"/> |         |
| ▪ encroachment on precious ecology (e.g. sensitive or protected areas)?  | <input type="checkbox"/> | <input type="checkbox"/> |         |
| ▪ alteration of surface water hydrology of waterways crossed by roads, resulting in increased sediment in streams affected by increased soil erosion at construction site? | <input type="checkbox"/> | <input type="checkbox"/> |         |

<sup>13</sup> Modified for iRoad program SAPE works from SPS.

| SCREENING QUESTIONS  | Yes                      | No                       | REMARKS |
|--|--------------------------|--------------------------|---------|
| ▪ deterioration of surface water quality due to silt runoff and sanitary wastes from worker-based camps and chemicals used in construction?                            | <input type="checkbox"/> | <input type="checkbox"/> |         |
| ▪ increased local air pollution due to rock crushing, cutting and filling works, and chemicals from asphalt processing?  | <input type="checkbox"/> | <input type="checkbox"/> |         |
| ▪ noise and vibration due to blasting and other civil works?<br>▪ dislocation or involuntary resettlement of people  | <input type="checkbox"/> | <input type="checkbox"/> |         |
| ▪ other social concerns relating to inconveniences in living conditions in the project areas that may trigger cases of upper respiratory problems and stress?          | <input type="checkbox"/> | <input type="checkbox"/> |         |
| ▪ hazardous driving conditions where construction interferes with pre-existing roads?  | <input type="checkbox"/> | <input type="checkbox"/> |         |
| ▪ poor sanitation and solid waste disposal in construction camps and work sites, and possible transmission of communicable diseases from workers to local populations? | <input type="checkbox"/> | <input type="checkbox"/> |         |
| ▪ creation of temporary breeding habitats for mosquito vectors of disease?   | <input type="checkbox"/> | <input type="checkbox"/> |         |
| ▪ dislocation and compulsory resettlement of people living in right-of-way?  | <input type="checkbox"/> | <input type="checkbox"/> |         |
| ▪ accident risks associated with increased vehicular traffic, leading to accidental spills of toxic materials and loss of life?  | <input type="checkbox"/> | <input type="checkbox"/> |         |
| ▪ increased noise and air pollution resulting from traffic volume?   | <input type="checkbox"/> | <input type="checkbox"/> |         |
| ▪ increased risk of water pollution from oil, grease and fuel spills, and other materials from vehicles using the road?  | <input type="checkbox"/> | <input type="checkbox"/> |         |

Proposed  
Classification:

Environmental

A ☐

B ☐

REA Checklist Prepared By:

\_\_\_\_\_  
Name & Signature

Date Prepared:

\_\_\_\_\_

### **APPENDIX 3: OUTLINE OF AN INITIAL ENVIRONMENTAL EXAMINATION (IEE) REPORT**

1. An initial environmental examination (IEE) report is required for all environment category B projects. Its level of detail and comprehensiveness is commensurate with the significance of potential environmental impacts and risks.

2. A typical IEE report contains many of the same major elements as an EIA, but may have a narrower scope and depth of analysis. The substantive aspects of this outline will guide the preparation of IEE reports, although not necessarily in the order shown.

#### **A. Executive Summary**

3. This section describes concisely the critical facts, significant findings, and recommended actions.

#### **B. Introduction**

4. This section provides a brief background and context of the project.

#### **C. Policy, Legal, and Administrative Framework**

5. This section summarizes the national and local legal and institutional framework within which the environmental assessment is carried out. It also identifies project-relevant international environmental agreements to which the country is a party.

#### **D. Description of the Project**

6. This section describes the proposed project; its major components; and its geographic, ecological, social, and temporal context, including any associated facility required by and for the project (for example, access roads, power plants, water supply, quarries and borrow pits, and spoil disposal). It normally includes drawings and maps showing the project's layout and components, the project site, and the project's area of influence.

#### **E. Description of the Environment (Baseline Data)**

7. This section describes relevant physical, biological, and socioeconomic conditions within the study area, and may be based largely on secondary data if relevant and accurate secondary data is available. It also looks at current and proposed development activities within the project's area of influence, including those not directly connected to the project. It indicates the accuracy, reliability, and sources of the data.

#### **F. Anticipated Environmental Impacts and Mitigation Measures**

8. This section predicts and assesses the project's likely positive and negative direct and indirect impacts to physical, biological, socioeconomic (including occupational health and safety, community health and safety, vulnerable groups and gender issues, and impacts on livelihoods through environmental media [Appendix 2, para. 6]), and physical cultural resources in the project's area of influence, in quantitative terms to the extent possible; identifies mitigation measures and any residual negative impacts that cannot be mitigated; explores opportunities for enhancement; identifies and estimates the extent and quality of available data, key data gaps, and uncertainties associated with predictions and specifies topics that do not require further



attention; and examines global, transboundary, and cumulative impacts as appropriate. It is expected that an IEE will be based on less rigorous impact assessment methodologies than an EIA. For example, an EIA might be based on predictive modeling, while an IEE might utilize expert opinion.

## **G. Information Disclosure, Consultation, and Participation**

9. This section:

- (i) describes the process undertaken during project design and preparation for engaging stakeholders, including information disclosure and consultation with affected people and other stakeholders;
- (ii) summarizes comments and concerns received from affected people and other stakeholders and how these comments have been addressed in project design and mitigation measures, with special attention paid to the needs and concerns of vulnerable groups, including women, the poor, and Indigenous Peoples; and
- (iii) describes the planned information disclosure measures (including the type of information to be disseminated and the method of dissemination) and the process for carrying out consultation with affected people and facilitating their participation during project implementation.

## **H. Grievance Redress Mechanism**

10. This section describes the grievance redress framework (both informal and formal channels), setting out the time frame and mechanisms for resolving complaints about environmental performance.

## **I. Environmental Management Plan**

11. This section deals with the set of mitigation and management measures to be taken during project implementation to avoid, reduce, mitigate, or compensate for adverse environmental impacts (in that order of priority). It may include multiple management plans and actions. It includes the following key components on mitigation (with the level of detail commensurate with the project's impacts and risks):

- (i) Mitigation:
  - (a) identifies and summarizes anticipated significant adverse environmental impacts and risks;
  - (b) describes each mitigation measure with technical details, including the type of impact to which it relates and the conditions under which it is required (for instance, continuously or in the event of contingencies), together with designs, equipment descriptions, and operating procedures, as appropriate; and
  - (c) provides links to any other mitigation plans (for example, for involuntary resettlement, Indigenous Peoples, or emergency response) required for the project.
- (ii) Monitoring:
  - (a) describes monitoring indicators (performance indicators), frequency of monitoring and responsible parties.
  - (b) describes monitoring and reporting procedures to ensure early detection of conditions that necessitate particular mitigation measures and document

- the progress and results of mitigation.
- (iii) Implementation arrangements:
  - (a) specifies the implementation schedule showing phasing and coordination with overall project implementation;
  - (b) describes institutional or organizational arrangements, namely, who is responsible for carrying out the mitigation and monitoring measures, which may include one or more of the following additional topics to strengthen environmental management capability: technical assistance programs, training programs, procurement of equipment and supplies related to environmental management and monitoring, and organizational changes; and
  - (c) estimates capital and recurrent costs and describes sources of funds for implementing the environmental management plan.
- (iv) Performance indicators: describes the desired outcomes as measurable events to the extent possible, such as performance indicators, targets, or acceptance criteria that can be tracked over defined time periods.

## **J. Conclusion and Recommendations**

12. This section provides the conclusions drawn from the assessment and provides recommendations.

**APPENDIX 4: SAMPLE ENVIRONMENTAL MANAGEMENT PLAN**

This Environmental Management Plan should be included as an appendix to the respective IEER.

**Province:**

**No. of Pradeshiya Sabha roads and total length:**

**No. of RRDA roads and total length:**

**No. of RDA road and total length:**

| <b>SL. NO.</b> | <b>Project Action/ Environmental Attributes</b> | <b>Mitigation Measures</b> | <b>Location/ numbers</b> | <b>Costs</b> | <b>Implemented by</b> | <b>Monitored by</b> |
|----------------|---|----------------------------|--------------------------|--------------|-----------------------|---------------------|
| <b>I.</b>      | <b>Design and Preconstruction Stage</b>         |                            |                          |              |                       |                     |
| 1.             |   |                            |                          |              |                       |                     |
| 2.             |   |                            |                          |              |                       |                     |
| <b>II.</b>     | <b>Construction Stage</b>                       |                            |                          |              |                       |                     |
| 1.             |   |                            |                          |              |                       |                     |
| 2.             |   |                            |                          |              |                       |                     |
| <b>III</b>     | <b>Post Construction and Operational Stage</b>  |                            |                          |              |                       |                     |
| 1.             |   |                            |                          |              |                       |                     |
| 2.             |   |                            |                          |              |                       |                     |

**APPENDIX 5: SAMPLE ENVIRONMENTAL MONITORING CHECKLISTS****5.1. Environmental Monitoring Checklist during Design and Pre-Construction Stage**

District:

Road

Name:

Road ID:

Total

length:

Date of site visit:

| <b>SL. No.</b> | <b>Environmental Attributes</b> | <b>Mitigation Measures</b> | <b>Location/ Numbers</b> | <b>Compliance status (Complied, partly complied, not complied)</b> | <b>Corrective action proposed if any</b> |
|----------------|---------------------------------|----------------------------|--------------------------|--|--|
| 1.             |                                 |                            |                          |  |  |
| 2.             |                                 |                            |                          |  |  |
| 3.             |                                 |                            |                          |  |  |

Guidance notes:

- For consistency and easier monitoring the information in the columns of Environmental Attributes, Mitigation Measures and Location/Numbers must be taken from the information in the “During design and pre-construction stage” of the contract package specific EMP prepared by the contractor
- This checklist must be prepared based on site visits to the respective road
- This checklist must be completed once for every rural road and national/OPRC road which requires reconstruction
- Each report must enclose photographs to demonstrate the mitigation measures implemented

Prepared and submitted by:

Reviewed and approved

by:

Date of submission to PIU:

Date of approval:

**5.2: Environmental Monitoring Checklist during Construction Stage**

District:

Road Name:

Road ID:

Total length:

Date of site visit:

| <b>SL. No.</b> | <b>Environmental Attributes</b> | <b>Mitigation Measures</b> | <b>Location</b> | <b>Compliance status (Complied, partly complied, not complied)</b> | <b>Corrective action proposed if any</b> |
|----------------|---------------------------------|----------------------------|-----------------|--|--|
| 1.             |                                 |                            |                 |  |  |
| 2.             |                                 |                            |                 |  |  |
| 3.             |                                 |                            |                 |  |  |

Guide note:

- For consistency and easier monitoring the information in the columns of Environmental Attributes, Mitigation Measures and Location/Numbers must be taken from the information in the “During construction stage” of the contract package specific EMP prepared by the contractor
- This checklist must be completed based on site visits to the respective road
- This checklist must be completed one to three times for every rural road and national/OPRC
- road which requires reconstruction depending on the length of the road. Shorter roads that are less than 3 km, will have one checklist completed while the longer roads that are longer
- than 3 km will have at least two or three checklists completed.
- Each report must enclose photographs to demonstrate the mitigation measures implemented

Prepared and submitted by:

Reviewed and approved by:

Date of submission to PIU:

Date of approval:

**5.3. Environmental Monitoring Checklist during Post-Construction or Operation Stage**

District:

Road

Name:

Road

ID:

Total

length:

Date of site visit:

| SL. No. | Environmental Attributes | Mitigation Measures | Location | Compliance status (Complied, partly complied, not complied) | Corrective action proposed if any |
|---------|--------------------------|---------------------|----------|---|-----------------------------------|
| 1.      |                          | ○                   |          |   |                                   |
| 2.      |                          | ○                   |          |   |                                   |
| 3.      |                          | ○                   |          |   |                                   |
|         |                          | ○                   |          |   |                                   |

Guidance notes:

- For consistency and easier monitoring the information in the columns of Environmental Attributes, Mitigation Measures and Location/Numbers must be taken from the information in the “During post-construction and operation stage” of the contract package specific EMP prepared by the contractor
- This checklist must be completed based on site visits to the respective road
- This checklist must be completed once a year for all rural and national/OPRC roads
- Each report must enclose photographs to demonstrate the mitigation measures implemented

Prepared and submitted by:

Reviewed and approved by:

Date of submission to PIU:

Date of approval

## APPENDIX 6: OUTLINE OF AN ENVIRONMENTAL MONITORING REPORT

1. The borrower/client is required to prepare periodic monitoring reports that describe progress with implementation of the project EMP and compliance issues and corrective actions. A sample outline which can be adapted as necessary is provided below. Not all sections will be relevant in all cases. Ranking systems for compliance, mitigation effectiveness, etc., are indicative examples only, and can be modified as appropriate.

### A. Introduction

1. Report Purpose
2. Project Implementation Progress

### B. Incorporation of Environmental Requirements into Project Contractual Arrangements

2. Manner by which EMP requirements are incorporated into contractual arrangements, such as with contractors or other parties.

### C. Summary of Environmental Mitigations and Compensation Measures Implemented

3. Based on EMP, may include measures related to air quality, water quality, noise quality, pollution prevention, biodiversity and natural resources, health and safety, physical cultural resources, capacity building, and others.

### D. Summary of Environmental Monitoring

1. Compliance Inspections (if relevant)
  - a. Summary of Inspection Activities
  - b. Mitigation Compliance<sup>14</sup>
  - c. Mitigation Effectiveness<sup>15</sup>
2. Emission Discharge (Source) monitoring program (if relevant)
  - a. Summary of Monitoring
  - b. Results
  - c. Assessment<sup>16</sup>

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<sup>14</sup> Overall compliance with mitigation implementation requirements could be described in qualitative terms or be evaluated based on a ranking system, such as the following:

1. Very Good (all required mitigations implemented)
2. Good (the majority of required mitigations implemented)
3. Fair (some mitigations implemented)
4. Poor (few mitigations implemented)
5. Very Poor (very few or no mitigations implemented)

Additional explanatory comments should be provided as necessary.

<sup>15</sup> Effectiveness of mitigation implementation could be described in qualitative terms or be evaluated based on a ranking system, such as the following:

1. Very Good (mitigations are fully effective)
2. Good (mitigations are generally effective)
3. Fair (mitigations are partially effective)
4. Poor (mitigations are generally ineffective)
5. Very Poor (mitigations are completely ineffective)

Additional explanatory comments should be provided as necessary.

<sup>16</sup> Discharge levels should be compared to the relevant discharge standards and/or performance indicators noted in

3. Ambient Monitoring Program (if relevant)
  - a. Summary of Monitoring
  - b. Results
  - c. Assessment<sup>17</sup>
4. Key Environmental Issues
  - a. Key Issues Identified
  - b. Action Taken
  - c. Additional Action Required
5. Conclusion
  - a. Overall Progress of Implementation of Environmental management measures<sup>18</sup>
  - b. Problems Identified and Actions Recommended

## Appendices

- I. Site Inspection / Monitoring Reports
- II. Ambient Monitoring Results
- III. Photographs
- IV. Others

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the EMP. Any exceedances should be highlighted for attention and follow-up. In addition, discharge levels could be compared to baseline conditions (if baseline data is available) and described in qualitative terms or be evaluated based on a ranking system, such as the following:

1. Very Good (overall conditions are generally improved)
2. Good (conditions are maintained or slightly improved)
3. Fair (conditions are unchanged)
4. Poor (conditions are moderately degraded)
5. Very Poor (conditions are significantly degraded)

Additional explanatory comments should be provided as necessary.

<sup>17</sup> Ambient environmental conditions should be compared to the relevant ambient standards and/or performance indicators noted in the EMP. Any exceedances should be highlighted for attention and follow-up. In addition, ambient environmental conditions could be compared to the baseline conditions (if baseline data is available) and described in qualitative terms or be evaluated based on a ranking system, such as the following:

1. Very Good (overall conditions are generally improved)
2. Good (conditions are maintained or slightly improved)
3. Fair (conditions are unchanged)
4. Poor (conditions are moderately degraded)
5. Very Poor (conditions are significantly degraded)

Additional explanatory comments should be provided as necessary.

<sup>18</sup> Overall sector environmental management progress could be described in qualitative terms or be evaluated based on a ranking system, such as the following:

1. Very Good
2. Good
3. Fair
4. Poor
5. Very Poor

Additional explanatory comments should be provided as necessary.