

Environmental Assessment and Review Framework

December 2013

IND: SASEC Road Connectivity Investment Program

Prepared by Ministry of Road Transport and Highways, Government of India for the Asian Development Bank

CURRENCY EQUIVALENTS

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Currency unit	–	Indian rupee (INR)
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\$1.00	=	INR 55.425000

ABBREVIATIONS

ADB	–	Asian Development Bank
CPCB	–	Central Pollution Control Board
DPR	–	detailed project report
E&S	–	environment and social
EA	–	executing agency
EAC	–	Expert Appraisal Committee
EARF	–	environmental assessment and review framework
EIA	–	environmental impact assessment
EMP	–	environmental management plan
EMOP	–	environmental monitoring plan
GOI	–	Government of India
GRC	–	grievance redress committee
GRM	–	grievance redress mechanism
IA	–	implementing agency
ISC	–	Implementation support consultants
MOEF	–	Ministry of Environment and Forests
MORTH	–	Ministry of Roads Transport and Highway
NH	–	national highway
PD	–	Project Director
PIU	–	Project Implementation Unit
ROW	–	right of way
SH	–	state highway
SPCB	–	State Pollution Control Board
SPS	–	ADB Safeguard Policy Statement, 2009
WBPWD	–	West Bengal Public Works Division

WEIGHTS AND MEASURES

km	–	kilometer
m	–	meter

NOTE

In this report, "\$" refers to US dollars.

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I. INTRODUCTION

1. ADB has a regional cooperation program in four South Asian countries: Bangladesh, Bhutan, India and Nepal, called South Asia Economic Cooperation (SASEC¹), which has been supporting regional cooperation in the transport sector through SAARC² and BIMSTEC³ over a decade. Major contributions in this regard include assisting the SAARC Regional Multimodal Transport Study (SRMTS)⁴ and BIMSTEC Transport Infrastructure and Logistics Study (BTILS).⁵ A series of SASEC Trade Facilitation and Transport Working Group meetings have endorsed ADB preparation of a project to improve the most critical corridors connecting Nepal, India, Bangladesh and Bhutan in the northern part of West Bengal, so called the “chicken neck” area of India. Further, to initiate connectivity between South Asia and South East Asia and as a follow on activity of the BTILS, strategic roads connecting Bangladesh, India and Myanmar are currently being studied.

2. The proposed Multi tranche Financing Facility (MFF) will upgrade high priority trade corridors comprising of National Highways (NH) and State Highways (SH) connecting five countries: Bangladesh, Bhutan, India, Myanmar and Nepal in the north eastern part of India including North Bengal. Given the large scale of the program and the need to carefully study priority corridors particularly in the India - Bangladesh - Myanmar region, a MFF approach is proposed to finance the project.

3. While approximately six road corridors have been identified for financing under the investment program, currently the scope of only two road corridors are well defined. The options and design for the remaining roads and facilities are still being studied and yet to be clearly defined. Therefore the former are selected for inclusion under tranche I and the latter under succeeding tranches under the program. Given this, the purpose of this EARF is to guide procedures for the selection, environmental assessment and implementation of environment safeguards for the succeeding tranches and ensure compliance to relevant laws and policies of the Government of India and the ADB Safeguard Policy Statement (SPS) 2009. The list of subprojects under tranche I with approximate length and tentative list of subprojects for succeeding tranches with approximate length are provided below in table 1.

Table 1: List of Subprojects

No.	Name of Road/Facility	Length (km)
I	Tranche I subprojects	
1.	AH-2: Panitanki (Nepal border) – Fulbari (Bangladesh border)	37.271
2.	AH-48: Jaigaon (Bhutan border) – Changrabandha (Bangladesh border)	90.56
	TOTAL	127.831
II	Potential subprojects for succeeding tranches	
1.	Imphal – Moreh (Manipur)	107

¹ South Asia Economic Cooperation (SASEC). Member countries are Bangladesh, Bhutan, India and Nepal

² South Asian Association for Regional Cooperation (SAARC). Member countries are Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka

³ Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC). Member countries are Bangladesh, Bhutan, India, Myanmar, Nepal, Sri Lanka and Thailand

⁴ SAARC Secretariat. 2007. *Regional Multimodal Transport Study*. Kathmandu.

⁵ ADB. 2008. *Final Report of RETA6335: BIMSTEC Transport Infrastructure and Logistics Study*. Manila.

No.	Name of Road/Facility	Length (km)
2.	Imphal-Wangjiang-Heirok-Machi-Khudengthabi (Manipur) (Manipur)	65
3.	Imphal-Kanchup-Tamenglong-Tousem-Haflong (Manipur)	80
4.	Greater Imphal Ring Road	37.72
5.	Mechi bridge (West Bengal)	0.600
	TOTAL	290.32
	GRAND TOTAL (APPROXIMATE)	418.151

II. ASSESSMENT OF LEGAL FRAMEWORK AND INSTITUTIONAL CAPACITY

4. The Government of India's Environmental Legal Framework comprises a set of comprehensive acts and regulations aimed at conserving various components of the biological and physical environment including environmental assessment procedures and requirements for public consultation. The policies and requirements which are most relevant in the context of this project are provided in table 2 below.

Table 2: Summary of Environmental Legislation Applicable to the Proposed Project

Act	Objective	Responsible Institution
1. Environment (Protection) Act (1986) and Rules (1986)	To protect and improve the overall environment	MoEF
2. Environmental Impact Assessment (EIA) Notification under Environmental Protection Rules (2006, 2009, 2011) and relevant Office Memorandums (OM)	To provide guidance on environmental clearance requirements and clarification on related specific technical issues	MoEF
3. Wildlife Protection Act (1972 and amended in 1993)	To protect wild animals and birds through the creation of National Parks and Sanctuaries	MoEF
4. The Water (Prevention and Control of Pollution) Act 1972 (Amended 1988) and Rules 1974	To provide for the prevention and control of water pollution and the maintaining or restoring of wholesomeness of water.	CPCB
5. The Air (Prevention and Control of Pollution) Act, 1981(Amended 1987) and Rules 1982	To provide for the prevention, control and abatement of air pollution, and for the establishment of Boards to carry out these purposes.	CPCB and Road Authorities
6. Hazardous Waste (Management, Handling and Trans-boundary Movement) Rules 2008 (Amended 2009),		
7. The Forest (Conservation) Act 1980 (Amended 1988) and Rules 1981 (Amended 2003)	To protect and manage forests	MoEF
8. Central Motor Vehicle Act (1988) and Rules (1988)	To control vehicular air and noise pollution. To regulate	State Transport Department

Act	Objective	Responsible Institution
	development of the transport sector, check and control vehicular air and noise pollution.	
9. Ancient Monuments and Archaeological Sites and Remains Act (1958)	Conservation of Cultural and historical remains found in India.	Archaeological Dept. GOI

5. In addition to the acts and regulations listed above guidance for conducting environmental assessment can be taken from the Environmental Impact Assessment Guidance Manual for Highways 2010 issued by MOEF and the IRC Guidelines for Environmental Impacts Assessment (IRC:104-1988) of highway projects issued by MORTH. The following requirements are particularly important and need special attention in order to avoid any delays for a project:

- (i) As per provisions of the EIA Notification 2006 (amended in 2009, 2011 and 2013), all expansion of national highways that are longer than 100km and involve additional right of way or land acquisition greater than 40m on existing alignment and 60m on realignment or bypass fall under category A and require environmental clearance from the Ministry of Environment and Forests at the central level
- (ii) Under the same notification all new state highways, or expansion of existing state highway in hilly terrain (above 1000 m amsl and or ecologically sensitive areas) fall under category B projects and require Environmental Clearance from State Environmental Impact Assessment Authority at the state level
- (iii) Further, under the same notification, it is stated that any category B project will be treated as category A if located in whole or in part within 10 km from the boundary of: (i) Protected Areas notified under the Wild Life (Protection) Act, 1972; (ii) Critically Polluted areas as notified by the Central Pollution Control Board from time to time; (iii) Notified Eco-sensitive areas; and (iv) interstate boundaries and international boundaries.
- (iv) As per the Forest Conservation Rules (1981, amended 2003) a forestry clearance from Department of Forests is required for diversion of forest land for non-forest purpose. Processing of the forestry clearance entails two stages: stage I and stage II. Amongst other requirements stage I clearance requires the applicant to make payments for compensation of forestry land that will be acquired and trees that will be cut under the project. Accordingly timely allocation of budget for this purpose by the applicant is necessary to expedite the clearance process.
- (v) Cutting of trees in non forest land require a tree cutting permit from the local forestry department. All trees cut under a project must be compensated by compensatory afforestation as required by the Forest Department.⁶

⁶ In Chhattisgarh State, permission would be required for cutting the trees in non-forest areas (road side trees) from District authorities.

- (vi) As per Office Memorandum (OM) issued by MOEF on 19 March 2013 the grant of environmental clearance for linear projects including roads has been delinked from the forestry clearance procedure. Hence, after receipt of environmental clearance construction works may commence on sections/parts of a linear project that do not require forestry clearance. Construction works may commence on sections requiring forestry clearance only after receipt of the respective clearance.
- (vii) Placement of hot-mix plants, quarrying and crushers, batch mixing plants, discharge of sewage from construction camps requires No Objection Certificate (Consent to Establish and Consent to Operate) from State Pollution Control Board prior to establishment.
- (viii) Permission from Central Ground Water Authority is required for extracting ground water for construction purposes, from areas declared as critical or semi critical from ground water potential prospective by them.

6. Updates on the EIA notifications and new OM's issued by MOEF can be seen on the MOEF website: <http://moef.nic.in/divisions/iass/Cir/Circulars.html>. This must be continuously monitored and necessary revisions must be made in implementing applicable environment safeguard requirements.

7. Environmental capacity of the Executing Agency (EA) and Implementing Agency (IA) will need to be strengthened and clear responsibilities assigned. Under tranche I subprojects MORTH will be the EA and the West Bengal Public Works Department (WBPWD) will be the IA or Project Implementation Unit (PIU). An authorized officer for environmental safeguards will be appointed at the EA level and an Environmental Focal Person (EFP) at the IA/PIU level. Internal monitoring on implementation of environment safeguards will be carried out by the PIU while external monitoring will be carried out by the ISC. For environment category A and B projects another external monitoring agency will be engaged to conduct third party monitoring on implementation of environment safeguards. An initial coordination cum training workshop will be conducted by the IA with technical support from ADB to clarify roles and responsibilities of each party for complying with the requirements of this EARF, the respective Environmental Impact Assessment (EIA) or Initial Environmental Examination (IEE), Environmental Management Plan (EMP) and Environmental Monitoring Plan (EMOP). Continued on the job training will be conducted by the ISC or ADB as necessary during project implementation.

III. ANTICIPATED ENVIRONMENTAL IMPACTS

8. The investment program involves improvement of existing national highways, state highways and other types of roads. Improvements may entail: geometric correction, improvement to proper two lane standard, expansion to four lane standard in some sections, construction of bridges construction of cross and longitudinal drainage structures, junction improvements and construction of new road in some sections.

9. AH-48, one of the two subprojects under tranche I passes through a protected area (Jaldhpara National Park) for approximately 2.6 km, government reserved forests for approximately 2 km and includes construction of two new bypass roads totalling about 97km. One of the two bypasses falls within 10 km of the Buxa Tiger Reserve. No environmentally sensitive areas exist in the other subproject AH-02. As per a new notification issued by MOEF on 22 August 2013 (see para 5(i)), both roads do not require an environmental clearance.

However, a forestry clearance for diversion of forest land to non-forest purpose will be required for AH-48 for the sections of about 5km passing through the national park and government reserved forests.

10. Processing of forestry clearance is a time consuming and beauracratc process. However, construction may commence on the project sections that do not require forestry clearance. Dedicated efforts by the executing agency (MORTH) and Implementing Agency (WBPWD) or Project Implementation Unit (PIU) will be made to expedite processing of the forestry clearance. Other potential issues after award of contract works but before start of physical works are delays in obtaining permits for establishment and operation of facilities such as hot mix plants, batching plant, stone crushing plants and others.

11. Significant on site environmental impacts during construction are mainly on forestry, and wildlife related issues. Tree removal will be required and disturbances to wildlife and wildlife movement may occur both during and after construction. To compensate the loss of trees, 5 trees will be planted for every tree removed in collaboration with the local forestry department and local Panchayat. Specific procedures such as stoppage of works when animals (eg. elephants) come in the vicinity of the construction works will be included in the Environmental Management Plan (EMP). Construction time restrictions will also be enforced in sections with important wildlife species. Specific measures have been proposed in the design of roads and bridges to facilitate long term movement of animals in sections known for wildlife presence.

12. Other impacts during construction entail typical road construction issues such as generation of dust from earthworks; noise and exhaust from operation of equipments/machinery/vehicles; generation of construction waste as well as wastes from construction and worker camps; water contamination and water supply issues; occupational health and safety issues with the workers and local communities; issues of erosion and siltation and removal of trees. Mitigation measures to address these which will be covered in the EMP will include but not be limited to: wet spraying to control dust; limiting working hours to minimize disturbance; regular maintenance of vehicles and securing of Pollution under control (PUC) certificates; reuse or proper disposal of construction debris; maintenance of proper hygiene and safety standards and facilities in the camps and working areas; development and implementation of an erosion control and silt management measures.

13. Key benefits of the project will be better regional connectivity and enhanced trade through better quality and wider roads with better road safety. Therefore an increase in traffic volumes can be expected. Given this the main long term environmental impact can be expected to be increased greenhouse gas emissions from the increased traffic. However, a comparative analysis carried out on emissions with and without the project in the EIA, shows that the emissions are actually lower with the project due to improved road conditions.

IV. ENVIRONMENTAL ASSESSMENT FOR SUBPROJECTS

14. All subprojects in succeeding tranches will follow the environmental assessment procedures to meet the requirements of the ADB SPS, MOEF and the respective IRC guidelines as detailed in the following paragraphs. Any subproject which is not subjected to these procedures will not be put forward for consideration or inclusion under the investment program. These procedures will be implemented by the respective executing agency (EA) with the support of the implementing agency (IA).

15. Under the tranche I subprojects, the EA will be MORTH and IA or PIU will be the West Bengal Public Works Department (WBPWD).

A. Screening and Classification

16. Each subproject will be initially screened to understand the nature and significance of anticipated environmental impacts by using the ADB Rapid Environmental Assessment (REA) checklist. Following the initial screening the respective EA will propose and ADB will confirm the environmental categorization of each subproject as A, B or C in accordance with the ADB SPS. Categorization as A or B under the criteria of the EIA notification 2006, of MOEF will also be determined and intimated to ADB.

17. Both tranche I subprojects are categorized as A under ADB SPS criteria but do not require environmental clearances from MOEF as per the amendment of the EIA notification of 22 August 2013.

B. Environmental Selection Criteria

18. The following Criteria shall be applied for selection of subproject roads:

- (i) The subprojects selected will be part of priority roads that will enhance regional connectivity within SASEC and/or BIMSTEC countries.
- (ii) As much as possible all efforts will be made to avoid subprojects passing through or near eco sensitive areas such as designated wild-life sanctuaries, national parks, notified ecological sensitive areas or area of international significance (e.g., protected wetland designated by the Wetland Convention). If absolutely unavoidable, project passing through critical habitat areas can be selected only (i) if no alternatives are available, (ii) there are no measurable adverse impacts on the critical habitat that could impair its ability to function (iii) there is no reduction in the population of any recognized endangered or critically endangered species (iii) any lesser impacts can be mitigated (iv) the overall benefits from the project substantially outweigh the environmental costs (v) Any conversion or degradation can be appropriately mitigated and (vi) the respective wildlife agency supports the subproject.
- (iii) As much as possible subprojects or sections passing through reserved forests where enough ROW is not available must be avoided. If absolutely unavoidable, project passing through reserved forests can be selected only (i) if no alternatives are available, (ii) any lesser impacts can be mitigated (iii) the overall benefits from the project substantially outweigh the environmental costs (iv) Any conversion or degradation can be appropriately mitigated.
- (iv) As much as possible subprojects passing through or near cultural heritage designated by UNESCO or declared as archeologically protected by GOI must be avoided. If absolutely unavoidable, project passing through or near such sites be selected only (i) if no alternatives are available, (ii) any lesser impacts can be mitigated (iii) the overall benefits from the project substantially outweigh the environmental costs.

19. For the case of the tranche I subprojects, under criteria (i) both roads are high priority corridors. They will significantly improve connectivity and trade between SASEC countries and

also initiate connectivity between South Asia and South East Asia. Under criteria (ii) and (iii) AH-48 passes through the Jaldhpara National Park, near the Buxa Tiger Reserve and also two reserved forests for a total of approximately 6.418km. AH-02 does not pass through any eco sensitive areas. The preferred alternative is to improve the existing road rather than making a new one and cause further fragmentation of wildlife habitat and forests. No measurable adverse impacts and reduction in population of endangered species is anticipated as the function of facilitating and allowing wildlife movement across the road and bridges will be maintained through specific engineering interventions. All negative environmental impacts will be addressed through mitigation measures proposed in the EMP. Compensation for trees removed for both roads will be carried out at a rate of 1:5. The Warden of both the national park and tiger reserve have no objections against the project and are providing support and guidance to process the forestry and wildlife clearance. Both roads do not pass through or near any heritage sites under UNESCO or the Archaeological Survey of India (ASI).

C. Environmental Assessments and Environmental Management Plans

20. The preparation of EIA's for Category A subprojects and IEE's for category B subprojects in the succeeding tranches will be guided by the objective of ensuring the environmental soundness, sustainability and integration of environmental considerations into the project decision making process. Environmental impacts will be avoided, and where not possible, minimized, mitigated, offsetted and positive impacts will be enhanced through implementation of the EMP.

21. The EIA or IEE study will be conducted in accordance with the requirements of ADB's SPS 2009 as well as MOEF, where required. In cases where environmental assessment reports are required for both ADB and MOEF two separate reports will need to be prepared, since the procedures and timeline for preparation of environmental assessment reports for ADB and MOEF are different. However data collection and analysis and public consultations maybe carried out together to the extent possible to fulfill the needs of both ADB and MOEF.

22. The EIA or IEE study should clearly identify and describe the area of impact, provide an assessment of potential impacts and mitigation measures and involve public consultations with affected people and other relevant stakeholders. It should include a comprehensive and practical EMP and EMOP and clear institutional arrangements for implementing them. The conclusion of the study should clearly state whether (a) the EIA is the completed environmental assessment or (b) further assessment work is required and will be incorporated in a revised EIA. For example, some project roads may need continued or follow up monitoring of biodiversity related issues during project construction. In such cases this must be stated accordingly in the EIA.

23. In accordance with the requirements of ADB's SPS while preparing the EIA or IEE the following issues (but not limited to these) must be investigated:

- 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 (Inputs for this section can be taken from the Slope Protection Study)
- iii) Potential waste issues including excavated spoil, hazardous materials and wastes and appropriate measures for their disposal, treatment and other forms of management.

- iv) Climate change impacts to the project and recommendations for adaptation as well as mitigation
- v) Occupational Health Safety issues and measures for the construction workers as well as the local communities in and around the project site.
- vi) Cumulative and Induced Impacts of the project in light of existing environment, ongoing development projects and planned projects in the near future
- vii) Potential impacts on physical and cultural resources and measures to avoid, minimize or mitigate impacts.
- viii) Grievance Redressal Mechanism to address concerns and grievances of the affected people in the course of the project cycle.
- ix) For category A projects an analysis of alternatives on location and/or technical design of respective subprojects will also need to be carried out

24. For the case of the tranche I subprojects, only one consolidated EIA report including EMP has been prepared as they are located within the same state and similar geographic area. The same approach will be followed to the extent possible in similar situations for the subprojects in succeeding tranches.

25. Tranche I roads are following the Engineering Procurement and Construction (EPC) modality. Therefore the final detailed design will be prepared by the contractor. Hence, updating of the EMP and EMOP where necessary as well as implementation of the EMP and EMOP during construction will be included under the contractor's tasks. For succeeding tranche's with subprojects following EPC modality similar requirements will be made for the contractor. For cases where the contract awards are based on other modalities such as item rates, necessary clauses on environment safeguards will be included in the main text of the contract documents and the EMP matrix from the final EIA or Initial Environmental Examination (IEE) report will be attached to the bidding documents. Hence, the contractor will be required to include the costs for implementing the environmental clauses and EMP in their bid.

V. CONSULTATION, INFORMATION DISCLOSURE AND GRIEVANCE REDRESS MECHANISM

A. Consultation

25. Meaningful public consultations must be held early on and continuously throughout the project development stage to allow the incorporation of relevant views of the stakeholders in the final subproject design, mitigation measures, implementation issues, and enhance the distribution of benefits. Stakeholders should include project beneficiaries, local affected people, government bodies, and non-governmental organizations. Consultations must be carried out in an environment free of coercion or intimidation and may be done through meetings, focus group discussions, interviews, hearings which will start with the description of the subproject design and initial identification of potential impacts. The consultations must encourage women participation and engage as many stakeholders as possible. All consultations conducted must be documented clearly in the EIA or IEE report. The findings of the EIA or IEE must be shared in a form or nature that is accessible and understandable by the affected persons and relevant stakeholders or necessary recommendations and guidelines made for sharing such kind of information at a later stage.

B. Information Disclosure

27. In all subprojects under respective tranches, disclosing the environmental document to the public will be the responsibility of the respective EA. For the case of road sections of tranche I subprojects this is MORTH and WBPWD. The EA will be responsible for ensuring that all environmental assessment documentation, including environmental due diligence (where necessary) and monitoring reports, are properly and systematically kept as part of the subproject-specific record. All environmental documents are subject to ADB's Communication Policy 2011 and ADB SPS 2009. Therefore, these should be made available on request. For the case of category "A" subprojects, the draft EIA report will be disclosed to the public through the ADB website, 120 days before the approval of the respective tranche for ADB financing. The draft EIA report will also be made available to all stakeholders as part of the consultation process required under the SPS 2009. The IEE report for category B projects will need to be disclosed to the public through the ADB website before the approval of the respective tranche for ADB financing. For category A projects semi-annual monitoring reports and for category B projects, annual monitoring reports need to be disclosed to the public through the ADB website.

28. For the tranche I subprojects, concurrence for disclosure of the EIA report will be obtained from the EA which is MORTH. A similar approach will be followed for the non-sample subprojects.

C. Grievance Redress Mechanism (GRM)

29. Grievances related to the implementation of the project, particularly regarding the environmental management plan will be acknowledged, evaluated, and responded to the complainant with corrective actions proposed using understandable and transparent processes that are gender responsive, culturally appropriate, and readily accessible to all segments of the affected people. The responsibility agency for addressing the grievances along with proper timelines will be clearly indicated. Records of grievances received, corrective actions taken and their outcomes will be properly maintained and form part of the environmental monitoring report to ADB.

30. Depending on the nature and significance of the grievances or complaints, the GRM will comprise procedures to address grievances at the project site level, IA level, EA level and the Grievance Redress Committee (GRC). Most serious complaints which cannot be addressed at the EA level will be forwarded to the GRC. The GRC will comprise members from the EA, IA, ISC, contractor, local community and local forestry authority.

31. During preparation of EIA/IEE or at least during pre-construction stage the local communities in the project area will be informed on the grievance redress procedure and the contact persons for lodging complaints. Provisions shall also be made for lodging complaints at the respective EA's website.

VI. INSTITUTIONAL ARRANGEMENT FOR IMPLEMENTING EARF AND RESPONSIBILITIES

32. The EA with the support of the respective IA for each tranche will be responsible for ensuring that all components of this EARF are complied with during implementation of the entire investment program.

33. Immediately after identification of a subproject for inclusion under the investment program, an officer within the EA will be designated to serve as the overall authority and

authorized signatory for formal approval and endorsement of all reports, forwarding letters, communications and any document related to environment safeguards under the project. The IA or PIU will be directly responsible for implementing the detailed requirements of the EARF, EIA or IEE and EMP at the project office and site level. Similarly within the IA an Environmental Focal Person (EFP) will be appointed immediately after identification of a subproject for inclusion in the investment program. The designated person at the EA and EFP at the IA level will be supported by environmental specialists under Implementation Support Consultants (ISC), and EFP of each contract package as given in figure 1. For category A and B subprojects an external monitoring agency such as a consultancy firm or NGO will be engaged to conduct third party monitoring of environment safeguards implementation. For cases where one subproject has more than one EA and IA, the respective EA's and IA's will work closely together to ensure environment safeguards requirements of the respective subproject are met on a proper and timely basis.

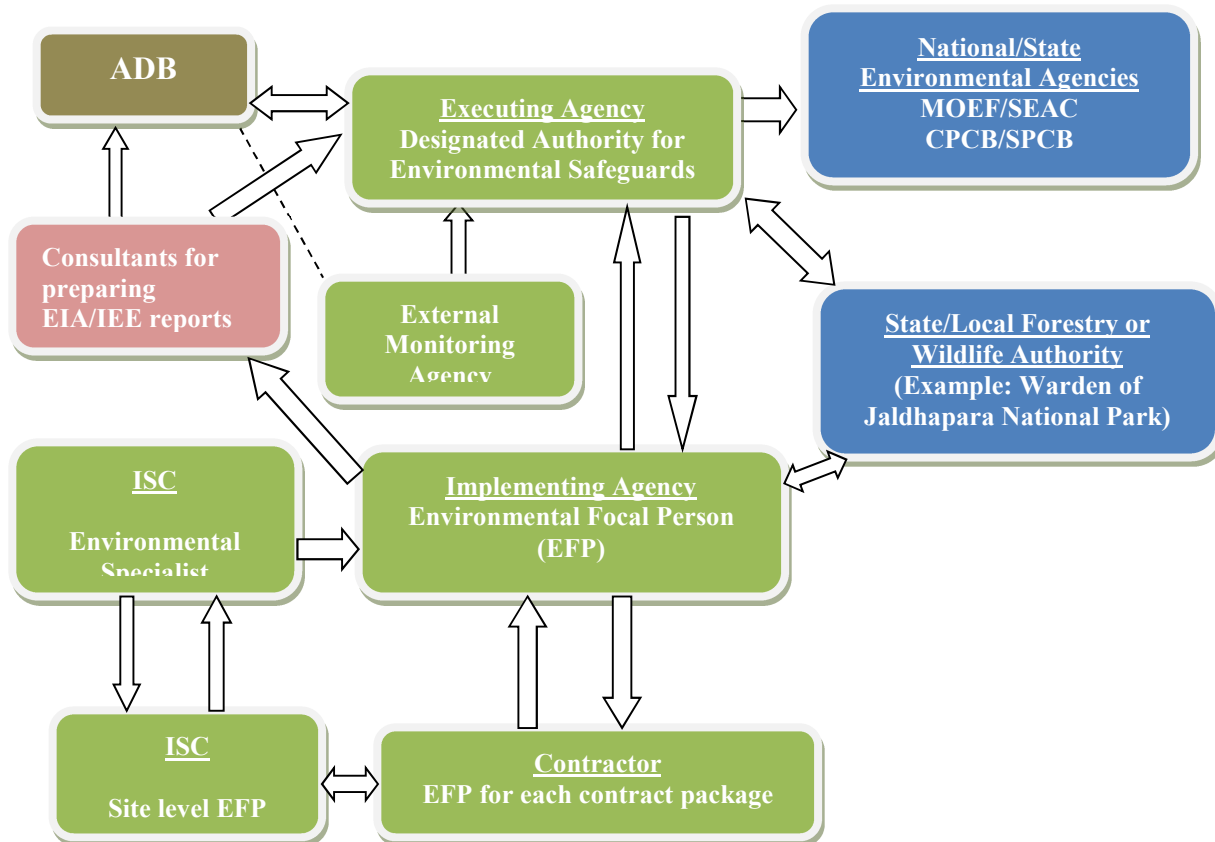
34. For the tranche I subprojects an authorized official for making decisions on environment safeguards and signing documents have been appointed at MORTH and an EFP has been appointed at WBPWD. The ISC will support WBPWD on daily implementation and monitoring of environment safeguards. Since this tranche is an environment category A project an external monitoring agency such as a consultancy firm or NGO will be engaged to provide technical guidance and monitor implementation environment safeguard activities during construction as well as operation. This approach may also be used for subprojects in succeeding tranches when necessary.

A. Responsibilities of the Executing Agency

35. The EA's responsibilities will mainly be focussed on addressing national or state level environment safeguard issues and decisions concerning the subprojects. Specific responsibilities on environment safeguards at the EA level are:

- i. Ensure that all environment safeguard requirements as given in this EARF, ADB SPS 2009, and applicable laws and rules under MOEF (as given in table 1) are being complied with during all stages of respective subprojects under the loan.
- ii. Reviewing and approving all environment safeguards related documents such as EIA or IEE, monitoring reports etc. prepared for subprojects under the investment program with recommendations and clarifications from the IA where necessary.
- iii. Timely endorsement and signing of key documents and forwarding to the respective agency such as those required for processing of environmental clearance, forestry clearance etc. and disclosure on ADB website.
- iv. Taking proactive and timely measures to address any environment safeguards related challenges at the national or state level such as delays in processing of clearances (during pre-construction stage), significant grievances (during construction stage)
- v. Recruiting an external monitor to conduct third party environmental monitoring for category A and B subprojects

Figure 1: Institutional Arrangements



B. Responsibilities of the Implementing Agency

36. The IA's responsibilities will mainly be focussed on implementing environment safeguard requirements in accordance with this EARF, the EIA or IEE and EMP at the project and site level. Specific responsibilities on environment safeguards at the IA level are:

- i. Where necessary hire an environmental consultant to prepare IEE or EIA report including EMP as may be required
- ii. Ensure that the consultant follows all procedures for conducting the environmental assessment as given in section IV.C
- iii. Review the budgetary needs for complying with the Government's and ADB's requirements on environment safeguards and ensure the proposed budget is in line with table 3.
- iv. Prepare forms, reports and all documents etc. for processing of environmental, forestry and related clearances in a timely manner and submit them for further review and signing to the authorized officer in the respective EA office

- v. If any problems or long delays are encountered when processing the clearance documents, immediately alert the authorized officer at the EA level and seek ways resolve the problem at the soonest
- vi. Provide necessary support to the consultants preparing the environmental assessment reports to facilitate smooth and efficient preparation of documents, conduction of meetings, conduction of public hearings etc. required by ADB, MOEF, SPCB, Forestry Department, Wildlife Board etc.
- vii. Review the EIA or IEE reports including EMP and EMOP prepared by the consultant and provide comments if necessary.
- viii. After receipt of satisfactory EIA or IEE report including EMP and EMOP forward the respective reports to the respective EA for further endorsement and forwarding to ADB for disclosure on the ADB website
- ix. Ensure that all necessary regulatory clearances are obtained prior to commencing any civil work of the respective contract package or road section;
- x. Ensure that for Engineering Procurement and Construction (EPC) based contracts updating of the EMP and EMOP based on detailed design and implementation of the EMP is included under the contractor's responsibilities;
- xi. Ensure that the EMP which include required mitigation measures and monitoring requirements with defined Bill of Quantity (BOQ), forms part of bidding document for the case of item rate based contracts;
- xii. Ensure that contractors have access to the EIA or IEE report including EMP and EMOP of the subprojects;
- xiii. Ensure that contractors understand their responsibilities to mitigate environmental problems associated with their construction activities
- xiv. Ensure and Monitor that all required permits, no objection certificates etc. are obtained by the contractor for establishment and operation of equipments and facilities (as given in table 1)
- xv. With the support of the EFP of the contractors and ISC ensure that the contractor implements the EMP including EMOP as given in the respective EIA or IEE report;
- xvi. In case of unanticipated environmental impacts during project implementation stage, with the support of ISC prepare and implement an updated EMP to account for such impacts after seeking concurrence from ADB. The updating shall be carried out after due consultation with the stake holders and concerned government agencies;
- xvii. In case during project implementation a subproject needs to be realigned, review the environmental classification and revise accordingly, and identify whether supplementary IEE or EIA study is required. If it is required, prepare the TOR for

undertaking supplementary IEE or EIA and hire an environment consultant to carry out the study;

- xviii. Ensure that construction workers work under safe and healthy working environment;
- xix. Ensure effective implementation of Grievance Redress Mechanism (as given in section V.C) to address affected people's concerns and complaints,
- xx. Submit semi-annual reports for category A subprojects and annual reports for category B subprojects on the implementation of all environment safeguard requirements including the EMP and EMOP under the respective subproject to ADB and make these reports available for public disclosure;

C. ADB's Responsibilities

37. ADB is responsible for the following:
- (i) Review REA checklist and endorse or modify the tranche classification proposed by the EA
 - (ii) Review EIA or IEE reports and disclose the draft and final reports on the ADB website as required;
 - (iii) Issue subproject's approval based on EIA or IEE reports;
 - (iv) Monitor implementation of the EMP through due diligence missions;
 - (v) Provide assistance to the EA and IA of subprojects, if required, in carrying out its responsibilities and for building capacity for safeguard compliance;
 - (vi) Monitor overall compliance of the subprojects to this EARF; and
 - (vii) If necessary provide further guidance to the IA on the format, content, and scope of the EIA or IEE reports and annual and/or semi-annual monitoring reports for submission to ADB.

38. Budget requirements for implementing this EARF includes costs for i) screening and categorization and preparation of IEE/EIA reports including EMP and EMOP for each subproject, and (ii) institutional and capacity building activities. Table 3 serves as a guide on the allocation and planning of budget for implementing the requirements of this EARF. The budget amount provided are rough estimates and maybe adjusted based on the scope and needs of each tranche and subproject.

Table 3: Budget Plan for each Subproject

No.	Activity	Budget Source	Approximate amount (US\$)	Budget Purpose	Remarks
1	Screening, categorization, preparation of IEE/EIA, EMP and EMOP	ADB TA	\$80,000.00	Consultant fees including costs for surveys and field investigations	
2	Institutional and Capacity Building				

No.	Activity	Budget Source	Approximate amount (US\$)	Budget Purpose	Remarks
	(i) Designation of of authorized officer for environment safeguards (ii) Recruitment/ appointment of EFP (iii) Training workshops	(i) EA (ii) IA (iii) ADB and EA/IA	(i) (ii) Included in project management budget under government contribution (ii) \$5,000 per subproject	(i) (ii) Salary for authorized officer and EFP (iii) Logistical costs for training and resource person fees	

VII. MONITORING AND REPORTING

39. The IA has the responsibility for undertaking environmental due diligence and monitoring the implementation of environmental mitigation measures for all sub-projects under respective tranches. The due diligence report as well as monitoring implementation of the environmental management plan needs to be documented systematically. ADB must be given access to undertake environmental due diligence for all sub-projects, if needed.

40. The EMP will have internal monitoring and external monitoring. The monitoring reports will document progress made in EMP implementation, with particular attention to compliance with each component of EMP. The IA through the EA will submit semi-annual monitoring reports for category A and annual monitoring reports for category B projects to ADB.

41. Monitoring during construction will also be the responsibility of the IA. Monitoring will relate to compliance with construction contracts, effectiveness of mitigation measures, and complaints (also known as 'project performance monitoring'), and the state and health of nearby environmental resources (also known as 'ambient environmental monitoring'). Ambient monitoring will follow the approach to selecting quantitative standards, as recommended in the ADB's SPS 2009.

42. Monitoring during operation should be conducted on an as-needed basis in accordance with the procedures set out in the respective EIA or IEE. For example, under tranche I, monitoring on the effectiveness of the wildlife habitat enhancement measures and greenhouse gas emissions will be carried out for atleast three years during project operation. Reporting will be to the State Pollution Control Board as applicable and to ADB.