

Environmental Assessment and Review Framework

May 2016

IND: Rajasthan State Highway Investment Program

Prepared by PPP Division, Public Works Department, Government of Rajasthan for the Asian Development Bank.

CURRENCY EQUIVALENTS

(as of March 2016)

Currency unit	–	Indian Rupee (Rs)
INR1.00	=	\$ \$.01490
\$1.00	=	INR 67.12

ABBREVIATIONS

ADB	–	Asian Development Bank
ASI		Archeological Survey of India
CCF	–	Chief Conservator Forest
CFE	–	Certificate for Establishment
CFO	–	Certificate for Operation
DPR	–	detailed project report
EA	–	Executing Agency
EAC	–	Expert Appraisal Committee
EARF	–	Environmental Assessment and Review Framework
EFP	–	Environment Focal Person
EMP	–	environmental management plan
EMOP	–	environmental monitoring plan
GOI	–	Government of India
GOR	–	Government of Rajasthan
GRC	–	grievance redress committee
GRM	–	grievance redress mechanism
IEE	–	Initial Environmental Examination
IRC	–	Indian Road Congress
MDR	–	Major District Road
MFF	–	Multitranches Financing Facility
MOEF	–	Ministry of Environment and Forests
MORTH	–	Ministry of Roads Transport and Highway
ODR	–	Ordinary District Road
PD	–	Project Director
PIU	–	Project Implementation Unit
PMC	–	Project Management Consultant
PPP	–	Public-Private Partnership
RSHDP	–	Rajasthan State Highway Development Program
RSHIP	–	Rajasthan State Highway Investment Program
RSPCB	–	Rajasthan State Pollution Control Board
ROW	–	right of way
SH	–	state highway
SOE	–	Safeguard Officer – Environment
SPS	–	ADB Safeguard Policy Statement, 2009
VGf	–	Viability Gap Funding
WLS	–	Wildlife Sanctuary

WEIGHTS AND MEASURES

km	–	kilometer
m	–	meter

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I. INTRODUCTION

1. Rajasthan has a road network of 193,017 km, including 7,260 km of National Highways (NH), 10,953 km of State Highways (SH), 9,900 km of Major District Roads (MDR), 25,033 km of Other District Roads (ODR) and 139,871 km of Village/Rural Roads. Road density in Rajasthan is only about 60 km per 100 sq. km, compared to the national average of 110. Per capita development cost in the state is very high due to the widely dispersed population. Years of under-investment and inadequate maintenance left many of the State Highways and MDRs in poor condition in terms of riding quality, geometry, pavement strength, drainage, and safety standards. To provide effective linkages from rural areas to markets and to support growing economic potential of the state, significant improvements in the highway network are required. There has been limited investment in improving state highways and district roads to accommodate greater volumes of traffic, but much more is required to develop the state highway network.¹

2. To improve the state core network, comprising all state highways and major district roads, the state government initiated the implementation of Rajasthan State Highways Development Program (RSHDP). RSHDP aims to improve about 20,000 km of state highways and major district roads to 2-lane standard in two phases during a period of 5 years from 2014 to 2018. The phase 1 of RSHDP was designed to engage private sector investment through public-private partnership (PPP) for about 9,000 km of state highways. Two models of PPP are developed, viability gap funding (VGF) for roads with adequate capacity of revenue generation, and annuity for other roads.

3. The GOR, through the Department of Economic Affairs of Ministry of Finance, GOI, requested ADB to consider a loan of \$500 million to help finance the civil works under the PPP contracts, and support the capacity development for the PWD of Rajasthan on the key areas such as policy and business procedures, road asset management, and road safety.

4. A Multitranche Financing Facility (MFF) modality will be followed to finance the Rajasthan State Highway Investment Program (RSHIP) due to its large scale of investment. Tranche 1 will finance 16 subprojects totalling about 1,009 kilometers. The list of subprojects is provided in table 1. This Environmental Assessment Review Framework (EARF) has been prepared to serve as a guide on procedures for complying with environment safeguard requirements according to the ADB SPS and environmental policies of the Government of India for subprojects that will be taken up under subsequent tranches.

5. The state highways proposed for upgrading under Tranche 1 are distributed across 15 districts, namely: Kota, Jhalawar, Bharatpur, Alwar, Pali, Barmer, Jalore, Nagaur, Sikar, Churu, Jhunjhunu, Hanumangarh, Jaipur, Ajmer, and Bikaner districts of Rajasthan state. The State can be divided into two major divisions structurally along the Aravalli range which cuts the state into east and west Rajasthan. The Tranche 1 state highways are mostly located in western Rajasthan except few stretches which falls under Kota and Jhalawar districts.

6. The proposed upgrading generally includes:

- (i) Cross-section improvement: Project road improvement will follow the state highway standards prescribed by Indian Road Congress (IRC: SP: 73-2007) and

¹ ADB (2015). IND: Proposed Rajasthan State Highway Sector Project. Consultation Mission (6-10 February 2015)

Ministry of Road Transport and Highways (MORTH) Guidelines. In general, the improvement of the project roads involves widening from single/intermediate/2-lane to 2-lane with granular shoulder of 2.5 m on both sides. The upgrading also involves pavement improvement, reconstruction and widening of CD structures, provision of roadside drains, and raising of embankment in water logged sections. To the extent feasible, all proposed improvements are limited within the ROW however, land acquisition is inevitable for curve improvement, toll plazas, and by-passes.

- (ii) Appurtenances: Includes toll plaza and bus bays.
- (iii) Road Safety: At-grade intersection improvements; geometric realignments; facilities for pedestrians like zebra crossing, stop line, and guard rails; traffic control and safety measures to include rigid, flexible, and semi-rigid safety barriers, road signs, pavement markings, kilometer stones, and delineators as required in IRC: 8, IRC:25, IRC:26, IRC:35, IRC:67, IRC:103 and Section 800 of MORTH. Key features includes provisions of crash barriers in high embankment areas, speed breakers near built-up areas, school, and toll plazas, speed restrictions in built-up sections and active wildlife crossing areas, delineators, road studs, cat's eye, chevrons, object markers etc. have been included in the design. Also required is the preparation of a proper traffic diversion consistent with IRC: SP: 55-2014.

Table 1. List of Subprojects under Tranche 1

PWD Road ID	Name	Existing ID	Number of Bypasses	Length of Bypass	Project Road Length
Package-1					
R015	Kanwas-Aklera Road	SH-74	1	4.85	80.020
R131	Deoli – Kanwas	SH-74 A	0		14.850
R082	A lot - Gangdhar - Suwasara	SH-19C	-	-	24.550
R005	Kherli-Pahari Road	SH-22	0	-	61.160
Sub-Total					180.580
Package-2					
R025	Sanderao- Bali- Mundara	SH-16	0	0	29.420
R026	Barmer- Sindhari- Jalore (Up to Bishangarh)	SH-16	0	0	148.090
					177.510
Package-3					
R126	Nagaur – Tarnau	SH19	0	0	
R019	Tarnau - Mukundgarh	SH-60, SH-20, SH-83,SH-82, SH-8, SH-82 A			
R126 & R019 combined	Nagaur-Tarnau-Deewana –Mukundgarh	SH19 SH-60, SH-20, SH-83, SH-8 ,SH-82, SH-82 A	5	16.605	210.415
R043	Sanju – Tarnau	SH-60	0	0	16.710
R124	Peelibanga - Lukhuwali		0	0	34.548
R127	Roopangarh - Naraina	SH-100	0	0	34.792
R079	Churu- Bhaleri	SH-69	0		34.800
R075	Sardarsher – Lunkaransar	SH-6A	0		75.800
Sub-Total					407.065

PWD Road ID	Name	Existing ID	Number of Bypasses	Length of Bypass	Project Road Length
Package-4					
R086	Singhana- Buhana- Haryana Border	SH13B	1	1.35	34.190
R010	Ajeetgarh-Chala	SH13	0	33.135
	Sikar-Ganeri- Jaswantgarh	SH-20 & 20 A	4	11.47	83.260
R017	Bidasar-Nokha	SH-20			93.000
Sub-Total					243.585
Tranche-1 Total					1,008.740

II. ASSESSMENT OF LEGAL FRAMEWORK AND INSTITUTIONAL CAPACITY

7. The implementation of the RSHIP will comply with the environmental acts, policies, rules, and regulations of the Government of India which has a comprehensive coverage of environmental issues and requirements. This environmental legal framework imposes command and controls on certain activities deemed detrimental to the environmental integrity and encompass the conservation of various components of the biological and physical environment and 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

No.	Act	Application to the Project	Responsible Institution
1	National Environmental Policy, 2006	Project should adhere to the principle of environmental resources conservation and pollution abatement	MoEF
2	Environment (Protection) Act (1986) and Rules (1986) including amendments	Project should follow applicable requirements of the Act and Rules	MoEF
3	Environmental Impact Assessment (EIA) Notification under Environmental Protection Rules (2006, 2009, 2011) and relevant Office Memorandums (OM)	<ul style="list-style-type: none"> Category B2 projects does not require EC State highways inside protected areas notified under the Wildlife Protection Act 1972 classified as Cat. B For tranche 1 none of the roads fall under category B 	MoEF
4	Wildlife Protection Act (1972 and amended in 1993)	<ul style="list-style-type: none"> Applicable to subprojects located within core or buffer zone of Protected Areas (Wildlife Sanctuaries, National parks, biosphere reserves etc) Permission from chief wildlife warden/ State Wildlife Board/ National Board of Wildlife For T1, none of the project roads are located inside core or buffer 	MoEF

		zone	
5	Notification of Eco-Sensitive Zones	<ul style="list-style-type: none"> • Restriction of activities (including construction, tree cutting, etc) in the notified zones • There are no eco sensitive zones in or near the sub-project roads 	MOEF CCF
5	The Water (Prevention and Control of Pollution) Act 1972 (Amended 1988) and Rules 1974	<ul style="list-style-type: none"> • Provides effluent standards to be complied by the labor and construction camp • Requires control of suspended solids from exposed construction sites 	RSPCB
6	The Air (Prevention and Control of Pollution) Act, 1981(Amended 1987) and Rules 1982	<ul style="list-style-type: none"> • Applicable for equipment and machineries potential to emit air pollution hot mix plant, rock crusher, diesel generator and construction vehicles • Consent for Establishment (CFE) and Consent for Operation (CFO) from RPCB 	RPCB and Road Authorities
7	Municipal Solid Waste (Management and Handling) Rules, 2000	<ul style="list-style-type: none"> • Solid waste generated from the camps and demolition debris 	
7	Hazardous Waste (Management, Handling and Trans-boundary Movement) Rules 2008 (Amended 2009),	<ul style="list-style-type: none"> • Rules defines and classifies hazardous waste • Provides procedures for handling hazardous wastes like oils, lubricants, and bitumen 	RSPCB
8	The Forest (Conservation) Act 1980 (Amended 1988) and Rules 1981 (Amended 2003)	<ul style="list-style-type: none"> • Restricts use of forest lands for non-forest purposes • Applicable to project roads located in forests; requires prior permission to take up the works 	MoEF
9	Central Motor Vehicle Act (1988) and Rules (1988)	<ul style="list-style-type: none"> • To control vehicular air and noise pollution. To regulate development of the transport sector, check and control vehicular air and noise pollution. 	State Transport Department
10	Ancient Monuments and Archaeological Sites and Remains Act (1958)	<ul style="list-style-type: none"> • Applicable to subprojects located in proximity with the Protected Monuments/ Sites • No excavation/construction work is allowed within 300 m boundary of the protected monument • Requires prior permission of Archaeological Survey of India (ASI) for taking works within 500 m of boundary of the Protected Monuments 	Rajasthan Archaeological Dept. GOI

8. The following requirements are particularly important and need special attention in order to avoid any delays for a project:

- (i) Under EIA Notification 2006 (amended 2009, 2011, and 2013) all new state highways, or expansion of existing state highway outside hilly terrain above 1000 m amsl and or ecologically sensitive areas does not require environmental clearance.
- (ii) Further, under the same notification, it is stated that any state highway projects will be treated as category A if located in whole or in part within 5 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) 5 kilometers from interstate boundaries and international boundaries.
- (iii) 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.
- (iv) 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 State Forest Department.
- (v) 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.
- (vi) Permission from Central Ground Water Authority is required for extracting ground water for construction purposes.

9. 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.

10. The Government of Rajasthan (GOR) through the RPWD will be the Executing Agency (EA) for this MFF. The capacity of the EA will be enhanced to ensure implementation of environment safeguard requirements and comply with environmental regulations of GOI and ADB's SPS. The PPWD-Public Private Partnership (PPP) Division will be the implementing agency (IA). A Safeguard Officer – Environment (SOE) with the rank of Executive Engineer will be appointed in the PMU to manage overall compliance of the project with requirements of GOI and ADB. The Project Management Consultant (PMC) team will include an Environmental Specialist to supervise, guide and train the contractor on implementation of the EMP and EMOP and will assign relevant staff on site per package to oversee day to day implementation of the EMP. The contractor's team will include health and safety officers and/or environmental focal persons to ensure implementation of the EMP and EMOP. Further details on implementation arrangements are provided in section VI.

III. ANTICIPATED ENVIRONMENTAL IMPACTS

11. The scope of works under Tranche 1 involves upgrading of existing and recently notified state highways through widening of existing roads into 2 lane with shoulders. All 16 roads with an aggregate length of 1,009 kms are existing², outside any legally protected, eco-sensitive, or critical habitat areas³. RSHIP Tranche 1 is classified as environment Category B in accordance with the ADB's SPS 2009. Most of the adverse impacts are co-terminus with the construction stage, site specific, limited within the RoW, and are easily mitigated through good engineering and housekeeping practices.

12. Anticipated adverse impacts from the proposed state highway upgrading are: i) localized deterioration of air quality from dust generation due to unpaved road travel, materials transport, and earthmoving and fumes from vehicular and plant emissions; ii) increase in ambient noise level during construction from heavy equipment operation and increase traffic particularly along the project road corridor; iii) loss of vegetation due to road widening; iv) land conversion and resettlement; and v) increase risk in animal-vehicle crashes. Other significant impacts include:

- a. Pre-construction phase: i) temporary disturbance of utility services from shifting; and ii) injury or death of animals from inadequate design and provision of crossings.
- b. Construction phase: i) loss of productive soil from earth borrowing; ii) contamination of soil from oil and bitumen leaks and spills; iii) depletion of groundwater for construction and dust control; iv) generation of wastewater from the construction camps and plants and risk of surface water contamination; v) loss of fauna from poaching; vi) occupational health and safety; vii) generation of demolition debris; ix) health and safety risk from heavy equipment operation and construction activities near community areas; ix) partial of full blockage of pedestrian access; and x) unrestored construction sites.
- c. Operation Phase: i) contamination of water resources from road surface run-off; v) localized flooding from inadequate drainage maintenance; ii) increase in solid waste from passengers; iii) increase in road crashes; and iv) risk of toxic and hazardous chemical spills from bulk transported

13. Key benefits from the state highway improvement will be better connectivity and enhanced trade through better quality and wider roads with better road safety. Through modelling, emissions from with and without the project shows that the emissions are lower with the project due to improved road conditions.

IV. ENVIRONMENTAL ASSESSMENT FOR SUBPROJECTS

14. All succeeding subproject roads will follow the environmental assessment procedures to meet the requirements of the ADB SPS 2009, MOEF, and the respective IRC guidelines as

² Of the total, 30.69 kms are by-passes to minimize resettlement and are located on agricultural lands

³ 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.

detailed in the following paragraphs. Any subproject which is not subjected to these procedures will not be considered for inclusion under the investment program by the RPWD.

A. Screening and Classification

15. 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, RPWD 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. Only road projects classified as ADB Category B will be considered eligible.

B. Environmental Selection Criteria

16. The following criteria shall be applied for selection of subproject roads:

- (i) The subproject road is part of the Rajasthan State Highways Development Program (RSHDP)
- (ii) Subproject road is not passing through or near eco sensitive areas such as designated wild-life sanctuaries⁴, national parks⁵, notified ecological sensitive areas or area of international significance (e.g., protected wetland designated by the Wetland Convention) and cultural heritage designated by UNESCO or declared as archeologically protected by GOI and State of Rajasthan.
- (iii) Sub-project road is not passing through known corridor of endangered or critically endangered species based on IUCN categorization
- (iv) 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 if: (i) 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.

C. Environmental Assessments and Environmental Management Plans

17. The preparation of succeeding state-level IEE's for category B subprojects 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, and positive impacts will be enhanced through implementation of the Environmental Management Plan (EMP).

18. The IEE study will be conducted in accordance with the requirements of ADB's SPS 2009. The study will 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

⁴ Desert WLS, Darrah WLS, Sariska WLS, Bandh BarathaWLS, Bassi WLS, Bhensrodgarh WLS, Jaisamand WLS, Jamwa Ramgarh WLS, Jawahar Sagar WLS, Kailadevi WLS, Kesarbargh WLS, Khumbalgarh WLS, Mount Abu WLS, Nahargarh WLS, National Chambal WLS, Phulwari Ki Nai WLS, Ramgarh Vishdhari WLS, Ramsagarh WLS, Sajjangarh WLS, Sawai Man Singh WLS, Shergarh WLS, Sitama WLS, Todgarh Raoli WLS, and Van Vihar WLS

⁵ Rambathore National Park, Keoladeo National Park, and Mukundra Hills National Park

Environmental Monitoring Plan (EMOP) and clear institutional arrangements for implementing them. Specifically, the study will focus on the following:

- a. Potential impacts on biodiversity including modified, natural, critical habitat and protected areas and necessary measures to minimize, mitigate and offset impacts.
- b. Soil erosion and necessary engineering and bioengineering measures to address them
- c. Potential waste issues including excavated spoil, hazardous materials and wastes and appropriate measures for their disposal, treatment and other forms of management.
- d. Climate change impacts to the project and recommendations for adaptation as well as mitigation
- e. Occupational Health Safety issues and measures for the construction workers as well as the local communities in and around the project site.
- f. Cumulative and Induced Impacts of the project in light of existing environment, ongoing development projects and planned projects in the near future
- g. Potential impacts on physical and cultural resources and measures to avoid, minimize or mitigate impacts.
- h. Grievance Redressal Mechanism to address concerns and grievances of the affected people in the course of the project cycle.

19. As part of the detailed engineering design to be conducted by the Contractor, the EMP may need revision and updating to take into account the availability of additional information as deemed necessary by the PMC and the PWD Independent Consultant. New information like the location of borrow and other construction materials; location, number, and extent of labor and camp sites; location and number of tanks and johads where road run-off water can be collected; and additional locations of active Chinkara (*Gazella benetti*), Nilgai (*Boselaphus tragocamelus*) crossing will warrant the updating of the EMP. The Contractor will update the EMP as instructed by the PMC. For succeeding Tranches under EPC and Annuity modalities, the same requirements will be made for the contractor.

V. CONSULTATION, INFORMATION DISCLOSURE AND GRIEVANCE REDRESS MECHANISM

A. Consultation

20. 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 if necessary. 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 IEE report. The findings of the 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

21. Disclosing the environmental documents including the IEE, annual monitoring, and environmental due diligence reports to the public will be the responsibility of the RPWD. RPWD will ensure that these documents are systematically kept as part of the project records, and made available upon request. All environmental documents are subject to ADB's Communication Policy 2011 and ADB SPS 2009. The IEE report will be disclosed to the public through the ADB website before the approval of the respective tranche for ADB financing. For RSHIP, annual monitoring reports need to be disclosed to the public through the ADB and RPWD websites.

C. Grievance Redress Mechanism (GRM)

22. 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.

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

24. During preparation of IEE or at latest during pre-construction stage, the local communities in the project area will be informed by the PMC and PIU on the grievance redress procedure and the contact persons for lodging complaints. Provisions shall also be made for lodging complaints at the respective PWD's website.

VI. INSTITUTIONAL ARRANGEMENT FOR IMPLEMENTING EARF AND RESPONSIBILITIES

25. The Government of Rajasthan (GOR) through RPWD is the Executing Agency (EA) for the project. The PMU in RPWD will be responsible for ensuring that all components of this EARF are complied with. Under the PMU there will be a number of Project Implementation Unit (PIUs) to manage individual road packages or groups of packages under project. The PIU will be headed by a Project Director (PD). The PMU will have a Safeguard Officer-Environment (SOE) with a rank of Executive Engineer to coordinate with the PD-PIUs to ensure project implementation complies with the EARF and EMP.

26. The Project Management Consultants (PMC) will support the PMU to implement the project and supervise the contractor including environment safeguards. The PMC's team will include one Environmental Specialist to supervise and guide the contractor on implementation of the EMP and EMOP and will assign relevant staff on site per package to oversee day to day implementation of the EMP. The contractor's team will include health and safety officers and/or environmental focal persons to ensure implementation of the EMP and EMOP. The

responsibilities of various agencies and parties for implementing environment safeguards are provided below.

27. **PPP Division RPWD.** Is the Project Management Unit (PMU) and responsible for the overall compliance ADB SPS 2009 and the applicable laws and rules under the Ministry of Environment, Forests and Climate Change (MoEF&CC). The PMU will have a Safeguard Officer-Environment (SOE) with a rank of Executive Engineer to coordinate with the PD-PIUs to ensure project implementation complies with the EARF and EMP. The SOE is responsible for:

- Environmental screening and proposed categorization to reflect the significance of potential impacts or risks that a proposed road might present and advise feasibility for inclusion and identify the needed level of assessment.
- Reviewing and approving all environment safeguards related documents such as IEE, monitoring reports, and due diligence prepared under the Facility with recommendations and clarifications from the PIUs and PMC where necessary.
- Timely endorsement and signing of key documents and forwarding to the respective agency required for processing of forestry clearance, tree cutting permit, permission for groundwater extraction, etc. and disclosure on ADB and PWD websites.
- Ensure all contractors obtain permits, licenses etc. for activities such as operation of asphalt plants, quarries, borrow areas etc. before the implementation of the respective construction activity.
- 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 and significant grievances (during construction stage)

28. **PWD PIUs.** The PIUs through the PD will be responsible for supervising implementation of the EMP and EMOP by the contractor through the following:

- Review all sub-plans identified in the EMP to be prepared by the Contractor to include camp layout, waste/debris management plan, borrow area management plan, traffic management plan with guidance from the PMC
- Review monthly environmental monitoring reports prepared by the Contractor-Environmental Focal Person (EFP)
- Conduct monthly site and follow-up inspection to ensure the veracity of the submitted monitoring reports and enforce the EMP and EMoP
- Conduct compliance conference with the Contractor to discuss non-compliance and agree on corrective measures with guidance from the PMC
- Recommend sanctions to the PMU-SOE in case of recalcitrant contractors

29. **Project Management Consultant (PMC).** The main objective of Project Management Consultant is to support the PMU implement the environmental requirements of the Project by providing assistance in the monitoring of the EMP implementation. The PMC's team will include one Environmental Specialist to supervise and guide the contractor on implementation of the EMP and EMOP and will assign relevant staff on site per package to oversee day to day implementation of the EMP. Key responsibilities of the PMC will be:

- Review, monitor, and advise the Contractor on needed revisions on the EMP and EMoP as part of the engineering design

- Conduct environmental site induction training⁶ to all contractors and PIUs to ensure understanding of the EMP and domestic environmental laws and regulations requirements particularly on the required clearances and permits, training on occupational and community health and safety, timely mobilization of the Contractor's EFP, and review of sub-plans required in the EMP and advise the PIU on adequacy
- Conduct on the job training to the contractors as needed during project construction
- Conduct at least monthly site inspections (PMC, Environmental Specialist)
- Ensure contractors secure necessary permits and clearances
- Prepare environmental due diligence reports on EMP implementation needed for the processing of subsequent tranches
- Prepare environmental monitoring report template for contractor's self-monitoring reports
- Design quarterly and semi-annual compliance assessment checklist and report formats for PMU and ADB review
- Prepare annual environmental monitoring reports required by the ADB for public disclosure
- Preparing summary monthly, quarterly, and semi-annual monitoring reports based on the monthly environmental self-monitoring reports prepared by the Contractor's EFP and reports for the review and guidance of the PMU and PIUs
- Advise the Contractor through the PMU and PIUs on how to comply with requirements address non-compliances
- Report apparent unanticipated impacts, recommend mitigation measures to be implemented by the PMU and update the IEE report

30. **Independent Consultant-Environment.** The RPWD will mobilize on a limited basis an environmental specialist that was involved in the preparation of environmental safeguards documents in Tranche 1 to ensure lessons are carried to the succeeding tranches by providing initial guidance to the PMC on the preparation of the IEE and review of revised EMP and EMoP prepared by the Contractor as part of the detailed design.

31. **Contractor.** The Contractor is the principal agent to implement the EMP and EMoP during the pre- and during construction stage. Specifically, the contractor will:

- Appoint the Contractor's environment focal person (EFP) and attend the site induction workshop to be organized by the PMC
- Obtain necessary environmental license(s), permits etc. from relevant agencies as specified by EARF (Table 3) for associated facilities for project road works, quarries, hot-mix plant etc. prior to commencement of civil works contracts
- Revised the EMP and EMoP, as advised by the PMC and PWD independent consultant, as part of detailed engineering design
- Implement all mitigation measures in the EMP and activities in the EMoP

⁶ Site induction training includes but not limited to: i) discussion and review of EMP and EMoP detailing how specific environmental risks associated with their Scope of Work will be managed legal compliance, inspection and audits, and progress tracking and reporting; ii) environmental training and awareness needs shall be determined and documented via a training needs analysis prior to commencement; iii) Health and Safety Awareness Course, which details general environmental awareness and specific performance requirements expected on site; and iv) GRM.

- Submit monthly, quarterly, and annual self-monitoring reports to the PIU and PMU with guidance from the PMC
- Ensure that all workers, site agents, including site supervisors and management participate in training sessions delivered by PIU.
- Ensure compliance with environmental statutory requirements and contractual obligations
- Collect the baseline data on environmental quality before the start of physical works and continue collection of environmental quality data as given in the Environmental Monitoring Plan during construction and operation
- Participate in resolving issues as a member of the GRC
- Respond promptly to grievances raised by the local community or any stakeholder and implement environmental corrective actions or additional environmental mitigation measures as necessary.
- Based on the results of EMP monitoring, cooperate with the PIU to implement environmental corrective actions and corrective action plans, as necessary.

32. **ADB.** ADB is responsible for the following:

- Review REA checklist and endorse or modify the tranche classification proposed by the PMU
- Review IEE report and disclose the final reports on the ADB website as required;
- Issue tranche/subproject's approval based IEE report;
- Monitor implementation of the EMP through due diligence missions;
- Provide assistance to the RPWD, if required, in carrying out its responsibilities and for building capacity for safeguard compliance;
- Monitor overall compliance of the subprojects to this EARF; and
- If necessary provide further guidance to the RPWD on the format, content, and scope of the IEE report and annual monitoring reports for submission to ADB.

33. The main budgetary need for implementing this EARF is costs for screening and categorization and preparation of IEE reports including EMP and EMOP for subprojects under subsequent tranches. As done for tranche 1, the RPWD will use their own budgetary resources to recruit Detailed Project Report (DPR) consultants to prepare the subproject specific IEE reports and EMPs. ADB's resources under TA 8569-REG⁷ or staff consultant budget will be used to provide additional support to RPWD for finalizing the IEE and EMP to meet the requirements of ADB's SPS if required.

⁷ TA 8569-REG: Improving Safeguard Policy Applications in South Asia Countries

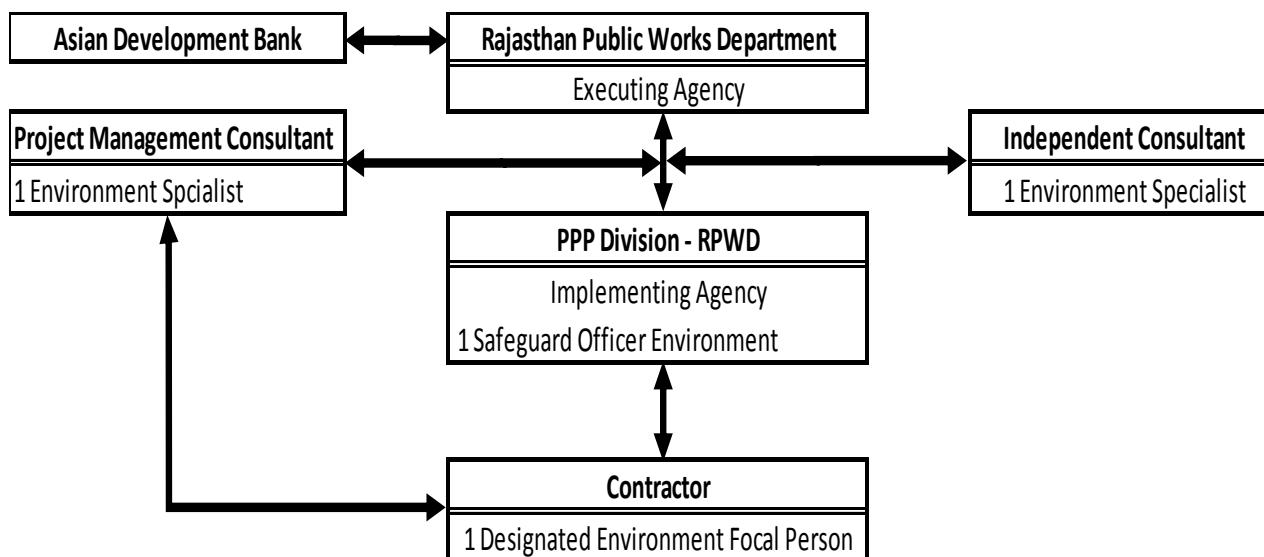


Figure 1. Institutional Arrangement to Implement Environmental Management Plan

VII. MONITORING AND REPORTING

34. The RPWD is responsible 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.

35. The monitoring reports will document progress made in EMP implementation, with particular attention to compliance with each component of EMP. The RPWD through their PMU, PIUs, and PMC will submit annual monitoring reports to ADB.

36. Monitoring during construction is primarily the responsibility of the contractor through self-reporting on a monthly basis and relates to the status of EMP and EMoP implementation including complaints received. The PMC and PIU are responsible for monitoring the compliance with construction contracts, effectiveness of mitigation measures, complaints, and overall environmental quality from the results of the third-party ambient environmental monitoring hired by the contractor. Ambient monitoring will follow the approach to selecting quantitative standards, as recommended in the ADB's SPS 2009.

37. Monitoring during operation will be conducted by the concessionaire to cover EMP implementation and its effectiveness.