

GOVERNMENT OF INDIA
PRADHAN MANTRI GRAM SADAK YOJANA

Rural Roads Project II
(Funded by The World Bank)

Environment and Social Management Framework
(Final)

April 2018
(Revised/Updated Version for Additional Financing)

National Rural Roads Development Agency
Ministry of Rural Development, Government of India

Abbreviations

AAV	Aggregate Abrasion Value
BoQ	Bill of Quantities
CD Structures	Cross Drainage Structures
CPCB	Central Pollution Control Board
CPR	Common Property Resource
DPR	Detailed Project Report
ECoPs	Environmental Codes of Practice
GP	Gram Panchayat
GS	Gram Sabha
GSB	Granular Sub- Grade
HFL	High Flood Level
HMP	Hot Mix Plant
IRC	Indian Roads Congress
IS	Indian Standards
MGNREGA	Mahatma Gandhi National Rural Employment Guarantee Act
MoEF	Ministry of Environment and Forest
MoRD	The Ministry of Rural Development
MoRT&H	Ministry of Road Transport and Highways
MoU	Memorandum of Understanding
NOC	No-Objection Certificate
NQM	National Quality Monitor
NRRDA	National Rural Roads Development Agency
O & M	Operation and Maintenance
ODR	Other District Roads
OM	Operations Manual
OP	Operational Policy
PCR	Physical Cultural Resources
PIU	Project/Program Implementation Unit
PMGSY	Pradhan Mantri Gram Sadak Yojana
POL	Petrol, Oil and Lubricants
PRIs	Panchayat Raj Institutions
PSV	Polished Stone Value
PUC	Pollution Under Control
PWD	Public Works Department
RoW	Right of Way

RRP	Rural Roads Project
R&R	Resettlement and Rehabilitation
S W Plains	South West Plains
SP	Special Publications
SPCB	State Pollution Control Board
WBM	Water Bound Macadam
WMM	Wet Mix Macadam

1.0 Introduction

1.1 Project Context

The Ministry of Rural Development (MORD) launched the “Pradhan Mantri Gram Sadak Yojana (PMGSY)” – Prime Minister’s Rural Roads Program in year 2000 to connect with all-weather roads all habitations with population more than 1000 in the first instance and 500 (250 in hilly, deserts, and tribal regions) thereafter. The program was primarily funded by the Government of India through the Central Road Fund (CRF)¹, and borrowing from multi-lateral agencies. The PMGSY also covers upgrading of existing roads serving to the targeted habitations once the connectivity is achieved for the targeted habitations. The PMGSY

PMGSY Targets ...	PMGSY Accomplishments (as on March 1, 2018)
<ul style="list-style-type: none">• Achieving all-weather road access to every village/habitation with a population greater than 1000 in the first instance; and• Providing all-weather road access to all villages/habitations of greater than 500 people (250 in case of hill states and the desert areas) thereafter.	<ul style="list-style-type: none">• 165,411 works approved<ul style="list-style-type: none">○ 116,953 new connectivity works○ 48,458 upgrading works• 138,656 works completed• 541,776 km of road length constructed under the program

targeted new connectivity to about 1,78,000 habitations involving construction of about 3,75,000 km of roads apart from upgrading of about 3,72,000 km of existing rural roads (in poor condition) when it was launched. This involved a sanction of about INR 2462 billion (US\$ 37 billion).

The World Bank through its Country Assistance Strategy committed to a series of loans/credits to support PMGSY. Starting from the Rural Roads Project I (RRP I), which was approved in 2004 (now closed) covered four states, namely Rajasthan, Himachal Pradesh, Uttar Pradesh and Jharkhand. In PMGSY - RRP II, the second operation to be supported by the Bank, three new states (Punjab, Uttarakhand and Meghalaya) were added at project preparation stage and another state, Bihar was included in the project during the implementation stage. Apart from these eight states, the additional Financing Project will include another state (ninth) from north-eastern part of India – Tripura.

The Indian Roads Congress (IRC) publication, IRC: SP: 20-2002, Rural Roads Manual, provides guidance on various aspects of rural road development, with the specific requirements of

¹ 50% of INR 2 per liter cess on sale of high speed diesel has been earmarked for rural roads under the Central Road Fund

PMGSY. Further to this an Operations Manual (OM) has been prepared to bring about clarity on various aspects of PMGSY and thereby ensure its timely and successful implementation.

1.2 Additional Financing of PMGSY - RRP II

Both the Project Development Objective (PDO) and overall project design will remain the same as that of the original project. However, the PDO indicators have been revised as follows:

- (a) Number of habitations benefited with all-weather roads (number)
- (b) Improved condition of core rural road network (percentage)
- (c) Improved effectiveness of public expenditure – km of roads designed using climate resilient and environmentally optimized road designs/cost-effective technology (km)
- (d) Improved asset management – length of roads under planned maintenance contracting (km)

The Additional Financing project further entails the following changes: (i) increase in the Bank funding for civil works by US\$485 million and for institutional development by US\$15 million; (ii) percentage of Bank financing for civil works to be 50 percent instead of 100 percent; (iii) addition of Tripura in the list of participating states under the Project; (iv) use of new procurement framework effective from July 1, 2016 and; (vi) changes in the result framework and Disbursement Link Indicators (DLIs).

1.3 Environment and Social Management Framework (ESMF)

Towards enhancing the assessment and management of environmental and social issues in PMGSY planning and implementation, an Environmental and Social Management Framework (ESMF) had been prepared for RRP I and is being currently applied and implemented in the on-going World Bank funded PMGSY - RRP II.

The ESMF comprises of the following safeguard instruments:

- (i) Environmental and Social Management Framework (ESMF) (this document)
- (ii) Environmental Codes of Practice (ECoPs) and
- (iii) Social Management (Resettlement and Participation) Framework and contains supporting Annexures.
- (iv) Vulnerability Framework.

These documents together are referred as ESMF in the report.

1.4 Customization of ESMF for PMGSY - RRP II - Additional Financing

In order to prepare a document that provides for a comprehensive management framework to avoid, minimize and mitigate environmental and social issues in the process of planning/designing, constructing and operating rural roads, a three-tier approach comprising the following has been adopted:

- ⊙ Review of environmental profile of the project states
- ⊙ Consultations with key stakeholders
- ⊙ Use of field/practical experience gained from implementation of RRP I and PMGSY – RRP II

Based on the consultations and reviews, a consensus on the following key aspects was arrived:

- ⊙ The Environmental and Social Management Framework used for PMGSY – RRP II is largely relevant for Additional Financing project. The framework can be adopted for with a few modifications, primarily guided by the experience gained through implementation of RRP I and PMGSY – RRP II.
- ⊙ Updating the regulatory framework section to reflect changes in policy, rules and regulations made since 2010.
- ⊙ Updating of ECoPs for strengthening practices related to slope stability and resource efficiency (pilots on new techniques/materials etc.) that were promulgated/ encouraged under PMGSY – RRP II.
- ⊙ Continue to strengthen the environmental management capacity both at national and state level.

The provisions under the framework have been drafted in accordance with the applicable statutory provisions of Government of India and for compliance with the World Bank Policies.

2.0 Legislations and Policies Applicable

2.1 Legal provisions related to Environment, Health and Safety

The Legislations of Government of India (GoI) applicable for PMGSY regarding environmental aspects and applicable safeguard policies for PMGSY – Additional Financing are summarized in the following sections.

1. ***Environment (Protection) Act, 1986, and as amended***

The Act provides for the protection and improvement of environment and for matters connected therewith, and the prevention of hazards to human beings, other living creatures, plants and property. 'Environment' includes water, air and land and the inter-relationship which exists among and between water, air and land, and human beings, other living creatures, plants, micro-organisms and property. The Act is an "umbrella" legislation designed to provide a framework for central government coordination of the activities of various authorities (including at the central and state level) established under laws, such as the Water Act and the Air Act.

In September 2006, a notification was issued by MoEF amending EIA Notification, 1994 that lists projects requiring Environmental Clearance and process of securing the clearance. Rural Roads are not included in this notification. However, roads traversing ecologically sensitive areas such as National Parks, Sanctuaries, Tiger Reserve, and Reserve Forests etc. would require Environmental and/or wildlife and/or forest clearance, as may be applicable.

Applicability: As a rule, all sub-projects are exempted from environmental clearance except the roads passing through ecologically sensitive areas.

2. ***The Environment (Protection) Rules, 1986 and as amended***

The Central Government made the rules to implement provisions of the Environment Protection Act and deal with related matters.

3. ***The Forest (Conservation) Act, 1980 and as amended***

The Forest (Conservation) Act 1980, (as amended 1998) pertains to the cases of diversion of forest area and felling of roadside plantation that is deemed to be protected.

Applicability: Restrictions and clearance procedure proposed in the Forest (Conservation) Act applies wholly to the sub-projects requiring diversion of forest areas, even in case the protected/designated forest area does not have any vegetation cover.

4. *The Wildlife (Protection) Act, 1972*

The Wildlife (Protection) Act Provides for the protection of wild animals, birds and plants and for matters connected therewith.

Applicability: Restrictions/protection measures and clearance procedures proposed in the Wildlife (Protection) Act applies to the sub-projects passing through identified/notified wildlife protection areas, including national parks and sanctuaries.

5. *State Tree Preservation Act and/or Tree Cutting Rules, as may be in force*

These provide for protection of trees of important species. The Contractor will be required to obtain prior permission for full or partial cutting, uprooting, or pruning of any such trees.

6. *Water (Prevention and Control of Pollution) Act, 1974, and as amended*

The Water (Prevention and Control of Pollution) Act 1974 is enacted to prevent pollution of water sources through the industrial or any other construction activity and for maintaining or restoring of wholesomeness of water.

The Act prohibits discharge of pollutants into water bodies beyond a given standard and lays down penalties for non-compliance with its provisions. 'Pollution' means such contamination of water or such alteration of the physical, chemical or biological properties of water or such discharge of any sewage or trade effluent or of any other liquid, gaseous or solid substance into water (whether directly or indirectly) as may, or is likely to, create a nuisance or render such water harmful or injurious to public health or safety, or to domestic, commercial, industrial, agricultural or other legitimate uses, or to the life and health of animals or plants or of aquatic organisms.

Applicability: Project includes setting up of worker's camp and other construction equipment. The Contractor needs to take consent for setting up and also consent for operation of the equipment/worker's camp.

7. *The Water (Prevention and Control of Pollution) Rules, 1975*

8. *The Water (Prevention and Control of Pollution) Cess Act, 1977*

The Act provides for the levy and collection of a cess on water consumed by persons carrying on certain industries and by local authorities, with a view to augment the resources of the Central Board and the State Board for the prevention and control of water pollution under the Water (Prevention and Control of Pollution) Act, 1974.

9. *The Water (Prevention and Control of Pollution) Cess Rules, 1978*

For exercising the legislative provisions of the Water Cess Act, the Government of India made the Cess Rules in 1978.

10. Easement Act, 1882

This provides for the rights of landowners on groundwater. Contractors will need to ensure that other landowners' rights under the Act is not affected by any groundwater abstraction by the contractors.

11. State Groundwater Act and Rules, as may be in force and the Guidelines for Groundwater Abstraction, 2012

State Groundwater Act and Rules as may be in force and the Guidelines for Groundwater Abstraction for drinking and domestic purposes in Notified Areas and Industry/ Infrastructure project proposals in Non-Notified areas, 2012 - These provide for regulating extraction of ground water for construction/industrial and drinking and domestic purposes. Contractors will need to obtain permission from Central/State Groundwater Boards prior to groundwater abstraction through digging any bore well or through any other means; and will to ensure full compliance to these rules and any conditions imposed in the permit.

12. Air (Prevention and Control of Pollution) Act, 1981, and as amended

This provides for prevention, control and abatement of air pollution. 'Air Pollution' means the presence in the atmosphere of any 'air pollutant', which means any solid, liquid or gaseous substance (including noise) present in the atmosphere in such concentration as may be or tend to be injurious to human beings or other living creatures or plants or property or environment. The emission and air pollutants standards are prescribed under this Act.

Applicability: Project includes setting up of hot-mix plants, aggregate crushing plants and use of other construction vehicles and equipment. The Contractor needs to take consent for setting up HMP, crusher and other plants as required under the law. The vehicles and equipment must confirm to prescribed emission standards.

13. The Air (Prevention and Control of Pollution) Rules, 1982

14. Noise Pollution (Regulation and Control) Rules, 2000, and as amended

The Noise Pollution (Regulation and Control) rules are promulgated under Environmental (protection) Act, 1986. The noise pollution rules lay down such terms and conditions as are necessary to reduce noise pollution, including during night hours.

Applicability: This will be applicable for all construction equipment/plant and machinery including vehicles deployed for implementation of works under this contract for regulation of ambient noise levels. The referred rules will be applicable for meeting noise pollution standards during construction activities at different type of land uses.

15. *The Building and Other Construction Workers (Regulation of Employment and Conditions of Service) Act, 1996*

The Act provides for regulating the employment and conditions of service of building and other construction workers and also provides for their safety, health and welfare measures and other matters connected therewith or incidental thereto. It applies to every establishment which employs, or had employed on any day of the preceding twelve months, ten or more building workers in any building or other construction work. Apart from labour welfare and basic facility provision such as canteens, first-aid facilities, ambulance, housing accommodation for workers near the workplace etc., the act requires employers to make adequate provisions for safety and health measures for construction workers, including appointment of safety committees, safety officers and compulsory notification of accidents.

16. *Public Liability Insurance Act, 1991, and as amended*

The Act provides for public liability insurance for the purpose of providing immediate relief to the persons affected by accident occurring while handling hazardous substances and for matters connected herewith or incidental thereto. Hazardous substance means any substance or preparation which is defined as hazardous under the Environment (Protection) Act 1986, and exceeding such quantity as may be specified by notification by the Central Government.

17. *The Public Liability Insurance Rules, 1991*

The Public Liability Insurance Rules were drawn up to provide for public liability insurance for the purpose of providing immediate relief to the persons affected by accident while handling any hazardous substance.

18. *Workmen Compensation Act, 1923*

The Act provides for compensation in case of injury by accident arising out of and during the course of employment.

19. *The Ancient Monuments, Archaeological Sites and Remains Act, 1958*

The ancient monuments and archaeological sites should be protected from any developmental activity. The area within the radial of 100 m and 300m from the Protected Property are designated as protected area and controlled area respectively. No development activity (including building, mining, excavating, blasting etc,) is permitted in the 'protected area' and activities likely to damage the property are not permitted in the 'controlled area' without prior permission of the Archaeological Survey of India. The act also has provisions for dealing with 'chance finds'.

Applicability: The provisions of the Act need to be considered during sub-project planning and designing to ensure that any ancient monuments and archeological sites

of importance are not affected due to the proposed project road. In addition, all the construction related activities shall necessarily avoid such sites.

20. *Construction and Demolition Waste Management Rules, 2016*

These rules shall be applicable to wastes resulting from excavation, construction and demolition operations and will include excavated pavement materials, cement concrete roads, other construction debris and rubble from demolition/remodeling/repair of buildings/civil structures etc.

21. *Plastic Waste Management Rules, 2016*

This provides for control and management of the plastic waste generated from any activity.

22. *Solid Waste Management Rules, 2016*

The rules are applicable to all forms/types of solid waste generated at operational areas, including construction camp sites.

23. *The Batteries (Management and Handling) Rules, 2001*

The rules were enacted with the primary objective of ensuring safe disposal of discarded lead acid batteries. Rules require proper control and record keeping on the sale or import of lead acid batteries and recollection of the used batteries by registered recyclers to ensure environmentally sound recycling of used batteries.

24. *Hazardous and Other Wastes (Management and Handling) Rules, 2016*

The Act requires the entity generating hazardous wastes (in quantities equal to or exceeding the limits given in the Act), to take all practical steps to ensure that such wastes are properly handled without any adverse effects, which may result from such wastes. It stipulates proper collection, reception, treatment, storage and disposal of such wastes and provides for the process/mechanism to do so. Contractors will need to obtain permission from the State Pollution Control Boards and other designated authorities for storage and handling of any hazardous material.(Rule 4 - Such entity shall apply for authorization in prescribed format to the State Pollution Control Board).

25. *The Petroleum Rules, 2002*

This provides for safe use and storage of petroleum products.

26. *The Gas Cylinder Rules, 2004 and as amended*

This provides for regulations related to storage of gas, and possession of gas cylinder more than the exempted quantity.

27. *Manufacture, Storage and Import of Hazardous Chemical Rules, 1989 and as amended*

These provide for use and storage of hazardous material such as highly inflammable liquids like HSD/LPG. Contractors will need to ensure compliance to the Rules; and in the event where the storage quantity exceeds the regulated threshold limit, the contractors will be responsible for regular safety audits and other reporting requirements as prescribed in the Rules.

28. *The Explosives Act 1884 and the Explosives Rules, 2008*

These provide for safe manufacture, possession, sale, use, transportation and import of explosive materials such as diesel, oil, lubricants etc. and also for regulating the use of any explosives in blasting and/or demolition.

29. *The Mines Act, 1952 and as amended; the Minor Mineral and Concession Rules, as amended and; the State Mineral (Rights and Taxation) Acts as may be in force*

These provide for safe and sound mining activity. The contractors will procure aggregates and other building materials from quarries and borrow areas approved under such Acts. In the event the contractors open any new quarry and/or borrow areas, appropriate prior permission from the concerned authority will need to be obtained. Contractors will also need to ensure full compliance to these rules and any conditions imposed in the permit.

30. *Motor Vehicle Act, 1988 and amendments thereof, including 2016 (and State Motor Vehicle Acts as may be in force)*

The Motor Vehicles Act, 1988 regulates all aspects of road transport vehicles. It provides in detail the legislative provisions regarding licensing of drivers/conductors, registration of motor vehicles, control of motor vehicles through permits, traffic regulation, insurance, liability, offences and penalties, etc. This act will be applicable for all construction equipment/plant and machinery including vehicles deployed during implementation.

31. *Motor Vehicle Rules, 1989 (and State Motor Vehicle Rules as may be in force)*

For exercising the legislative provisions of the Motor Vehicles Act, the Government of India made the Central Motor Vehicles Rules, 1989.

2.2 Legal provisions – Social

1. *Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013*

The Act that safeguards and mitigate the adverse impacts on the affected persons caused due to land acquisition for the civil works under a project. It is aimed to regulate land acquisition process and to lay down the process and procedures for granting compensation for the land losers and rehabilitation and resettlement for the project

affected people. The Ministry of Rural Development is the nodal agency for the Act that replaces the Land Acquisition Act, 1894 and applies to all projects across the States, except Jammu and Kashmir, where the appropriate government acquires land for its use, hold and control for the public purpose. The Act provides for enhanced compensation and assistances measures and adopts a more consultative and participatory approach in dealing with the Project Affected Persons.

Applicability: The act is relevant particularly as one of the nine states i.e. state of Punjab will be using the above act to source land for the various sub-project roads.

2. The Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006.

The Act has been framed to recognize and vest the forest rights and occupation in forest land in forest dwelling STs and other traditional forest dwellers who have residing in such forests for generations but whose rights could not be recorded. The Act intends to provide for a framework for recording the forest rights so vested and the nature of evidence required for such recognition and vesting in respect of forest land. The main objective is to facilitate the overall development and welfare of the tribal people by empowering them socially, economically and politically without any impact on their culture, habitation and tradition and in terms of their age old rights and privileges.

The Act provides three kinds of rights to Scheduled Tribes and Other Traditional Forest Dwellers: (i) Land Rights; (ii) Right to continue cultivating land (less than or equal to four hectares) where they have been cultivating prior to 13 December 2005; and (iii) Usufruct Rights: Provides for rights to use and/or collect a) minor forest produce (*Tendu patta*, herbs, medicinal plants) that has been traditionally collected, b) Grazing grounds and water bodies, c) Traditional areas of use by nomadic or pastoralist communities.

Applicability: The Act is relevant particularly as some of the states such as Jharkhand, Himachal Pradesh, Tripura, Uttarakhand will involve sub-projects in tribal inhabited areas.

3. The Bihar Raiyati Land Lease Policy, 2014

The Bihar Raiyati Land Lease Policy was framed in November 2014 in exercise of the powers conferred under section 104 of the 2013 Act. The policy was initiated to provide for faster transfer of private land to the Government departments, Government companies and Public Sector Undertakings (PSUs). The policy is applicable only for public purposes and for only public projects. The Policy provides for taking of land on lease for construction of infrastructure such as academic institutions, road, electricity projects, approach road, stadium, embankment, canal, land bank,

rehabilitation of persons affected by natural disaster and for other works of public purposes as defined under Section 2 (1) of the Act.

Applicability: Bihar, besides using the previously used land donation method might exercise the option of leasing lands to construct sub-project roads.

4. Applicable Labour Laws

- **Payment of Wages Act, 1936:** It lays down as to by what date the wages are to be paid, when it will be paid and what deductions can be made from the wages of the workers.
- **Minimum Wages Act, 1948:** The employer is to pay not less than the Minimum Wages fixed by appropriate Government as per provisions of the Act if the employment is a scheduled employment. Construction of buildings, roads, runways are scheduled employment.
- **Equal Remuneration Act, 1979:** The Act provides for payment of equal wages for work of equal nature to male and female workers and for not making discrimination against female employees in the matters of transfers, training and promotions etc.
- **Contract Labour (Regulation & Abolition) Act, 1970:** The Act provides for certain welfare measures to be provided by the contractor to contract labour and in case the contractor fails to provide, the same are required to be provided, by the principal employer by law. The principal Employer is required to take Certificate of Registration and the contractor is required to take license from the designated Officer. The Act is applicable to the establishments or contractor of principal employer if they employ prescribed minimum (say 20) or more contract labour.
- **Payment of Gratuity Act, 1972:** Gratuity is payable to an employee under the Act on satisfaction of certain conditions on separation if an employee has completed the prescribed minimum years (say, five years) of service or more or on death the rate of prescribed minimum days (say, 15 days) wages for every completed year of service. The Act is applicable to all establishments employing the prescribed minimum number (say, 10) or more employees.
- **Employees P.F. and Miscellaneous Provision Act, 1952:** The Act provides for monthly contributions by the employer plus workers at the rate prescribed (say, 10% or 8.33%). The benefits payable under the Act are:
 - Pension or family pension on retirement or death, as the case may be.
 - Deposit linked insurance on the death in harness of the worker.
 - Payment of P.F. accumulation on retirement/death etc.
- **Payment of Bonus Act, 1965:** The Act is applicable to all establishments employing prescribed minimum (say, 20) or more workmen. The Act provides for payments of

annual bonus within the prescribed range of percentage of wages to employees drawing up to the prescribed amount of wages, calculated in the prescribed manner. The Act does not apply to certain establishments. The newly set-up establishments are exempted for five years in certain circumstances. States may have different number of employment size.

- **Maternity Benefit Act, 1961:** The Act provides for leave and some other benefits to women employees in case of confinement or miscarriage etc.
- **Child Labour (Prohibition & Regulation) Act, 1986:** The Act prohibits employment of children below 14 years of age in certain occupations and processes and provides for regulations of employment of children in all other occupations and processes. Employment of child labour is prohibited in building and construction industry.
- **Inter-State Migrant Workmen's (Regulation of Employment & Conditions of Service) Act, 1979:** The Act is applicable to an establishment which employs prescribed minimum (say, five) or more inter-state migrant workmen through an intermediary (who has recruited workmen in one state for employment in the establishment situated in another state). The Inter-State migrant workmen, in an establishment to which this Act becomes applicable, are required to be provided certain facilities such as Housing, Medical-Aid, Travelling expenses from home up to the establishment and back etc.

Applicability: Though small-scale activities, civil work contractors would be required to execute multiple sub-projects involving mostly local labour drawn from neighboring villages. The project will ensure that bid document for civil works include commensurate provisions to ensure compliance with existing labour laws.

2.3 Information Disclosure

Right to Information (RTI) Act, 2005

This Act relates to public access to information under the control of public authorities. The Act has provisions for access to information held by or under the control of any public authority and includes: (i) the right to: Inspection of work, documents, records; (ii) taking notes, extracts or certified copies of documents or records; (iii) taking certified samples of material'; (iv) obtaining information in the form of diskettes, floppies, tapes, video cassettes or in any other electronic mode or through printouts where such information is stored in a computer or in any other device.

Applicability: It facilitates and empowers people/stakeholders to obtain information on the project. PMGSY provides for dissemination of information and procedures, entitlements, project costs, selection criteria for contractor etc. In addition, the state and central agencies involved in implementing PMGSY – RRP II and its Additional Financing shall be open to provide information on public demand.

2.4 Applicable World Bank Safeguard Policies

The World Bank’s safeguard policies applicable to the project, are detailed below.

Table 2-1: Applicable World Bank Environmental and Social Safeguard Policies

S. No.	World Bank Policy	Applicability due to	How Project Addresses Policy Requirements?
1.	Environmental Assessment, OP 4.01	Project is likely to have impacts on environmental components such as on water bodies, existing slopes in case of hilly areas and trees along the road.	Preparation and application of Environmental Codes of Practice for addressing environmental issues.
2.	Natural Habitats, OP 4.04	Some sub-projects (about 1 percent) are likely to be in/close to sensitive natural habitats	Avoidance measures, including non-inclusion of such sub-projects in the project.
3.	Forests, OP 4.36	Some sub-projects are likely to be in/close to forest areas and may need forest land diversion, particularly in the hill states.	Avoidance/minimization of construction and allied activities in forest areas; Due regulatory permissions/clearances to be in place prior to initiation of works
4.	Physical Cultural Resources, OP4.11	The project entail risk/damage to cultural properties and has likelihood of chance-finds.	Provisions for relocation of cultural properties and protection of the same through design modifications and other such measures.
5.	Indigenous Peoples, OP 4.10	Presence of project roads in tribal and scheduled areas in the participating states. States like Himachal Pradesh, Jharkhand, Meghalaya and Tripura have a larger share of tribal population.	This policy applies for both positive and negative impacts on tribal population wherever project activities are undertaken in such areas. At the planning stage, roads connecting tribal habitations will be selected, besides which special focus on ST participation shall

S. No.	World Bank Policy	Applicability due to	How Project Addresses Policy Requirements?
			ensure their participation in activities such as transect walks and community consultations. Provision of roads side infrastructure amenities such as handpumps are identified wherever necessary and are included in BOQ
6.	Involuntary Resettlement, OP 4.12	All project states are practicing land sourcing through land donation except Punjab (through land acquisition) and Uttarakhand (through direct purchase). The sub-project roads to be financed under this project state might entail land take at a small scale.	National Rural Roads Development Agencies and respective State Rural Roads Development Agencies will ensure that provisions of SMF in this regard would be followed.
Other Applicable Guidelines			
7.	Guidance note on managing the risks of adverse impacts on communities from temporary project induced Labour Influx, 2016	Experiences from implementation PMGSY shows that small civil works under the project are unlikely to attract contractors and migrant labour force from outside the state. However, this is a likelihood of such an occurrence in districts having borders with another state.	In the unlikely event there are instances of labour influx, the bid documents will incorporate requirements for Environment, Social, Health and Safety (ESHS), including the list of applicable labour laws and metrics for periodic reporting by contractors. Specific measures include ESHS related performance security, ESHS strategy and implementation plan, code of conduct and declaration of past ESHS performance. The reporting requirements and the built-in grievance redressal mechanism will

S. No.	World Bank Policy	Applicability due to	How Project Addresses Policy Requirements?
			also enable PIUs to monitor performance of ESHS more rigorously and address issues before and after they arise.

Apart from compliance to the above policies, the project will comply with the World Bank Policy on Access to Information and Disclosure. Disclosure shall be carried out at all stages of the project as at planning stage, prioritization stage, project preparation stage and implementation stages.

The information pertaining to core network shall be displayed at the project planning stage and project information brochure shall be distributed at the project preparation stage. Consultations shall be conducted with the community and the PRI at project preparation and implementation stages.

3.0 Environmental Issues and Management Measures

Options to address the various environmental issues identified have been worked out based on review of good practices and compliance to the legal provisions. The identification and assessment of issues carried out under RRP I and PMGSY – RRP II has been used as a basis for framing/modifying management measures. Inputs from the key stakeholders, including the executing agencies and the line agencies were also used for the said purpose.

3.1 Screening

A screening and review process for identification of sensitive sub-projects with respect to environmental issues has been worked out. The screening exercise shall be carried out by the PIUs prior to initiation of the DPR activities. The screening exercise shall be useful to identify the environmental issues, and thereby integrate them into the project preparation, and is not necessarily to be used as an exclusion criterion. The designated safeguards officer within each PIU is responsible for the screening exercise and is guided by the Nodal Environment Officer at SRRDA and/or Project Management Consultant's Environment Expert. The screening criteria include factors/aspects such as:

- Presence of sensitive areas/critical natural habitats/protected areas
- Environmental features as marshy areas, sand dunes etc.
- Diversion of forest land
- Vulnerability to natural hazards such as landslides/slips/flooding etc.
- Felling of trees outside the protected areas
- Presence of perennial streams/surface water bodies along/across proposed alignment
- Loss of productive agricultural land
- Cultural/religious properties

The screening shall enable categorization of sub-projects based on their environmental sensitivity as follows:

- (i) Sub-projects, wherein no significant adverse environmental impacts are expected:
 - ⊙ The environmental impacts will be of the type normally associated with standard rural road construction.
 - ⊙ The measures suggested in the ECoPs shall be adequate to address the general environmental issues likely in these sub-projects.
- (ii) Sub-projects, wherein there is a potential for significant adverse environmental impacts:

There is a likelihood of adverse impacts requiring specific interventions such as roads passing through forests, sanctuaries and thereby requiring additional environmental measures. In such cases:

- ⊙ Sub-projects traversing through sensitive natural habitats will be identified and assessed in terms of their impacts. Sub-project/s where adverse impacts are anticipated, will not be included under the project.
- ⊙ If the sub-project assessment in cases located close to sensitive habitats reveals that impacts can be avoided/mitigated, management measures will be included in the DPR following guidance provided under ECoP 19.
- ⊙ In addition to the application of ECoPs, the PIU shall undertake the particular road improvement work in compliance with the statutory/regulatory provisions, as applicable.
- ⊙ Vulnerability to natural hazards, landslides/slips will be assessed and relevant ECoPs will be applied.

3.2 Environmental Codes of Practice (ECoPs)

The ECoPs have been developed to guide the planning, design, construction and maintenance stages of PMGSY in terms of avoidance, minimization and/or mitigation of the adverse environmental impacts that may result from execution of sub-projects. The codes define methods and procedures to be followed by the Executing Agencies, Contractors and other agencies involved in the project states. The over-all scope of the ECoPs is outlined in the box given here.

Scope of Environmental Codes of Practice (ECoPs)

- ⊙ To form a field guide or manual for use by the planners, field engineers and contractors involved in PMGSY works.
- ⊙ Identify project activities that can have potential environmental impacts and to provide appropriate mitigation measures.
- ⊙ Demonstrate road design and construction practices that are cost-effective, resource efficient and address adverse environmental impacts.
- ⊙ Illustrate recommended practices to address the environmental concerns during sub-project planning implementation and operation.
- ⊙ Define role of involvement of the rural communities at different stages of the project and
- ⊙ Achieve PMGSY objectives of rural connectivity through roads planned and constructed in a time bound, cost effective and sustainable manner.

The list of ECoPs prepared and their coverage is presented in Table 3-1. Checklists for reviewing the DPR preparation and for identifying issues to be addressed in pre-construction, construction and post-construction stages have also been provided for in the ECoPs.

Implementation of environmental measures shall be monitored through the environmental audit procedures as laid out in the ECoPs. This includes formats for reporting the addressal of issues in various stages of the project.

Table 3-1: Environmental Codes of Practice and their Coverage

ECoP	Title	Key Issues Addressed
ECoP 1.0	Project Planning and Design	<ul style="list-style-type: none"> ⦿ Incorporation of environmental concerns in project preparation and design to avoid adverse impacts ⦿ Avoidance of roads through sensitive areas such as national parks and sanctuaries. ⦿ Compliance with legal and regulatory requirements ⦿ Devising enhancement measures into project design, as needed in the sub-project context
ECoP 2.0	Site Preparation	<ul style="list-style-type: none"> ⦿ Aspects pertaining to relocation of utilities, common property resources and cultural properties ⦿ Avoidance of impact on roadside vegetation
ECoP 3.0	Construction Camps	<ul style="list-style-type: none"> ⦿ Avoidance of sensitive areas for location of construction camps ⦿ Arrangements for workers and ⦿ Storage of construction equipment and materials
ECoP 4.0	Alternate Materials for Construction	<ul style="list-style-type: none"> ⦿ Minimizing earth and aggregate requirement ⦿ Use of fly ash as per MoEF Notification ⦿ Use of new techniques/technology for resource efficiency (bringing down the environmental footprint of the rural roads program)
ECoP 5.0	Borrow Areas	<ul style="list-style-type: none"> ⦿ Avoidance of agriculture lands ⦿ Redevelopment of borrow areas
ECoP 6.0	Topsoil Salvage, Storage and Replacement	<ul style="list-style-type: none"> ⦿ Topsoil removal from areas temporarily/ permanently used for construction ⦿ Storage of topsoil in stockpiles and protection from erosion ⦿ Reuse/reinstatement of topsoil at areas to be revegetated and in agriculture lands
ECoP 7.0	Quarry Management	<ul style="list-style-type: none"> ⦿ Redevelopment of quarries in the event new quarries are setup for works under the project
ECoP 8.0	Water for	<ul style="list-style-type: none"> ⦿ Extraction of water with consent of community

ECoP	Title	Key Issues Addressed
	Construction	<ul style="list-style-type: none"> ◦ Scheduling construction activities as per water availability, including specific provisions in water scarce areas
ECoP 9.0	Slope Stability and Erosion Control	<ul style="list-style-type: none"> ◦ Slope stability in case of hill roads specifically ◦ Protection of land on hill side from stability loss due to cutting ◦ Protection of lands on valley side from debris due to construction/cutting ◦ Adequacy of drainage for erosion control ◦ Protection of slopes in case of alignment on embankments
ECoP 10.0	Waste Management	<ul style="list-style-type: none"> ◦ Reuse of cut material in hill roads ◦ Safe disposal of wastes
ECoP 11.0	Water Bodies	<ul style="list-style-type: none"> ◦ Avoidance from impacts due to alignment selection ◦ Protection measures during design and construction, including silt influx ◦ Rehabilitation/clean-up of water body/area along the road
ECoP 12.0	Drainage	<ul style="list-style-type: none"> ◦ Conducting of hydrological investigations during project preparation ◦ Provision of longitudinal and cross drainage as per site requirements ◦ Proper location of drainage outfall ◦ Post-construction clean-up and rehabilitation
ECoP 13.0	Construction Plants and Equipment Management	<ul style="list-style-type: none"> ◦ Compliance of construction plants and equipment with emission standards of Central Pollution Control Board ◦ Maintenance of machinery and equipment to avoid pollution
ECoP 14.0	Public and Worker's Health & Safety	<ul style="list-style-type: none"> ◦ Provision of Personal Protective Equipment to workers ◦ Provision of necessities/amenities to workers ◦ Public safety near/along construction sites ◦ Road user's safety during operation of the road
ECoP 15.0	Cultural Properties	<ul style="list-style-type: none"> ◦ Avoidance of impacts due to the project

ECoP	Title	Key Issues Addressed
		<ul style="list-style-type: none"> ◦ Protection of precincts from impacts during construction ◦ Relocation in the event impacts are unavoidable
ECoP 16.0	Tree Plantation	<ul style="list-style-type: none"> ◦ Avoidance of impact on trees ◦ Plantation of trees on roadside
ECoP 17.0	Managing Induced Development	<ul style="list-style-type: none"> ◦ Restricting ribbon development at junctions and bus stops specifically ◦ Earmarking areas for commercial activities and other amenities, as necessary in specific contexts
ECoP 18.0	Environmental Audit	<ul style="list-style-type: none"> ◦ Monitoring of environmental and social parameters during project planning, construction and implementation (checklists to be used for auditing)
ECoP 19.0	Natural Habitats	<ul style="list-style-type: none"> ◦ Identification of natural habitats ◦ Management measures for roads passing through natural habitats
ECoP 19 A	Biodiversity	<ul style="list-style-type: none"> ◦ Provisions to address biodiversity issues, in addition to provisions provided for protecting Natural Habitats under ECoP 19.0
ECoP 20.0	Consultation Framework	<ul style="list-style-type: none"> ◦ Aspects for consultation ◦ Stage wise consultations ◦ Consultation schedule and responsibilities

4. Implementation Arrangements

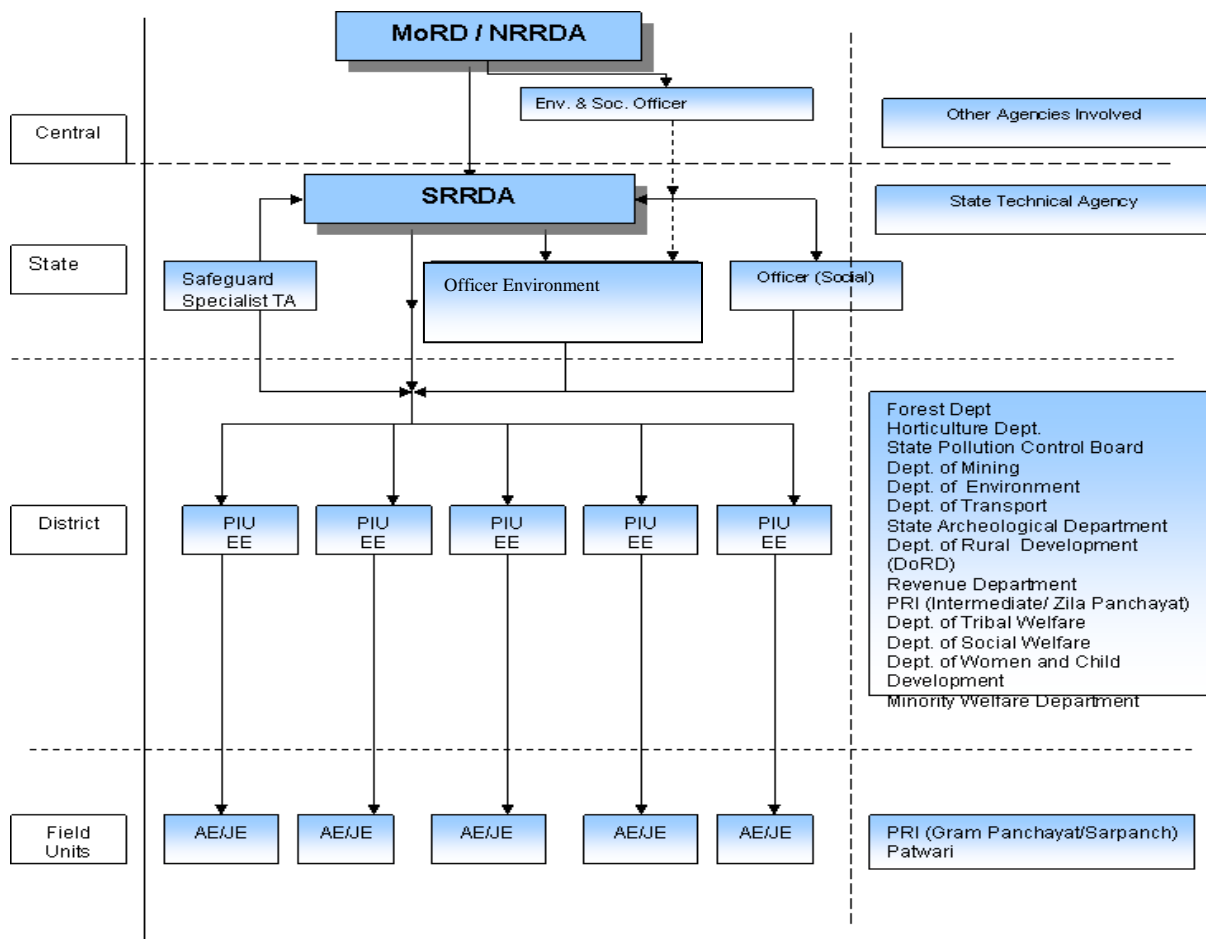
4.1 Institutional Structure

At national level, NRRDA shall have a designated Environment and Social Officer who will provide overall guidance and coordination for effective implementation of EMF/ECOPs and SMF by the participating states.

The State Rural Road Development Agency will be the executing agency for PMGSY at the state level. The PIU, at the districts, will have the responsibility of coordinating and implementing the provisions of the ESMF provisions along with the other project components.

Towards implementation of the ESMF, an Environmental Officer and a Social Development Officer shall be placed in the Executing Agencies in each of the project/participating states. These officers shall assist, advise the Nodal Officer and interact with the PIU in implementation of ESMF provisions.

Figure 4.1



Current PMGSY arrangement of clearance of technical proposals by State Technical Agency (STA) also will include review and clearance responsibility of compliance with EMF/ECOPs provisions. To this effect, the training and capacity building programs under PMGSY – RRP II and its Additional Financing will involve STAs for better understanding of provisions under ESMF.

An independent consultant shall be appointed in each of the project states to regularly monitor the planning, design and construction of rural road works and to confirm that actions taken at each stage of the sub project cycle are following agreed procedures and standards. The overall institutional structure suggested is presented in Figure 4.1.

The PIU through the AE/JE will implement all the tasks at the field level with the assistance and participation of PRIs (Sarpanch and other panchayat/ward members, etc). Each PIU will delegate responsibility to identified field engineer for providing inputs on environmental and social aspects. The designated engineer will also coordinate effective implementation of ECoP provisions. The role and responsibility of each agency/official involved is presented in section 4.1.2.

4.1.2 Roles and Responsibilities

i) Environmental and Social (E&S) Nodal Officer at NRRDA

The roles and responsibilities of the E&S nodal officer will include:

- ⊙ Provide guidance in complying with ESMF provisions by the participating states
- ⊙ Coordinate with STAs to ensure the DPR clearances will also consider ESMF/ECOPs/SMF compliance
- ⊙ Monitor PMGSY roads for fulfillment of ESMF provisions in co-ordination with the SRRDAs
- ⊙ Facilitate conduct of Environmental Audit as per ECoP-18
- ⊙ Facilitate national and state level training and capacity building programs

ii) Environmental and Social Nodal officers at SRRDA

The roles and responsibilities of the Environmental and Social Nodal officers shall include:

- ⊙ Coordination of planning and implementation of environmental and social management aspects of PMGSY in the state;
- ⊙ Obtain clearances from the line departments, especially MoEF and Forest Department, when needed;
- ⊙ Monitor PMGSY roads for fulfillment of ESMF provisions in co-ordination with the independent consultant;
- ⊙ Coordinate with agencies for ensuring implementation of ECoPs;

- ⊙ Mobilize community and ensure their participation in addressing ESMF/ECOPs provisions
- ⊙ Report progress, highlighting environmental and social issues not addressed, to provide for course correction, if needed in certain cases.

iii) Independent Safeguard Specialists/Project Monitoring Consultant at SRRDA level

The Safeguard Specialists (environment and social specialists) shall be responsible for ensuring:

- ⊙ Proper application of environmental, social and techno-economic screening procedures for the selection of rural road sub-projects;
- ⊙ Ensure that detailed design is in compliance with agreed technical standards as well as stipulated environmental and social management measures;
- ⊙ Compliance of actual works with contract conditions and quality assurance procedures as well as agreed environmental and social management measures, and,
- ⊙ Sensitizing and capacity building of the PIU officials, Contractors and the PRI representatives towards implementation of the ESMF provisions.

4.1.3 Training Plan

Implementation staff of PMGSY would need to be oriented towards environmental management. A three tier-training plan is prepared to orient the staff at state level, district level and field level towards implementation of ESMF. The training plan with the mode of training and target groups along with the duration is presented in the Table 4-1.

Table 4-1: Training Plan

(common program for effective implementation of ESMF, ECoPs, SMF and VF)

Module	Description	Participants	Form of Training	Level	Duration
Module 1					
Session I	Basic Concept of EMF Screening of corridors Environmental & Social Concerns in PMGSY	MoRD, NRRDA, Chief Engineers (CE), Superintending Engineers (SE), Executive Engineers (EE) State PIU, Revenue Department, Forest Department, Technical Examiner/Supervision Consultants	Workshop	State	One Working day

Module	Description	Participants	Form of Training	Level	Duration
Session II	<p>Basic Concepts of Social Management and Participation Framework</p> <p>Provisions of ECoP</p> <p>Provisions of Social Management Framework</p> <p>Delivery of entitlements</p> <p>Social Accountability</p>	<p>MoRD, NRRDA, Chief Engineers (CE), Superintending Engineers (SE), Senior Executive Engineers and (EE) of PIU, Revenue Department, Forest Department, Technical Examiner/Supervision Consultants</p>			
Module 2					
Session I	<p>Basic Concept of EMF</p> <p>Transect Walk</p> <p>ECoP Provisions and Applicability</p> <p>Integrating EMF provisions into DPR</p> <p>Preparation of BoQ</p> <p>Role and Responsibility</p> <p>Monitoring Mechanism</p>	<p>Executive Engineers (EE), Senior Assistant Engineers (AE) of PIU, Technical Examiner/Supervision Consultants</p>	Lecture	District	One Working Day
Session II	<p>Basic Concepts of SMF and Participation Framework</p> <p>Profile of PAPs</p> <p>Identification of Vulnerable PAPs</p> <p>Voluntary Land Donation</p> <p>Integrating social concerns in DPR</p>	<p>Executive Engineers (EE) & Senior Assistant Engineers (AE) of PIU, Technical Examiner/Supervision Consultants</p>	Lecture	District	One Working Day

Module	Description	Participants	Form of Training	Level	Duration
	<p>Role and Responsibility, delivery of entitlement</p> <p>Social accountability/community feedback</p> <p>Redressal Mechanism</p>				
Module 3					
Session I	<p>Identification of Environmental Concerns during construction stage</p> <p>ECoP provisions and its Implementation</p> <p>Reporting formats</p>	Assistant Engineers (AE), Junior Engineer (JE) of PIU, Technical Examiner/Supervision Consultants	Field based lectures	District	Two Working days which focuses on field works and operationalization
Session II	<p>Identification of Social concerns</p> <p>Grievance Redressal mechanism with the provisions of R&R framework</p> <p>Methodology for land transfer</p> <p>Delivery of entitlements</p> <p>Social Accountability/community feedback</p>	Assistant Engineers (AE), Junior Engineer (JE) of PIU, Technical Examiner/Supervision Consultants	Lecture	District	
Session III	<p>Institutional Setup</p> <p>Roles and Responsibilities of officials/contractors/consultants/Technical Examiner towards protection</p>	Assistant Engineers (AE), Junior Engineers (JE) of PIU, Contractor, Sarpanch	Interactive Session	District	

Module	Description	Participants	Form of Training	Level	Duration
	of environment Monitoring mechanisms Reporting requirements with targets				

5. Guide to Application of ECoPs

The implementation of the measures suggested in the safeguard instruments shall be in conjunction with the provisions of the Operations Manual (OM). To institutionalize the ESMF provisions into the project stages as laid down in the OM, the ESMF shall be appended to the OM in the form of Supplemental Operations Manual and references to the corresponding ESMF provisions shall be made during DPR preparation and sub-project operation. Table 5-1 provides a list of sections in the OM where the ESMF needs to be referred. The sequential process of project planning, design and implementation of PMGSY sub-projects as determined in the OM and the corresponding ESMF linkages to these stages are specified in Figure 5-1.

Table 5-1: Project process as per Operational Manual and corresponding ESMF provisions

Chapter of OM		OM Section		Corresponding ESMF Provisions
No.	Title	No.	Title	
3	Annual proposals and their clearances	3.2	Proposals	Screening criteria for selection of roads, ECoP-1.0 “project Planning & Design”
		3.4.4	Guidelines for preparing DPR	All ECoP and Resettlement & Participatory Framework Formats as given in Table 7-1.
4	Design	4.1	Route selection and alignment	Annexure 2 of R&PF “Methodology for Conducting Transect Walk” and Format 5 of Information Dissemination “Guidance Note for Transect Walk”, ECoP 1.0 “Project Planning & Design”
		4.2	Geometric design standards	ECoP – 1.0 “Project Planning & Design”
		4.3	Topographical & related ground surveys	Annexure 2 of R&PF “Methodology for Conducting Transect Walk” and Format 5 of Information Dissemination “Guidance Note for Transect Walk”, Annexure 3 of R&PF “Methodology & Format for Community Consultation, Annexure 4 of R&PF on Census Survey, ECoP 1.0 “Project Planning & Design”

Chapter of OM		OM Section		Corresponding ESMF Provisions
No.	Title	No.	Title	
		4.8	Use of local materials	ECoP 4.0 “Alternate Materials for Construction” and Annexure 4.1, 8.1 & 10.1 for MoUs/LoC/NoC for Use of local materials
5	Project Preparation	5.2	Detailed Project Report (DPR)	All ECoPs and Resettlement & Participatory Framework Formats as given in Table 7-1.
		5.3	Drawings	Construction camp drawing as per ECoP 3.0 “Construction Camp” Rehabilitation Plan for Borrow Area, ECoP 5.0 “Borrow Areas” Measures for protection of water bodies, ECoP 11.0 “Water Bodies”. Relocation drawing of cultural property, ECoP 15.0 “Cultural Properties” Transect Walk Map with alignment on Revenue Map, Annexure 2 of R&PF
		5.7	Estimates	To be prepared by PIU as per design based on typical drawings of ECoP 3.0, ECoP 5.0 , ECoP 11.0, ECoP 15.0 and Sub-Project Budget
		5.8	Analysis of Rates	To be prepared by PIU for items provided in BoQs in ECoPs not available in Standard Schedule of Rates. Reference: ECoP 3.0, ECoP 5.0, ECoP 11.0, ECoP 15.0
		5.9	Environmental Management	All provisions of ESMF and R&PF
6	Scrutiny of DPR	6.2	Preparation of DPRs by PIU	Checklist of DPR preparation, ECoP 1.0 “Project Planning & Design”.
8	Project Implementatio	8.1	State level agencies	Designating the responsibility of environmental management to

Chapter of OM		OM Section		Corresponding ESMF Provisions
No.	Title	No.	Title	
	n and Contract Management			Environmental Officer, ESMF 7.0 “Implementation Arrangements”
		8.3	Steps involved in implementation	Seeking consent letters by contractor as per ECoPs, MoUs for land Transfer as per Annexure 5 of R&PF
		8.8	Work program	Scheduling work program as per ECoP 1.0 “Project Planning & Design”, Format 10 of Information Dissemination
		8.14	Payments & certificates	Final Payment after issue of certificates for completion of rehabilitation of land temporarily used for construction activities as per ECoPs
14	Road Safety	14.2	Engineering measures	All provisions of ECoP 14.0 “Public & Worker’s health and Safety, Format 10 of Information Dissemination
		14.3	Safety during construction	
		14.4	Road safety awareness	
15	Implementation Responsibility		Table 13.1	Audit responsibilities as per ECoP 18.0 “Environmental Audit

5.1 Project Cycle: Sub-Project Details

The entire project cycle or process is divided into five phases of work:

- ⊙ **Corridor Prioritization** encompasses tasks related to the prioritization of the project corridors through preparation and approval of the District Rural Road Plan and the PMGSY road under the core network. The PMGSY road under core network details are shall be disclosed to the community subsequent to its finalization at the District, Block and concerned Gram Panchayats. Roads out of the PMGSY road under core network shall be prioritized for implementation in each year.
- ⊙ **Project Planning and Design:** The planning and design phases involves:

- First task involves, finalization of alignment, inventorization of social including sites for land accretion² and environmental features, considering aspects of road safety and scope for future growth, consultation with the land owners/community and identification of likely PAPs through community planning during transect walk.
- Second task involves design of road geometrics and enhancement measures based on the outcome of the first task and preparation of Detailed Project Report (DPR)
- ⊙ **Site Preparation** process involves mobilization of contractor that includes setting up of site, signing of MOU/NOC/LOC, site clearance, etc. During this stage, the contractor will organize consultations with the community and migrant labour to discuss temporary impacts during construction including safety and the work schedule. It is only after the physical possession of land and MOUs for use of local resources that the mobilization of machinery will start on site.
- ⊙ **Construction Stage:** The stage involves where actual construction of PMGSY Road begins. The stage includes earthwork, sub-base and base course, construction of culverts and drains, etc. with focus on public and worker safety. Monitoring plays a key role in this stage to ensure all measures are followed as per the contract document, which includes DPR.
- ⊙ **Post Construction Stage:** The post construction scenario tasks include Reclamation of temporary used land for disposal of waste, storage of material, etc.; borrow areas, water bodies; etc. The reclamation shall be considered complete only after the contractor secures a certificate of completion from the land owner. The other tasks that need to be undertaken by the Gram Panchayats include managing the induced development and tree plantation.

The detailed PMGSY process outline and corresponding EMF provisions and application of ECOP are presented in Figure 5-1 and Table 5-2 respectively. The responsible agency/official involved, time frame, etc. is presented in Table 5-1.

² Refer SMF, a separate volume for the details

Figure 5-1: PMGSY Process Outline and Corresponding ECOP Provisions

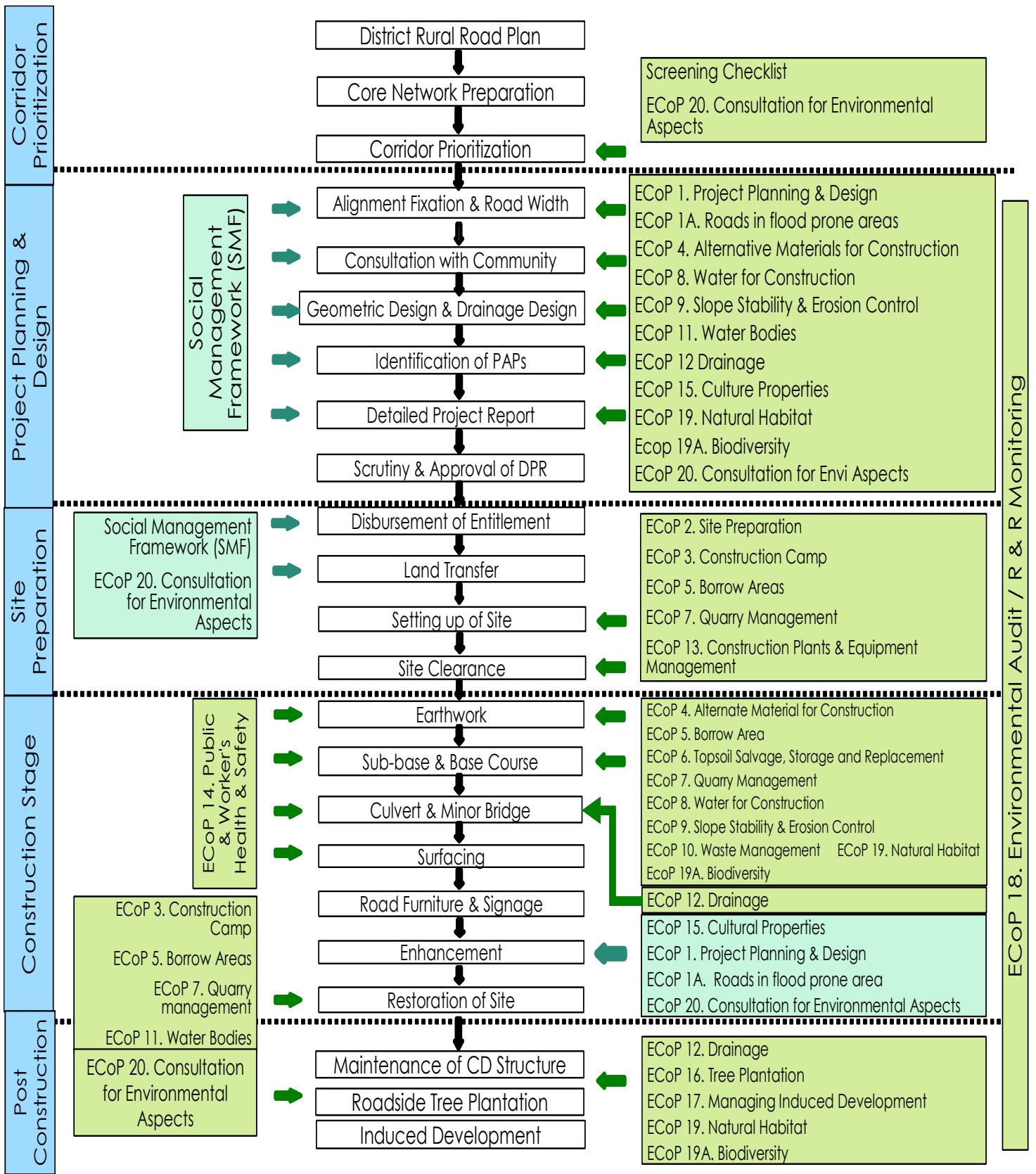


Table 5-2: ESMF Tasks and Implementing Agency

Project Stage	Task	Target Group	Responsibility	Time Frame
1. Corridor Prioritization Stage	Dissemination of PMGSY Roads under Core network	Community	PIU (EE/AE), ZP, GP/VC	After Approval of Core Network
	Selection of Roads	-	PIU (EE/AE), GP/VC, Revenue Department	First Week of DPR Preparation
2. Project Planning and Design Stage				
i. DPR Preparation Stage	Dissemination of Project Information	Community	PIU (EE/AE), GP/VC	First Week of DPR Preparation
	Screening to be carried out by		Qualified specialists of PIUs,	First Week of DPR Preparation
	Review of screening report by if potential significant impacts are identified during screening,		PMC and SRRDA/NRRDA	First Week of DPR Preparation
	Sensitization of Community	Community	PIU (EE/AE), GP/VC (Sarpanch & Ward Members)	First Week of DPR Preparation
	Finalization of Alignment (Transect Walk, Alignment Shifts incorporating community suggestions)	Community	PIU (EE/AE), GP/VC (Sarpanch & Ward Members), Revenue Dept and others	First month of DPR Preparation
	Geometric Design & Drainage Design	Community	PIU (AE/JE)	-

Project Stage	Task	Target Group	Responsibility	Time Frame
	Marking of Alignment	-	PIU (EE/AE), GP/VC (Sarpanch & Ward Members), Revenue Dept and others	12 th Week of DPR Preparation
	Scrutiny and Approval of DPR	-	Technical Examiner/Supervision Consultants	-
	DPR Auditing	-	PIU/TE/CSC	-
3. Implementation Stage				
i). Site Preparation Stage	Collection of MoU Affidavits	PAPs	PIU (EE/AE), GP/VC (Sarpanch & Ward Members), Revenue Department	First month of Implementation after approval of DPR
	Relocation/shifting of common property resources	Community/PAPs	PIU (EE/AE), GP/VC (Sarpanch & Ward Members)	By end of 2nd month of Implementation after approval of DPR
	Environmental supervision/audit		Environmental specialists of NRRDA, SRRDA and PMC	
ii). Construction Stage	Temporary impacts during construction	Community	GP/VC, Contractor	From 4th month of project Implementation, till completion of construction work
	Health Impacts including HIV/AIDS	Community	GP/VC, Contractor, PHC, DACS	From 4th month of project Implementation, till completion of construction

Project Stage	Task	Target Group	Responsibility	Time Frame
				work
	Setting up of Site	-	Contractor	First month of Implementation after approval of DPR
	Redressal of Grievances	Community/PAPs	PIU (EE/AE), GP/VC (Sarpanch & Ward Members), Revenue Dept	Throughout the project cycle
	Unforeseen Impacts	Community	PIU (EE/AE), GP/VC (Sarpanch & Ward Members), Revenue Dept, Contractor	From 4th month of project Implementation, till completion of construction work
	MoUs for use of local resources	Community	Contractor, GP/VC (Sarpanch)	From 4th month of project Implementation, till completion of construction work
	Monitoring of Construction Work		Auditor, PIU (EE/AE)	
	Environmental supervision/audit		Environmental specialists of NRRDA, SRRDA and PMC	
iii). Post construction Stage	Reclamation of Temporary used land borrow areas, water body and cultural property	Community	Contractor	-
	Tree Plantation	Community	GP/VC (Sarpanch, ward members) Community	-
	Managing Induced development	Community	GP/VC (Sarpanch, ward members)	-

Project Stage	Task	Target Group	Responsibility	Time Frame
	Monitoring Progress		PIU (EE/AE)	Throughout the project cycle
	Project evaluation	Community/PAPs	PIU and GP/VC	After project completion
	Environmental supervision/audit		Environmental specialist of NRRDA, SRRDA and PMC	

PIU: Project Implementation Unit; GP/VC: Gram Panchayat/Village Council; ZP: Zilla Panchayat; RD: Revenue Department; DRDA: District Rural Development Agency; DoRD: Department of Rural Development; DACS: District AIDS Control Society; PHC: Primary Health Centre; and TE: Technical Examiner

Annexure 1 – Note on Implementation Experience of ESMF

The below details the implementation experience of various elements of ESMF during the implementation of PMGSY RRP II main project.

Transect Walk

A walk along the suggested alignment by PIU with the communities, PRI and key informants to observe, to listen, and to ask questions which would enable identification of problems and collectively evolve solutions. The transect shall enable the PIU, to quickly learn about the social structure, issues pertaining to land, social impacts, soils, land use, and community assets and to triangulate data already available.

The MoRD made this Transect Walk mandatory to entire PMGSY by including it in the PMGSY Guidelines. The paragraphs 6.13 and 8.4 of the PMGSY Guideline and paragraphs 7.4 and 7.5 of the PMGSY-II Guideline, clearly defines the necessity, role and responsibility and documentation requirements in the Detailed Project Reports (DPRs).

Tree Plantation

The rural connectivity is expected to achieve convergence with other programmes. The Ministry has found excellent opportunities for avenue plantation across the road network and has time and again communicating to States since May 2006. Apart from creating massive wage employment opportunities, it also has livelihood support for rural poor. Moreover, this afforestation drive will involve community as well as PRI bodies.

Taking a leap ahead, tree plantation is also part of PMGSY Guideline. Ministry has issued a detailed advisory in January 2014 and disseminated a detailed advisory on preparation of action plan with an increased focus on convergence between PMGSY & MGNREGS, in July 2014. In this endeavour, Ministry in consultation with Indian Roads Congress (IRC) has also issued a detailed guidelines for road side plantation on PMGSY roads (IRC:SP:103-2014). Further, Ministry has also fixed target of planting approximately 5 lakh plants during 2014-15 and about 12 lakh plants during the year 2015-16. From April 2016 onwards, verification of these plantations as been assigned to National Quality Monitors during the inspection of PMGSY completed roads and roads under maintenance. Provision in OMMAS is also being made for data capturing on Tree plantation on PMGSY roads.

Training on Environmental and Social Safeguards Management Framework

With a major thrust from MoRD and NRRDA, the World Bank conducted One-day Master Trainers Training programme for Engineers of 8 participating States in World Bank office on 10th March 2015. Around 15 Master Trainers were trained in 8 States and these further conducted the trainings at PIU levels in their respective States. During 2015-16, the Phase-I of Training on ESMF trained 4,061 against estimated 2897 engineers in 8 participating States. And during 2017, it was targeted for 4,107 engineers to be trained under Refresher Course on ESMF.

These trainings have mainstreamed and enhanced the environmental and social safeguards management dimensions in PMGSY. Further, the integration of ESMF requirements in to the DPRs has been reinforced with these trainings. It has also created awareness and sensitized the engineers on need for compliance with ESMF requirements.

Innovative Materials and New Technology Adoption

Due to the quantum jump in road development programmes in the country, availability of quality aggregates is becoming an area of concern. For construction of low volume rural roads, it is possible to use locally available marginal materials and soft aggregates by suitably modifying them with addition of lime or cement or an additive other than cement/lime and even through mechanical stabilization depending upon their strength characteristics and other chemical properties (including water absorption, etc.). The immediate focus may, therefore, be to promote and encourage mainstreaming of the above technologies so as to maximize the use of locally available marginal materials and soft aggregates. This would help not only in cost reduction but also in protecting the environment, reducing carbon footprint in the process as well as time of construction.

In order to promote cost effective and fast construction technologies in construction of rural roads, using new materials/ waste materials/ locally available materials; NRRDA has issued Guidelines on Technology Initiatives in May 2013. The states are required to propose at least 10% of the length of annual proposals using any of the new technologies, for which specifications of Indian Roads Congress (IRC) are already available and an additional length of 5% of annual proposals with any of the new technologies for which specifications of IRC are not available, including materials accredited by IRC.

In order to encourage innovation in development of materials and construction technologies, the IRC have adopted the practice of accreditation of materials and technologies. List of such accredited materials and technologies is available on websites of both IRC and NRRDA. For such materials and technologies as also relevant for rural roads, it would be advisable that performance of such demonstration projects are evaluated, analyzed and specifications developed, before these materials can be recommended for use on large scale. A report on performance of such materials/technology should be obtained from the road agency under whose jurisdiction the demonstration project has been carried out. The work of performance analysis of demonstration projects can be carried out through research institutions like CRRI/PTAs/IITs/NITs/State Engineering Research Institutions and other well established engineering institutions.

This initiative of new technology would

- promote cost effective & fast construction
- promote environment friendly “green technologies”
- expand the “working season”

At present, the technologies which are used by States under this initiative is as follows:

A. Technology with IRC Specifications:

- Lime stabilization
- Cement stabilization
- Mechanical stabilization
- Use of Fly Ash/Pond Ash
- Lime, fly ash stabilized Bases
- Use of fly ash in cement for concrete structures
- Roller Compacted Concrete Pavements/ Cell-filled Concrete

- Cold Mix
- Waste Plastic

B. Technology with Non-IRC Specifications:

- Locally available /Marginal materials, Brick aggregates etc.
- Blast furnace Slag/ Steel Slag/Copper Slag
- Jute / Coir Geo-textiles
- Rice husk
- Quarry Waste Materials
- Bio Engineering Measures
- Slope Stabilization, Bamboo Piling etc.
- Nano-technology

So far since 2014, the states have used various technologies listed above and has made considerable progress. In 2014-15, length of 1,041.2 km was constructed and in 2015-16, length of 2,176.34 km was constructed. And in 2016-17, length of 5000 km was constructed.

Experience relating to social aspects:

- i) NRRDA and SRRDAs have now mainstreamed the Bank's safeguard provisions in PMGSY through its Operations Manual, templates used to prepare detailed engineering designs and all DPRs include details of transect walks and community consultations, land take, citizen monitoring, and grievance redress mechanisms;
- ii) land take has been largely avoided or minimized using SMF provisions such as re-routing of alignments or minimizing through design;
- iii) though some times procedures were not always followed, periodic checks and monitoring ensured that subsequent DPRs included all requisite details;
- iv) thematic assessment undertaken in the states of Rajasthan and Uttar Pradesh found limited adverse impacts on people, largely restricted to the modest loss of land from the widening of existing tracks ;
- v) VF has benefitted tribal and scheduled caste population in terms of selection of roads in their habitations as well as through provision of road side infrastructure and amenities such as handpumps, platform for handpumps, approach paths to educational, health and community facilities;
- vi) in addition, improved roads have facilitated construction/improvements to community infrastructure;
- vii) Involvement of community/ women self help groups in off-carriageway maintenance of rural roads and experience of successfully piloting provision of maintenance works to women SHGs has enabled scaling up under this AF.

Challenges and issues prevailing

- Deficiencies in Detailed Project Reports (DPR) (lack of provisions, inconsistencies)
- Timely shifting of utilities

- Design and Provision of drainage at appropriate locations
- Enclosing the MoUs/ Gift Deeds of all land donors
- Workers and work site safety management

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