



Environmental Monitoring Report

Project Number: 47341-002
October 2016
Period: January 2016 – June 2016

IND: South Asia Subregional Economic Cooperation Road Connectivity Investment Program - Tranche 1

Submitted by

Externally Aided Projects, Public Works Department, Government of Manipur

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Asian Development Bank

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Imphal, the 2nd September, 2016

To

M. Teresa Kho (Ms),
Country Director,
Indian Resident Mission, ADB,
4 San Martin Marg, Chanakyapuri,
New Delhi 110021, India.



Subject:- Submission of 1st Semi Annual Environmental Monitoring Report for the period from January 2016 to June 2016 for "Construction of Imphal Kangchup-Tamenglong Road" in the state of Manipur under SRCIP tranche-1, Loan No. 3118-IND.


Madam,

The 1st Semi Annual Environmental Monitoring Report for the period from January 2016 to June 2016 for the Manipur state Sub Project submitted by the Implementation Support and Capacity Development Consultant (ISCD) is forwarded for examination and further n/action.

Encl: - As above



Yours faithfully,


(Y. Joykumar Singh)
Project Director,
EAP, PWD, Manipur.


Copy to:-

1. The Chief Engineer, PWD, Manipur,
2. The Deputy Secretary (ADB-II), DEA, Ministry of Finance, Government of India, North block, New Delhi,
3. The Project Officer, INRM, ADB, New Delhi,

IND: South Asia Subregional Economic Cooperation Road Connectivity Investment Program – Tranche 1 (Non-sample subproject) (ADB Loan No. 3118 Tranche-I) Imphal-Kangchup-Tamenglong Road



Semi-Annual Environmental Monitoring Report (January 2016 – June 2016)

Revisions			Submitted by:		Submitted to:	
Rev. No.	Particulars	Date	 Mukesh & Associates in JV with DONG IL Engineers Consultants Co. Ltd. in association with Alliance Engineers & Consultants		The Project Director, Externally Aided Project, Public Works Department, Government of Manipur, Manipur.	
Prepared by:		Checked by:	Appd. By :	Sheet Size : A4	Date: 27.08.2016	
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CURRENCY EQUIVALENTS
(As of 28 February 2015)
Currency unit – Indian rupee (INR)
INR1.00 = \$ 0.01597
\$1.00 = INR 62.6345

ABBREVIATION

AADT	Annual Average Daily Traffic
AAQ	Ambient air quality
AAQM	Ambient air quality monitoring
ADB	Asian Development Bank
AH	Asian Highway
ASI	Archaeological Survey of India
BDL	Below detectable limit
BGL	Below ground level
BOD	Biochemical oxygen demand
BOQ	Bill of quantity
CCE	Chief Controller of Explosives
CGWA	Central Ground Water Authority
CITES	Convention on International Trade in Endangered Species
CO	Carbon monoxide
COD	Chemical oxygen demand
CPCB	Central Pollution Control Board
CSC	Construction Supervision Consultant
ISCD	Implementation Support and Capacity Development
DFO	Divisional Forest Officer
PCCF	Principle Chief Conservator of Forest
CCF	Chef Conservator of Forest
WLW	Wild Life Warden
DG	Diesel generating set
DO	Dissolved oxygen
DPR	Detailed project report
E&S	Environment and social
EA	Executing agency
EAC	Expert Appraisal Committee
EFP	Environmental Focal Person
EHS	Environment Health and Safety
EIA	Environmental impact assessment
EMOP	Environmental monitoring plan
EMP	Environmental management plan
ESCAP	United Nations Economic and Social Commission for Asia and Pacific
GHG	Greenhouse gas
GIS	Geographical information system
GOI	Government of India
GoM	Government of Manipur
GRC	Grievance redress committee
GRM	Grievance redress mechanism
HFL	Highest flood level
IA	Implementing Agency
IMD	Indian Meteorological Department
IRC	Indian Road Congress

IUCN	International Union for Conservation of Nature
IVI	Important value index
LHS	Left hand side
LPG	Liquefied petroleum gas
Max	Maximum Min Minimum
MJB	Major bridge
MNB	Minor bridge
MOEF	Ministry of Environment and Forests
MORSTH/MORTH	Ministry of Road Surface Transport and Highways
MPRSD	Master Plan Road Sector Development
NGO	Non-governmental organization
NH	National Highway
NOC	No Objection Certificate
NOx	Oxides of nitrogen
NPL	National Physical Laboratory,
NWBI	National Wildlife Board of India
PAH	Project Affected Household
PAP	Project Affected Persons
PAS	Protected Areas
PCC	Portland Cement Concrete
PCR	Public Community Resources
PCU	Passenger Car Units
PD	Project Director
PM	Particulate Matter
PIU	Project Implementation Unit
PPE	Personal protective equipment
PPT	Parts per trillion
PPTA	Project Preparedness Technical Assistance
PUC	Pollution Under Control
PWD	Public Works Department
R & R	Rehabilitation and Resettlement
RCC	Reinforced cement concrete
RHS	Right hand side
ROB	Road Over Bridge
ROW	Right of way
RSPM	Respiratory suspended particulate matter
SAARC	South Asian Association for Regional Cooperation
SC	Scheduled Cast – Name of a community in India
SEIAA	State Environmental Impact Assessment Authority
SEMU	Social and Environmental Management Unit
SH	State highway
SIA	Social Impact Assessment
SO2	Sulphur Dioxide
SOI	Survey of India
SPCB	State Pollution Control Board
SPL	Sound Pressure Level
SPM	Suspended Particulate Matter
ASPS	ADB Safeguard Policy Statement, 2009
ST	Scheduled Tribes – Name of a community in India
TA	Technical assistance
TDS	Total dissolved solids
TSS	Total Suspended Solids
UA	Urban Agglomeration
UIDSSMT	Urban Infrastructure Development Scheme for Small and Medium Towns

UNESCO	United Nations Educational, Scientific and Cultural Organization
USEPA	United States Environmental Protection Agency
UT	Union Territories
WHC	Water holding capacity
WWF	World Wildlife Fund
ZSI	Zoological survey of India

WEIGHTS AND MEASURES

dB(A)	A-weighted decibel
ha	hectare
km	kilometre
km ²	square kilometer
KWA	kilowatt ampere
Leq	equivalent continuous noise level
µg	microgram
m	meter
MW (megawatt)	megawatt
PM 2.5 or 10	Particulate Matter of 2.5 micron or 10 micron size

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

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EXECUTIVE SUMMARY

1. This report is the 1st semi-annual report on environmental safeguards compliance pertaining to Imphal-Kangchup-Tamenglong road (non-sample subproject) for the period January 2016 to June 2016. This subproject is covered under Tranche-1 of ADB's SASEC Regional Road Connectivity Investment Program in India. The report also briefly describes the Project, existing environmental conditions in the project area, environmental impacts during pre-construction and construction phases and corresponding mitigation measures, public consultation process, implementation of environmental management plan (EMP) and its monitoring plan.
2. Imphal-Kangchup-Tamenglong road (non-sample subproject) is financed by ADB and is expected to be completed by March 2020 at a cost of Rs.1114,17,63,506.68 (Rupees One Thousand One Hundred Fourteen Crores Seventeen Lakh Sixty Three Thousand Five Hundred Six and Sixty-eight Paise only).
3. Project Implementation Unit (PIU) headed by the Project Director, External Aided Project, PWD, Government of Manipur is the Executing Agency for the Project. The civil works contract package under the project is awarded to M/s. Hindustan Construction Company Limited (HCC) in joint venture with M/s. Vensar Constructions Company Limited (VCCL) in March 2016. The Construction Supervision Consultant of civil works is M/s. SMEC International Pty. Ltd. in JV with M/s. SMEC (India) Pvt. Ltd. M/s. Mukesh and Associate in JV with M/s. DONG IL Engineers Consultants Co. Ltd in association with M/s. Alliance Engineer & Consultant is the Implementation Support and Capacity Development consultant
4. Civil contractor signed the contract agreement on 21st March, 2016. The Asian Development Bank conducted the first review meeting between 17th April and 19th April 2016. ADB Mission interacted with PIU, contractor, supervision consultant and ISCD consultant regarding project aim, objective and ADB Safeguard policies. During mission environmental related issues and acceptable mitigation measures were also discussed.
5. During May, 2016 a joint meeting was convened by PIU, EAP (PWD) officials with CSC, ISCD and Contractor's Representatives. The participants took note that contractors have some genuine difficulties to delay of mobilization within intended date of commencement date. During meeting held on 24th May 2016, contractor agreed to mobilize at site by 19th August, 2016 without further delay or excuses.
6. Imphal-Kangchup-Tamenglong Road starts from Imphal and ends at Tamenglong. It passes through 30 villages along the project alignment. The length of the main alignment i.e. from Imphal-Kangchup-Tamenglong (IKT) is 103.020 km with two spur alignments connecting Haochong (4.150 km) and Kabui Khullen (0.800 km). The total length works out to 107.970 km. the Imphal-Tamenglong road will provide direct connectivity to Tamenglong, District Headquarter. Subsequently when the further stretch from Tamenglong to Haflong is constructed, Imphal will get connected to the East West corridor. It will lessen the distance to Guwahati resulting in considerable Vehicle Operating Cost (VOC) savings and travel time savings. The initial 13 km of this road alignment, starting at Naoremthong in Imphal, up to Kangchup follows the existing road and is in plain terrain. Further alignment between Kangchup to Tamenglong (about 90 km) is Greenfield alignment following the existing tracks at certain locations and falls in hilly terrain. The project stretch passes through three districts namely Imphal west, Senapati and Tamenglong, with major part in Tamenglong district.



7. It is proposed to improve the first 5.54 km length to four lane divided carriageway and next 7.36 km length to two lanes with paved shoulder and the remaining hill stretch to two lanes. Spurs will be constructed to intermediate lane (5.5m) standards.
8. The project road will provide shortest connectivity to Haflong on “East West Corridor” of the National Highway. It will also reduce the distance to Guwahati, the commercial hub of the North East, from Imphal by at least 90 (ninety) Kms as compared to the existing route via Dimapur. The project road will also provide connectivity to 18 interior villages (between Kangchup and Tamenglong) which are presently connected by dirt tracks only.
9. The project road starts in Imphal City, just before junction with Takyel Road (towards airport) where existing 4 lane divided carriageway for the project road terminates. An earthen track at certain sections between Kangchup to Haochong earlier known as KT road during British era are still being used by settlers to transport wooden logs during dry season and are accessible on foot or by Shaktiman trucks only. The road traverses the hills connecting Bhalok and terminates at Tamenglong. Major length of the alignment is in Tamenglong District while a small section of project alignment traverses through Imphal West and Senapati Districts.
10. The environmental safeguards of the project are proposed to be implemented complying with the loan covenants, project agreement and contractor complying with the proposed mitigation measures described in the Environmental Management Plan (EMP); Safety, Health and Environment (SHE) Manual and the contract specifications. The implementation of environmental safeguards shall be monitored by CSC & ISCD Consultant. A baseline study proposed to be carried before or during execution at site.
11. M/s. HCC & VCCL (JV) have developed a site environment management plan which is prepared as per their ISO requirement. PIU, Client and consultant have given advice to civil contractor to modify EMP to match with project civil target and contractual obligation regarding EIA/EMP requirements.
12. Utility shifting or any excavation works not yet started.
13. Contractors did not mobilize their establishment.
14. The construction works will proceed complying with the provisions of the EMP such as review of monitoring report format, regulatory compliance action plan, camp layout review and approval accorded by the CSC. The environmental monitoring and management plan will be implemented by the civil contractor “M/s. HCC and VCCL (JV)” and will be monitored by an independent laboratory / agency approved by MOEF. The Contactor will take approval for engaging an accredited agency from the Engineer.



1. Introduction

A. Purpose of this Report

15. The objective of environmental monitoring is to get full information on i) evaluation of environmental management plan (EMP) progress by providing compliance status, ii) detect and correct non-conformances, iii) identify unanticipated impacts and implement necessary mitigation measures, and iv) provide evidence to support enforcement of penalty provisions of the civil works contract to deter non-compliance.
16. Environmental monitoring and disclosure every half-yearly by external monitoring agency is a contractual requirement for projects like Imphal-Kangchup-Tamenglong road. Environmental monitoring is part of project implementation process to be ensured by Implementing Agency EAP, PWD, Government of Manipur. The preparation and submission of the half-yearly external monitoring reports is entrusted to ISCD consultant.
17. This report is the first semi-annual environment monitoring report covering the period from January 2016 to June 2016.

B. Brief project background

18. The project road starts at Imphal City and ends at Tamenglong covering a total length of 107.970 kms. The alignment passes through districts of West Imphal, Senapati and Tamenglong connecting major settlements Imphal, Kangchup, Haochong, Bhalok and Tamenglong. The initial 13 km of project road alignment from Imphal to Kangchup is an existing road in plain terrain, whereas alignment between Kangchup to Tamenglong (about 90 km) is greenfield alignment mostly located in mountainous terrain. The present road section is proposed for improvement and upgradation to four lane from 0.00 to 5.54km (Urban stretch) with 7.25m width either side separated by 1.5m wide median. It has 2.0m wide paved shoulders and 1.5m wide drain cum footpath on either side. Two lane configuration is proposed from Km 5.54 to Km 12.944 in rural stretch with 7.0m wide carriageway, 1.5m paved shoulder and 1.0m earthen shoulders on either side in plain area. Two lane 7.0m wide carriageway with 0.9m wide earthen shoulder on either side and unlined drain on hill side is applicable in the hill section involving hill cutting on one side and filling on the valley side with provision of breast wall / Retaining wall and two lane 7.0m wide carriageway with 0.9m wide earthen shoulder on either side and unlined drain on hill side is applicable in the hill section involving fill in both sides with provision of breast wall / Retaining wall.
19. The proposed alignment for Imphal Tamenglong Road is predominantly a new alignment in hilly terrain between Kangchup to Tamenglong. The pavement of Imphal-Kangchup section of proposed Imphal Tamenglong road for approx. 13 km is in very good condition and recently overlay work has been done. Further up there is no existing road and only an old disused track is visible in small sections. Roadway geometry for existing alignment between Imphal to Kangchup section of Imphal Tamenglong road conforms to IRC standards for both horizontal and vertical geometry. As indicated earlier alignment section between Kangchup to Tamenglong is a new alignment design conforming to the hill road standards. Imphal-Kangchup-Tamenglong road is being financed by ADB and expected to be completed by March 2020 at a cost of Rs.1114,17,63,506.68 (Rupees One Thousand One Hundred



Fourteen Crores Seventeen Lakh Sixty Three Thousand Five Hundred Six and Sixty-eight Paise only).



Figure 1. Source EAP, PWD, Government of Manipur

C. Organizational setup

20. The Government of Manipur acting through the EAP, PWD is the executing agency and PIU under the Project director, EAP, PWD has established an environment safeguard cell to look after implementation and monitoring of the safeguards measures associated with the Project. Organization structure of Safeguards Cell is shown in **Figure 2**.

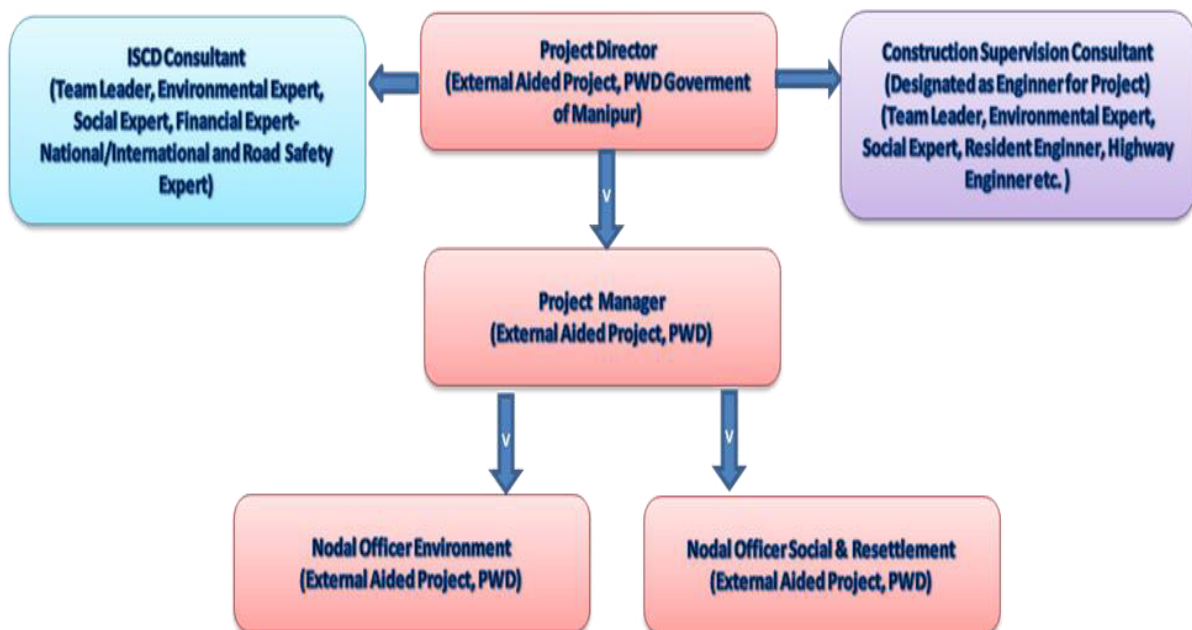


Figure 2. Organization Structure of Safeguards Cell of EAP, PWD, Government of Manipur and Associate Consultants (ISCD & CSC)

D. Planned Project Schedule

21. Civil contractor M/s. HCC & VCCL (JV) signed the contract with EAP, PWD, Government of Manipur on March 21, 2016. The date of commencement has been fixed as 12th August 2016 in the meeting held on 18th July, 2016 convened by the Engineer and attended by PD & PIU Engineers, ISCD & CSC officials and Contractors.

E. Details on Project Implementation Progress

22. Site activities like vegetation clearing, Hill cutting, earthworks, disposal of debris & spoils, slope stabilization and bio-engineering, establishment of construction camp and other construction related facilities (establishment of concrete mixing plant, asphalt batching plant, crushing plant, etc.), establishment and operation of quarry/borrow areas did not start during the reporting period.

2. Compliance on Environment Safeguards Requirements

A. Status of compliance with ADB loan covenants

23. Civil Contractors have started the mobilization process but no physical construction activities have started on ground yet.

B. List of environmental loan covenants and specify level of compliance

24. Contractor intimated that they will mobilize site on or before 19th August, 2016. They have been asked ensure compliance with environmental safeguard requirements which are explicitly provided in the Loan Agreement No.3118 IND between ADB and State of Manipur through the Externally Aided Project, Public Works Department.

C. Status of compliance with government environmental requirements

Table 1. Statutory Clearance and Contractual Obligation for pre-construction activities

Sl. No	Applicability	Status of compliance	Remark with valid reason
Implementing Agencies Status for Statutory Clearance			
01	Environmental Clearance (EC)	Under Progress	PIU has already applied for EC to Manipur State Environment Impact Assessment Authority/ Directorate of Environment, Government of Manipur. NB: Approval for the formation of Board of Members of State Environmental Impact Assessment Authority (SEIAA) is still pending

Sl. No	Applicability	Status of compliance	Remark with valid reason	
			from Ministry of Environment and Forest This is the reason for delaying to obtain environmental clearance	
02	Forest Clearance (FC)	Under Progress	PIU has already applied for FC to Forest Department, Government of Manipur. Department of Forest, Govt. of Manipur has given technical and administrative approval to the PIU-EAP, PWD Manipur regarding diversion of forest land for non-forestry purposes for Imphal Kangchup Tamenglong road project (Memo No. 7/62/2011/Forest/131 dtd. 28 th May 2016)	
Contractor Agencies Status for statutory Clearance and Permit				
01	Hot mix plants,	CTE (NOC)	Not Yet	Contractor not mobilised
		CTO (NOC)	Not Yet	Contractor not mobilised
02	Crushers Plants	CTE (NOC)	Not Yet	Contractor not mobilised
		CTO (NOC)	Not Yet	Contractor not mobilised
03	Batch mix plant	CTE (NOC)	Not Yet	Contractor not mobilised
		CTO (NOC)	Not Yet	Contractor not mobilised
04	Hume Pipe Making Plant	CTE (NOC)	Not Yet	Contractor not mobilised
		CTO (NOC)	Not Yet	Contractor not mobilised
05	Storage, handling and transport of hazardous materials	NOC	Not Yet	Contractor not mobilised
06	Location/ layout of workers camp, equipment and storage yards	NOC	Not Yet	Contractor not mobilised
07	Discharges from Labor Camp	NOC	Not Yet	Contractor not mobilised
08	Withdrawal of groundwater for construction		Not Yet	
09	Sand mining from river bed		Not Yet	Contractor not mobilised
10	Clearance from Local Civic Body For Disposal of bituminous wastes		Not Yet	Contractor not mobilised

3. Changes in project scope

25. No such changes were identified during this semi-annual (January 2016 to June 2016) period.

4. Implementation of Environmental Management Plan

26. The environmental management plan (EMP) for the project is provided in EIA report and also attached to the contract documents. As per EMP, a few of environmental management activities are required to be implemented during construction stage and a few of the activities are required to be implemented during the operation stage.

Table 2. EMP Implementation progress during construction period

Sl. No	EMP Requirement (list all mitigation measures specified in the EMP)	Compliance Attained (Yes, No, Partial)	Comment on Reasons for Partial or Non-Compliance
01	Disposal of Excavated Earth	Not Yet	Contractor not mobilised
02	Management of disposal site	Not Yet	Contractor not mobilised
03	Hill side cutting	Not Yet	Contractor not mobilised
04	Embankment filling	Not Yet	Contractor not mobilised
05	Borrow area operation and management	Not Yet	Contractor not mobilised
06	Quarry sites	Not Yet	Contractor not mobilised
07	Crusher operation	Not Yet	Contractor not mobilised
08	Hot mix plant operation	Not Yet	Contractor not mobilised
09	Batching plant operation	Not Yet	Contractor not mobilised
10	Construction camp	Not Yet	Contractor not mobilised
11	Construction / Labour camp & management	Not Yet	Contractor not mobilised
12	Maintenance of vehicles	Not Yet	Contractor not mobilised
13	Measures for Ecological sensitive areas	Not Yet	Contractor not mobilised
14	Construction Safety (EHS)	Not Yet	Contractor not mobilised
15	Traffic Safety	Not Yet	Contractor not mobilised
16	Training of workers	Not Yet	Contractor not mobilised
17	Worker Health and Hygienic	Not Yet	Contractor not mobilised
18	Due-diligence report	Not Yet	Contractor not mobilised
19	Resource Documentation	Not Yet	Contractor not mobilised
20	Communication	Not Yet	Contractor not mobilised

5. Environmental Monitoring Activities

27. Officially civil contractor not yet mobilised at site so no such monitoring activities has been carried out.

6. Key Environmental Issues

28. During this period ISCD consultant has identified numbers of environmental issues which required to be addressed during construction period.

A. Key Issues with mitigation measure suggested by ISCD Consultant

29. Detail review of available document and meetings with Project Director and environmental engineer of PIU points to the following aspects which need focused attention during pre and construction phases.
30. Imphal-Kangchup-Tamenglong Road covers a total length of 107.970 kms, out of which 13 km of this road alignment starting from Imphal to Kangchup is existing road. Further road alignment between Kangchup to Tamenglong (about 90km) is greenfield alignment. 10% of the project road is agriculture section and the rest 90% passes through forest and tribal settlement. Proper attention required during land acquisition and construction to ensure safeguards issues are addressed.
31. Project alignment beyond Kangchup is predominantly a new alignment along hills so adequate safety measure shall be taken during construction such as slope protection, safe hill cutting, disposal of surplus soil / muck, good drainage etc.
32. Project road is located in lower hills zone with altitude ranging from 500 to 1250m above MSL. Project area shows that about 20% of area is covered by thick plantation and rest 41% by thin plantation followed by degraded forest land (17%), agricultural land (12%) and settlement areas (7%). Water bodies and rivers cover about 3% land area in the project road. Muck disposal site shall be finalized and located well in advance as per the criteria given for dumping site selection for hill road project. Proper muck disposal mitigation plan shall be ready well in advance and prior approval taken from the Engineer before execution.
33. Hillside cutting and muck disposal with adequate mitigation measure like slope protection, slope stabilization, landslides protection & bio-engineering shall be recommended for consideration during construction.
34. Adequate attention is required to keep the drainage clear within construction zone at regular intervals.
35. Km. 0.00 to km. 12.944 of roads from Imphal is revenue area which does not attract Forest Diversion case. The existing width of road is 10 meter. The proposed width 0.00km to 5.54km is 23.00 meter and 5.54km to 12.944 km is 12 meter shall require proper safeguard measure to avoid safeguard related issue during construction within community.
36. Project road passing through “Kangchup-Chiru Reserve Forest”, “Tairenpokpi-Tamenglong Protected Forest” & “Kangchup Leimakhong Irang Protected Forest”



which require proper safeguard measure as per details in EMP to avoid missuses of forest land and resources during construction.

37. Km 12.944 to 103.02 is new green field alignment and proposed width is 8.80 meter and it does require forest diversion, so best practices of environmental safeguard shall apply to protect species and diversity.
38. Km 16.868 to 20.850 km comes under Kangchup reserve forest (RF) range which requires forest land diversion, so best practices of environmental safeguard shall apply to protect species and diversity.
39. Km 12.944 to 16.868 km and km 20.850 to km 72.433 come under Protected Forest (PF) range which requires forest land diversion, so best practices of environmental safeguard shall apply to protect species and diversity.
40. Km 72.433 km to km 103.02 km comes under Un-classed Forest range requiring 31.05 ha of forest land diversion, so best practices of environmental safeguard shall apply to protect species and diversity.
41. In the un-classed forest cover most common plant species are Gmelina arborea (Wang), Schima wallichii (Usoi), Cinnamomum zeylanicum (Ushingsha), Eucalyptus citriodora Hook (Nasik), Psidium guajava (Pungdon), Wendlandia tinctoria (Fheija), Cedrela loona (Tairen) and Rhus sinensis/Semialata (Heimang) and Ficus cunia (Heiret) etc.
42. Unauthorised tree cutting and hunting shall not be allowed during construction period. Proper monitoring of tree felling shall be ensured in compliance of The ADB's Safeguard Policy 2009 and GOI requirements.
43. Tree felling Information must be available before contractor mobilization for each and every chainage of ROW and a proper record of this must be documented through a joint survey by the team of contactor, supervision consultant and client / client representatives.
44. Important rivers that flow through the project region are the Nambul, the Ijei, the Bakua, the Irang, the Dingua, and the Iring. The main rivers flowing in the Tamenglong District which are transverse to proposed alignment are Irang, Iring, Ijei (Aga) river. It is important that contractor should pay a special attention and not use river water for construction. They should take precaution not to dump waste or construct any unauthorised camp within 1.5 meter of the river banks.
45. The project road passing through 90% of hilly terrain and most of the hills are sensitive for sliding. During inspection it is observed that there are quite a few sections which are sensitive for landslides. It is recommended that before construction work; contractor should identify areas susceptible for land-slides locations and develop / design adequate mitigation measure as advised by the Engineer. Documented Information should be furnished on probable landslides zones in project road before commencing construction.
46. Establishment of camp site should be as per the criteria given in EIA & EMP guidelines.
47. Quarry and crusher must be established as per guidelines given in EIA & EMP.



7. Conclusion and Recommendation

A. Overall Progress of Implementation of Environmental Management Measures

48. Contractor has not mobilised during the reporting period and so no progress made on EMP implementation. But EAP, PWD Manipur has played great role to organise regular liaison efforts with statutory bodies to obtain clearance.

B. Problems Identified and Actions Recommended

49. After reviewing of DPR, EIA&EMP report and site visits, ISCD consultant has identified 11 types of issues to be addressed during pre-construction stage. ISCD has recommended 11 types of mitigation measures which may be made an integral part of report to be taken care during pre-construction phase. March to May is a pre monsoon period at Manipur so frequent rainfall may occur. May to August is full-fledged monsoon period so construction activities may not be possible. It is suggested that contractor & CSC may utilise this pre-monsoon and monsoon months for all pre-construction related activities.



8. Site Photographs



Image-1. PIU, ISCD Team and Forest Official during Joint inspection of Forest Land at Tamenglong district



Image-2. Project Greenfield alignment



Image-3. Project Greenfield alignment within Naga hills



Image-4. PIU, ISCD Team and Forest Official during Joint inspection and consultation with local community at village Nagache



Image-5. Road alignment passing through Wairangba village (near Ch. km.72+400)



Image-6. Major Bridges on river Irang (Ch. km.72+400 of Wairangba village)



Image-7. Irang River along the project stretch (near Ch. km.72+400)



Image-8. ISCD & CSC interacting during site visit at Wairangba village (near Ch. km.72+400)



Image-9 & 10. Land use for project affected villages. (Village land use with jhum cultivation, farming, fruit bearing trees and mixed unclassified jungle flora)



Image-11. ISCD&CSC Consultation with Villagers at Bhalok-III(Project Affected Villages)Ch. approx. 90 to 95 km



Image-12. IKT road end point at Tamenglong Town



Image-13. ISCD Team Member during Site visit



Image-14. Project Director Addressing Community



Image-15. Project Director Addressing Community

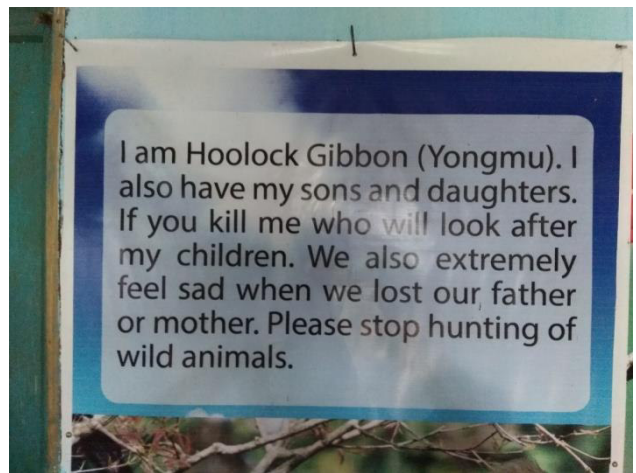


Image-16. Community Self Sensitization against Wildlife Hunting



Image-17. Project Director Addressing Community



Image-18. Irang River in Monsoon month