



Environmental Monitoring Report

Project Number: 47341-002
October 2016
Period: April 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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Imphal, the 3rd 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 and 2nd Quarterly Environmental Monitoring Report for the period from January 2016 to March, 2016 and April, 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 and 2nd Quarterly Environmental Monitoring Report for the period from January 2016 to March, 2016 and April, 2016 to June 2016 for the Manipur state Sub Project submitted by the Construction Supervision Consultant (CSC) is forwarded for examination and further n/action.

Encl: - As above



Yours faithfully,


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

Copy to:-

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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,



**Construction of (i) Imphal Kangchup Tamenglong Road & (ii)
Imphal Ring Road in the State of Manipur under ADB assisted
SASEC Regional Connectivity Investment Program (SRCIP) Loan
No. 3118-IND Tranche-1**

ENVIRONMENTAL MANAGEMENT PLAN IMPLEMENTATION

QUARTERLY PROGRESS REPORT APRIL - JUNE 2016



**Public Works
Department**

GOVERNMENT OF MANIPUR

AUSTRALIA | ASIA | MIDDLE EAST | AFRICA | PACIFIC

| | |
|-----------------|--|
| Project Name: | Construction Supervision Consultancy Services for SASEC Regional Connectivity Investment Program under ADB Loan No. 3118-IND Tranche – 1 in the State of Manipur |
| Project Number: | 7061438 |
| Report for: | EAP, Public Work Department, Manipur |
| Document No. | 7061438/EAP-MPWD/MAN/11 |

PREPARATION, REVIEW AND AUTHORISATION

| Revision # | Date | Prepared by | Reviewed by | Approved for Issue by |
|------------|------------|--------------------|---------------|-----------------------|
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ISSUE REGISTER

| Distribution List | Date Issued | Number of Copies |
|---|--|------------------|
| The Project Director, EAP, PWD, Manipur, Room No. 301/A, 2 nd Floor, South Block, PWD Complex, Khuyathong, Imphal – 795001 (Manipur). e-mail: pdmanipur@gmail.com | 26/08/2016 | 5 |
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GOVERNMENT OF MANIPUR

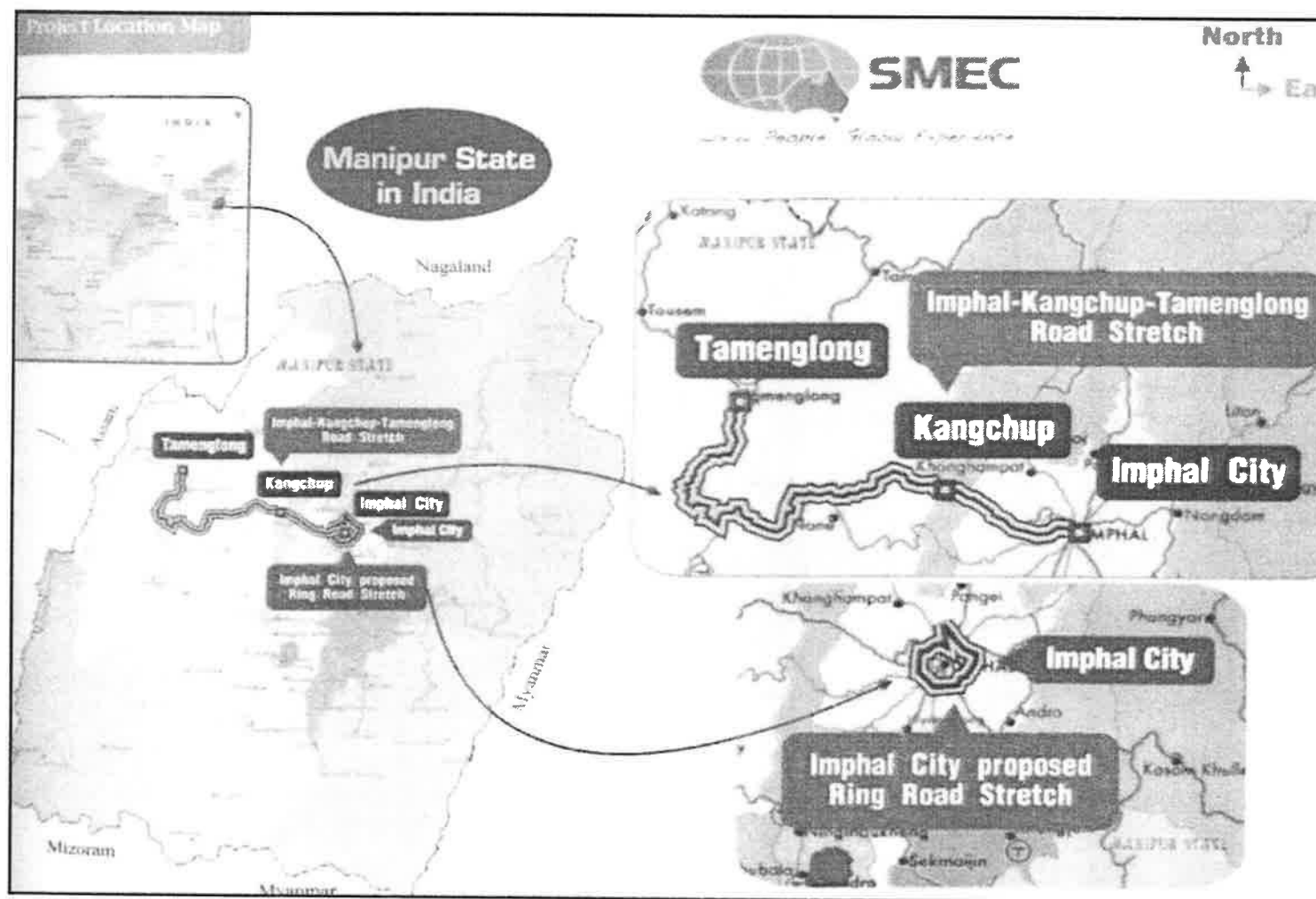
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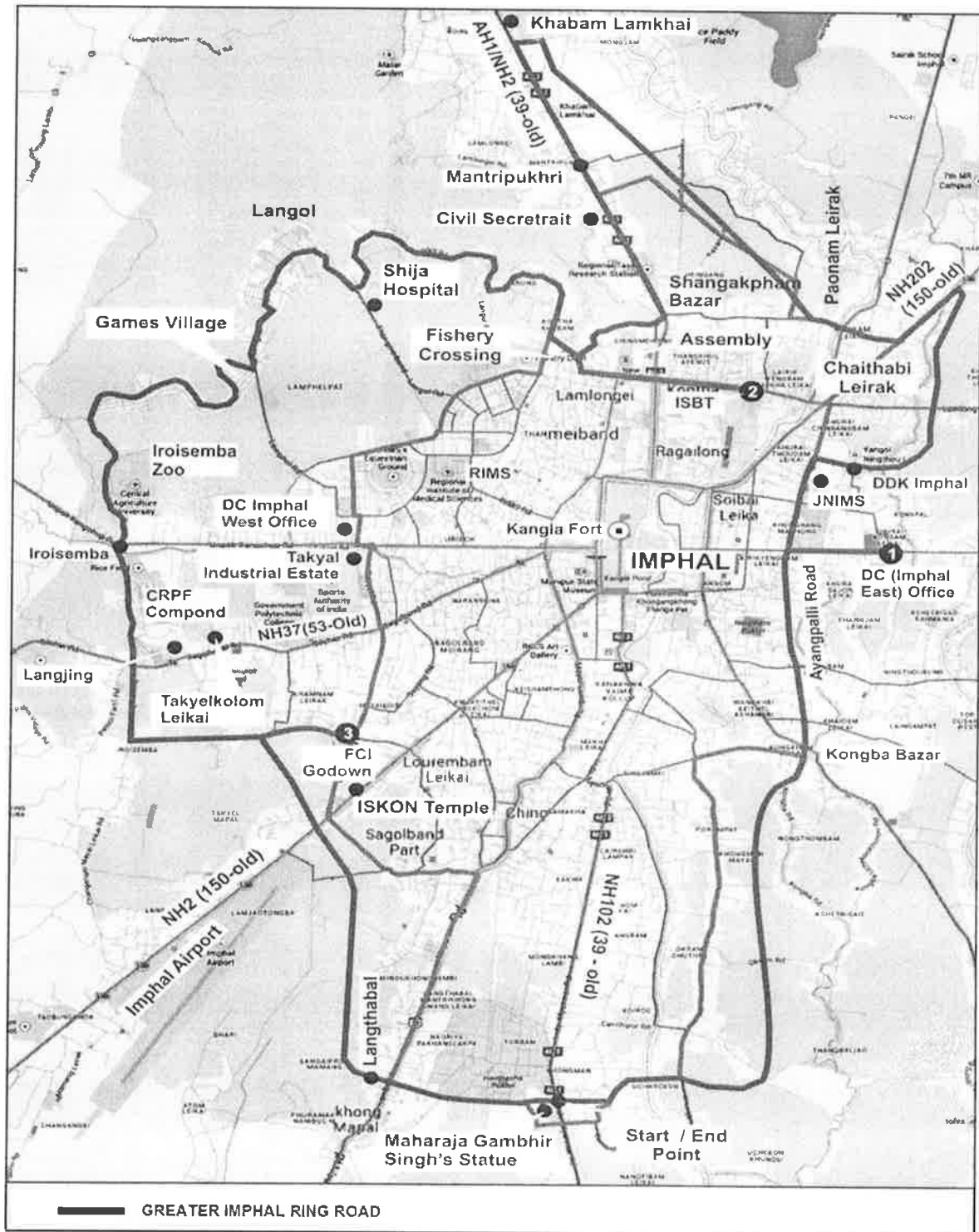
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PROJECT MAP

1.1. Location Map



1.2. Greater Imphal Ring Road



1.3. Imphal – Kangchup – Tamenglong Road



SECTION 1.0 INTRODUCTION

1.1. Project Background

Asian Development Bank (ADB) has approved the loan for South Asia Sub Regional Economic Cooperation (SASEC) Road Connectivity Investment Program (SRCIP). The SRCIP is a multi-tranche financing facility (MFF) that aims to improve about 500 km of priority road sections in North Bengal and Northeast of India, through an investment program set out in phases (tranches). The first tranche includes two works packages in the State of Manipur: Construction of Imphal-Kangchup-Tamenglong Road and Construction of Greater Imphal Ring Road

Public Works Department (PWD), Manipur is the Executing Agency for the project. The project contracts are based on FIDIC documents, harmonized for multi-lateral banks, and is to be executed as item-rate, bill-of-quantities (BOQ) construction contracts.

1.2. Project Description

1.2.1. Imphal Kangchup Tamenglong Road

The first road construction package, i.e. Imphal-Kangchup-Tamenglong Road starts from Imphal and ends at Tamenglong. The instant road was originally proposed as part of Imphal-Tamenglong-Tousem-Haflong Road which would have become an important link of the SASEC Road Network/ Connectivity. The Imphal-Tamenglong road will provide direct and shortest 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 at a distance of approximately 187.0 km against the existing 267.0 km, thus providing the shortest connecting link between ASEAN and SASEC countries. It will also lessen the distance to Guwahati resulting in considerable Vehicle Operating Cost (VOC) savings and Travel Time savings.

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 initial 13 km of this road alignment, starting at Naoremthong in Imphal, up to Kangchup, follows the existing road and falls in plain/ rolling terrain. Further alignment between Kangchup to Tamenglong (about 95 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. The project road from Imphal to Tamenglong via Kangchup passes through 30 villages along the project alignment.

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.

1.2.2. Greater Imphal Ring Road

The other road construction package, i.e. Greater Imphal Ring Road, is 35.961 km in a plain/ rolling terrain around Imphal, capital city of Manipur. The project road would be constructed as a four-lane road in sections with heavy traffic volume, and narrowed down

to the width of a double-lane in areas where traffic is low. Bidding is yet to be initiated as the Land Acquisition is still to be completed.

1.3. Environmental Category

The proposed Imphal-Kangchup-Tamenglong Road project has been evaluated considering the outcome of the ADB Rapid Environmental Assessment (REA) checklist. Although there are no environmentally sensitive areas along the project road, the project involves widening of existing 5.6 km road section into 4 lane configuration and construction of about 97 km of new road to two lane carriageway configuration, which will lead to substantial change in land use. Due to these environmental sensitivities the project falls under Category - A as per ADB Safeguard Policy Statement 2009.

1.4. Consultancy Services

The Public Works Department, Manipur has employed *SMEC International Pty. Ltd. in JV with SMEC India Pvt. Ltd.* to undertake Consultancy Services for Construction Supervision for SASEC Road Connectivity Investment Program, vide Contract Agreement No. PD/EAP/SRCIP/CSC/ Agt./2015/02 dated 05 November 2015. The effective date of start of Consultancy Services was 01 February 2016.

The Objective of the Consultancy Services is to ensure that high quality construction achieved through adoption of a Quality Assurance System and adherence to the requisite Engineering Designs and the Technical Specifications. The Consultant is to closely monitor the execution of the work in order to achieve timely Completion of the Project.

1.4.1. Consultant's Mobilization

The Supervision Consultant has mobilized its team w.e.f. 01 February 2016, curtailing its team, to undertake the initial limited mandate (prior to the Commencement of the Construction Works), of carrying out the Design Review and the additional work, assigned by the Client, pertaining to carrying out survey to mark the centerlines/ toe lines in selected stretches of the alignment of Imphal – Kangchup – Tamenglong Road.

Mobilization of the Supervision Consultancy Staff/ Experts has been planned keeping in view three distinct stages – (i) Prior to the Commencement of Construction Works; and (ii) On Commencement of Work on Imphal – Kangchup – Tamenglong Road.

SECTION 2.0 APPROACH FOR MONITORING

2.1. Need for Monitoring

1. Ensure that all environment safeguard requirements as given in this EARF, ADB SPS 2009, and applicable laws and rules under MOEF are being complied with during all stages of project under the loan.
2. The environmental safeguards requirements are part of covenant of the project described under Paragraph 12 and 13 of Schedule 5 of the Loan Agreement (Ordinary Operations) – EA's Responsibility.
3. The Contractor responsibilities to comply with IEE/EMP, statutory requirements of the country/ state and ADB's SPS 2009 is specified in 'Particular Conditions of Contract' (Section 8) in the civil works 'Contract Agreement'.

2.2. Approach

The monitoring in any project is to track the progress, identify challenges, and collect information that would aide to decision making and finding solution for course correction, if required in the project. In addition, this process will also help in identifying and documenting the best practices in the project and lessons learned, which can be adopted in future projects.

In regard to the project, the CSC will monitoring the EMP implementation in the project by reviewing the progress report(s) submitted by the Contractor. Further, the approved EMP Implementation Plan of the Contractor will be the basis to check implementation progress and compliance with the Contract Agreement. The Contractor compliance with EMP reported in their progress reported will be verified and checked during CSC's site visits and review meeting of the Project.

2.3. Monitoring Period

This current report capture the activities that were performed by the Environmental Specialist, CSC and contractor compliance with EMP during the period April-June, 2016.

SECTION 3.0 REGULATORY COMPLIANCE

The Environmental Impact Assessment Report has listed out the various the environmental rules and regulations which might be applicable to the proposed Imphal-Kangchup-Tamenglong road section improvement activities. This sections provide the compliance to listed environmental rules and regulations of the country and state.

Applicable Environmental Regulatory Frameworks of Nation and State

| S. No | Project Activities | Statute | Requirement | Competent Authority | Compliance Status |
|-------|---|---|--|---|--------------------------------------|
| 1 | Implementing Project | Environment Protection Act of 1986 and as amended. EIA Notification 2006 and amendments. | Environmental Clearance | SEIAA, Manipur | Clearance under process and awaited. |
| 2 | Implementing Project in Forest Area | Environment Protection Act of 1986, Forest Conservation Act | Forest Clearance | Conservator of Forest, Govt. of Manipur | Clearance under process and awaited. |
| 3 | Establishing stone crusher, HMP, WMM plants and DG Sets | Water Act of 1974, Air Act of 1981, Noise Rules of 2000 and Environment Protection Act of 1986 and as amended | Consent-for-establishment | State Pollution Control Board | Contractor is yet to be mobilised. |
| 4 | Operating stone crusher, HMP, WMM plants and DG Sets | Water Act of 1974, Air Act of 1981, Noise Rules of 2000 and Environment Protection Act of 1986 and as amended | Consent-for-operation | State Pollution Control Board | |
| 5 | Use and storage of explosive for quarry blasting work | India Explosive Act 1984 | Explosive licence for use and storage | Chief Controller of Explosives | |
| 6 | Storage of fuel oil, lubricants, diesel etc. at construction camp | Manufacture storage and Import of Hazardous Chemical Rules 1989 | Permission for storage of hazardous chemical | SPCB or Local Authority (DM/DC) | |
| 7 | Quarry operation | State Minor Mineral Concession Rules, The Mines Act of 1952, Indian Explosive Act of 1984, Air Act of 1981 | Quarry Lease Deed and Quarry License | State Department of Mines and Geology | |

| S. No | Project Activities | Statute | Requirement | Competent Authority | Compliance Status |
|-------|---------------------------------------|----------------------------|--|--------------------------|------------------------------------|
| | | and Water Act of 1974 | | | |
| 8 | Extraction of ground water | Ground Water Rules of 2002 | Permission for extraction of ground water for road construction activities | State Ground Water Board | Contractor is yet to be mobilised. |
| 9 | Use of surface water for construction | - | Permission for use of water for construction purpose | Irrigation Department | |
| 10 | Engagement of labour | Labour Act | Labour license | Labour Commissioner | |

SECTION 4.0 INSTITUTIONAL ARRANGEMENT

The Public Works Department of Manipur (MPWD) will be the Executing Agency (EA) as well as Implementing Agency (IA) for this subproject. The project will be implemented by PIU of MPWD based in Imphal. EA/IA will be responsible for the implementation of the Project. The Project Director of PIU will be overall responsible for EMP implementation. The following key players are involved in EMP implementation during construction stage:

- EA and its Institutional Support Capacity Development Consultant (ISCDC)
- PIU and its environmental units;
- Construction Supervision Consultants (CSC) i.e. Engineer and his representatives; and
- Contractors

The EA/IA has established an Environmental and Social Management Unit (ESMU) with two officers designated as Nodal Officer-Environmental and Nodal Officer-Social for monitoring the implementation of proposed safeguard measures. ESMU is headed by the Project Director but coordinating and supervising implementation of safeguard measures will be undertaken by the designated Nodal Officers.

The Construction Supervision Consultant (CSC) in the project will act as Engineer. The CSC consultant will assist the PWD to ensure that high quality construction is achieved and to ensure that all work is carried out in compliance with the Engineering design, technical specifications and other documents as well as implementation of Quality Assurance System and take up close monitoring to ensure timely completion of the project. The CSC has mobilised the Environmental Specialist from February 24, 2016 in the team. The specialist has had an initial formal meeting with the Project Director, PWD during the quarter and reviewed documents related with environmental safeguard.

Implementation Support and Capacity Development (ISCDC) Consultants has been engaged in the project to support the EA/PIU in managing the Contractor and conducting Capacity Building training workshops. The ISCDC Consultant will act as External Monitor on Environmental Safeguard aspects. The ISCDC Consultant has also mobilised their Environmental Safeguards Specialist.

The civil works Contractor has been appointed and shall be responsible for successfully executing the Contract. The Contractor after mobilisation has to appoint a full time qualified and experienced Environmental and Safety Officer (ESO) in the project. The ESO shall be responsible for overall compliance with statutory requirements of the Country/ State, contract agreements and implantation of project's Environmental Management Plan, to minimise and to mitigate impacts induced due to the project.

SECTION 5.0 MEETING AND SITE VISIT

5.1. Meetings

The Project Director (PD), EAP has chaired a joint review meeting of CSC, ISCD and Contractor in his office on April 15, 2016. The PD advise the Environmental Specialists of CSC and ISCD to prepare Power Point Presentation highlighting project environmental safeguard challenges and possible suggestions for presenting before ADB mission. The presentation was fine-tuned during presentation before the Project Director on April 16, 2016. Similarly, the Contractor representative has been also advised to present highlighting their proposed actions to implement the project EMP.. This was followed by presentation from the Contractor. The Environmental Specialist has attended the review meeting along with other CSC team members. During the meeting team members of all parties in the project were introduced and discussed on agenda for ADB's safeguard review mission held on April 18-19, 2016.

The Environmental Specialist, CSC participated the workshop on 'Environmental Safeguard and Procedural Requirements of SPS, 2009' conducted by the Environmental Specialist, ADB on April 18, 2016. During the workshop cum review mission, the Environmental Specialist of CSC and ISCD jointly presented the environmental issues envisaged during construction stage and pointed out possible management/mitigations measures that could be adopted under the project. The ADB mission team has also assessed and specified the roles and responsibilities of CSC and ISCD during the workshop.

5.2. Site Visit

The Environmental Specialist, CSC has visited the project site on April 13, 2016. The visit was intended to have an understanding about road alignment, topography, settlements, and locations of Valued Environmental Components (VEC) along project road. The observations during site visit would help in decision making to devise possible management and mitigation measures against any impact induced due to the project. The visit was from km 55+000 (approx.) located near Noney town to km 103+200 at Tamenglong town. The observations during the site visit are:

The project road alignment (centreline) was found marked between chainage km 72.000 to km 77.000.

- The flow of Irang River is low. Based on visual observation the water is clear (transparent), and odourless. The community usages observed during the site visit are bathing, fishing etc. indicating to local people dependence on the river.
- Observing from the marked project road alignment (Photo 1) will impact house(s) located (Photo 2) between km 72+480 to km 72+600. The possibility of adopting existing road alignment needs to be studied (design perspective) to minimize the social and environmental impacts.
- Based on alignment marked at ground, the project road alignment is adjacent (Photo 3) to Irang River with gradient of section within the ruling gradient. The bank of Irang River has steep gradient (Photo 4). The ground level verification of proposed design for such similar location needs to be carried out.

- One house (Photo 3) at km 73+300 is likely to be impacted during project implementation.
- At km 75+260, a seasonal stream (Photo 5) is crossing the project road alignment. The adequacy of such streams outfalls with respect to location of propose cross drainage structures for the project needs to be checked.

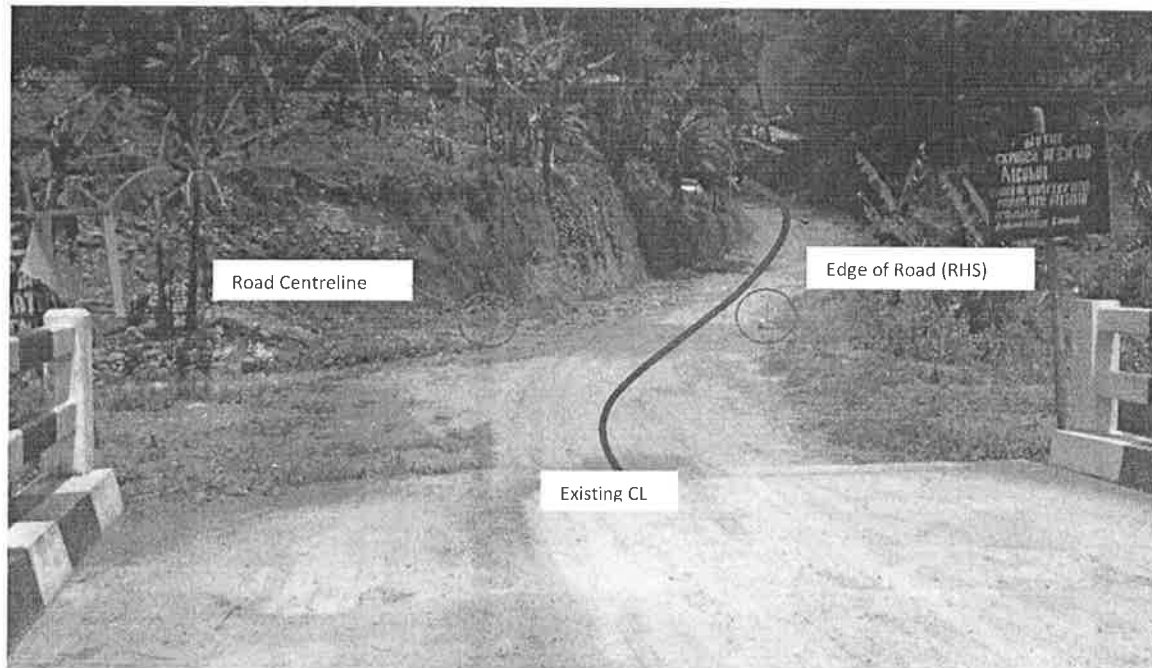


Photo 1: View of proposed road alignment from Km 72+440

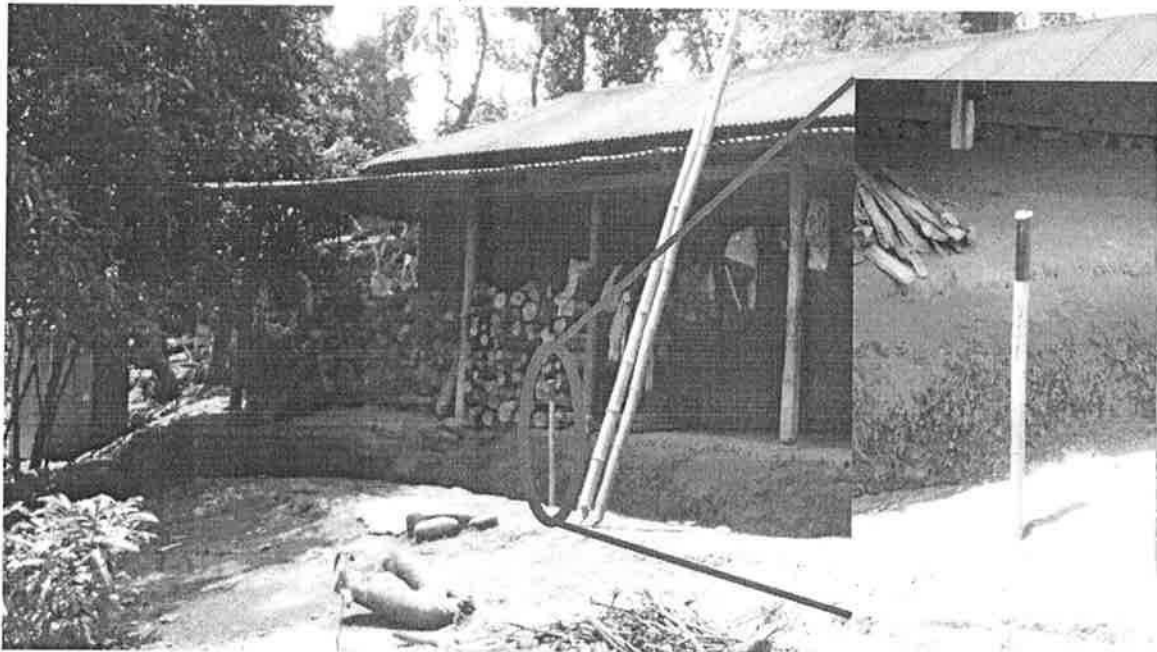


Photo 2. House Affected due to Propose Road Alignment @ km 72+580

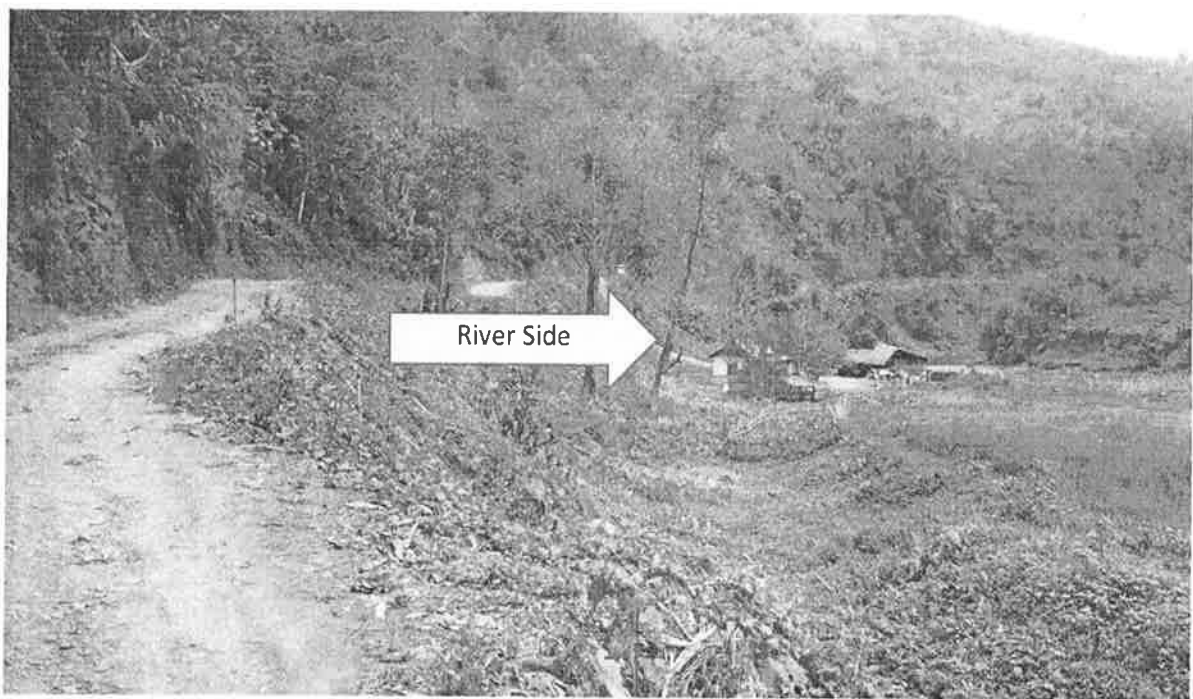


Photo 3: View (@ km 73+440) of project road alignment adjacent to Irang River Bank

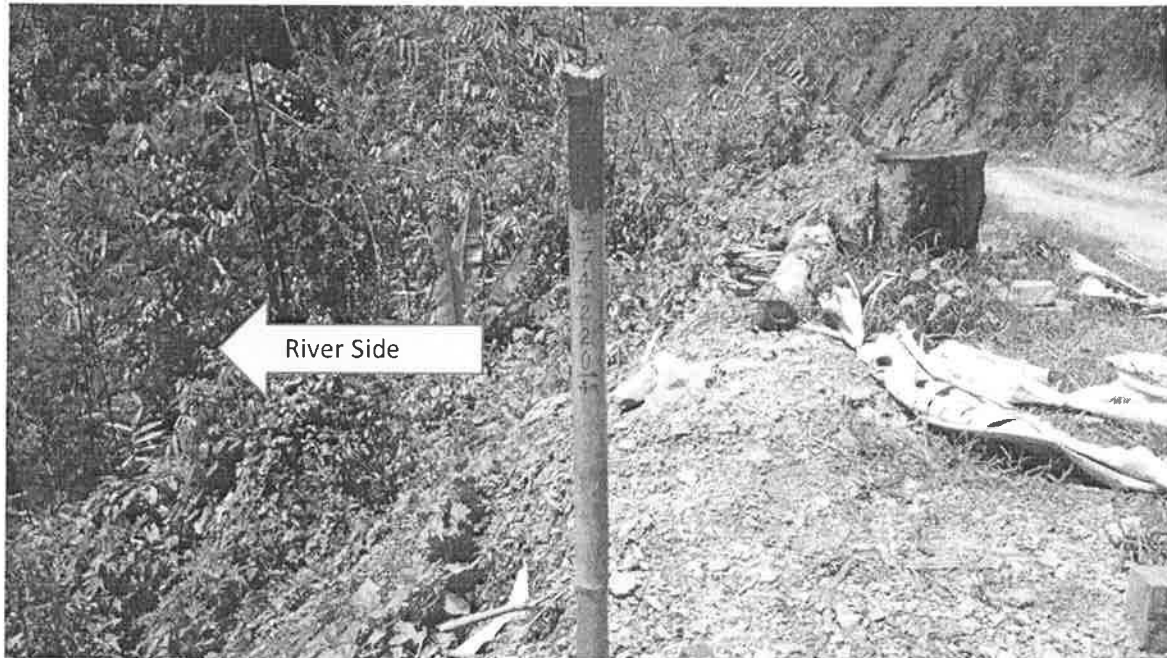


Photo 4: View (@ km 74+220) of project road alignment adjacent to Irang River Bank



Photo 5: View (@ km 75+260) of Stream Crossing Project Road Alignment

SECTION 6.0 PROJECT EMP IMPLEMENTATION STATUS

6.1. Environmental Management Plan

The Contractor is yet to mobilised. Activities related to establishment of basic facilities has not commenced during this quarter. The Contractor is also yet to submit their Work Schedule along with EMP Implementation Plan. During the reporting quarter, no civil works were taken up by the contractor.

6.2. Environmental Monitoring Plans

The Contractor is yet to commence the environmental monitoring at project sites as instructed during the meeting held at the office of Project Director on April 15, 2016. The sites for monitoring and sampling has not been finalised. Further, Contractor has been advised through CSC letter Ref: 5061165/987 dt. 3 May 2016 to submit the details of Environmental Monitoring Agency and Monitoring Schedule.

SECTION 7.0 ISSUES AND RECOMMENDATIONS

7.1. Issues and Recommendations

- i) Considering into approaching monsoon season, the Contractor should start identification of locations where establishment such as construction camp and site offices will be set-up along with sites for material stacking site, identification of disposal site, quarry site (if new site is proposed).
- ii) The project envisage cutting of hill to execute the propose road design, which consequently will results to huge quantity of excavated soil and rock. The beforehand identification of disposal sites and approving of detailed Muck Disposal Plan at each disposal site is necessary, which is silent in EMP. In absence of this, there might be site specific challenges either socially and environmentally during implementation stage. Environmental Specialist, CSC also proposed the possibility of adopting bio-engineering measures for hill slope protection.
- iii) Irang River is being used by communities existing along or in close proximity to it. Hence, measures to prevent stressing and contaminating the river water needs to be built in contractor work schedule and strict adherence to measures in EMP (water quality).
- iv) Between km 72+480 to km 72+600 social and environmental impacts is anticipated due to proposed road alignment. Hence, the possibility of adopting existing road alignment needs to be studied (design perspective) to minimise the social and environmental impacts.
- v) The project road alignment is adjacent to Irang River with gradient of section within the ruling gradient. The bank of Irang River has steep gradient. The proposed design at this location may be verified with ground situation. Further, scheduling of contractor activities should be revisited again to ensure hill cutting, earthworks, GSB etc. are planned after monsoon period to prevent impacting water quality of the river.

7.2. Other Issues

Nil.

7.3. Actions Taken Status

The compliance status will be reported in subsequent QPR.