

Environmental Monitoring Report

Semi-Annual Report No. 2

Loan Number: 3012
December 2015

NEP: SASEC Road Connectivity Project

Prepared by the Government of Nepal for the Asian Development Bank.

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CURRENCY EQUIVALENTS

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Currency unit – Nepalese Rupee (NRs)
NRs1.00 = \$ 0.00922
US \$1.00 = NRs 108.46

ABBREVIATIONS

ADB	Asian Development Bank
ADB –PD	Asian Development Bank-Project Directorate
ADF	Asian Development Fund
BOQ	Bill of Quantity
CDO	Chief District Officer
CRE	Chief Resident Engineer
CSC	Construction Supervision Consultant
CSC-ES	Construction Supervision Consultant – Environment Specialist
DDC	District Development Committee
DFO	District Forest Office
DOR	Department of Roads
EFP	Environmental Focal Person
EIA	Environmental Impact Assessment
EMAP	Environmental Management Action Plan
EMP	Environmental Management Plan
EMR	Environmental Monitoring Report
EWB	East-West Highway
GDP	Gross Domestic Product
GESU	Geo-Environmental and Social Unit
GRC	Grievance Redress Committee
HD	Halesi Diktel Road
ICB	International Competitive Bidding
IEE	Initial Environmental Examination
IOW	Inspector of Works
LB	Leguwaghat - Bhojpur
MB	Mechipul - Birtamod
MHC	Mid Hill Connectivity
MOFSC	Ministry of Forest and Soil Conservation

MPIT	Ministry of Physical Infrastructure and Transport
NCB	National Competitive Bidding
NGOs	Non-Government Organizations
NH	National Highway
PAM	Project Administration Manual
PIC/PM	Project Incharge/Project Manager
PIU	Project Implementation Unit
RAP	Rural Access Programme
RE	Resident Engineer
SASEC	South Asia Sub-regional Economic Cooperation
SLC	Sub-Project Level Committee
SPS	Safeguard Policy Statement
SRCP	SASEC Road Connectivity Project
SRN	Strategic Road Network
TOR	Terms of Reference
VDC	Village Development Committee

NOTES

- (i) The fiscal year (FY) of the Government of Nepal and its agencies ends on 16 July. FY before a calendar year denotes the year in which the fiscal year ends, e.g., FY 2015/16 ends on 16 July 2016.
- (ii) In this report, "\$" refers to US dollars.

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1. BACKGROUND

1. The Government of Nepal has received the loan from ADB for financing the SASEC Road Connectivity Project (SRCP). The Project will improve the country's road network totaling about 187 km, providing (i) alternate route crossing over Koshi River for East-West Highway (EWH) at Sunsari, Udayapur and Saptari District, (ii) three missing linkages for the Mid-Hill Highway and (iii) a feeder road connecting EWH at Birtamod and a new bridge across Mechi River, which will connect to NH31 in India and NH5 in Bangladesh.

2. The project will contribute to the development and expansion of the Strategic Road Network (SRN). The road will expand the connectivity with remote hilly areas to increase the economic activities in project areas. The Project's impact will enhance local and regional connectivity. The outcomes will be improved road transport system in eastern Nepal.

3. The project will upgrade about 73 km of bypass road and border road along EWH to two-lane standard and about 114 km of Mid Hill Connectivity (MHC) comprising three road linkages, namely Leguwaghat-Bhojpur in Bhojpur District, Halesi-Diktel in Khotang District, and Manthali-Ramechhap in Ramechhap District to intermediate-lane standard.

4. The project road locations are shown in the Figure 1.

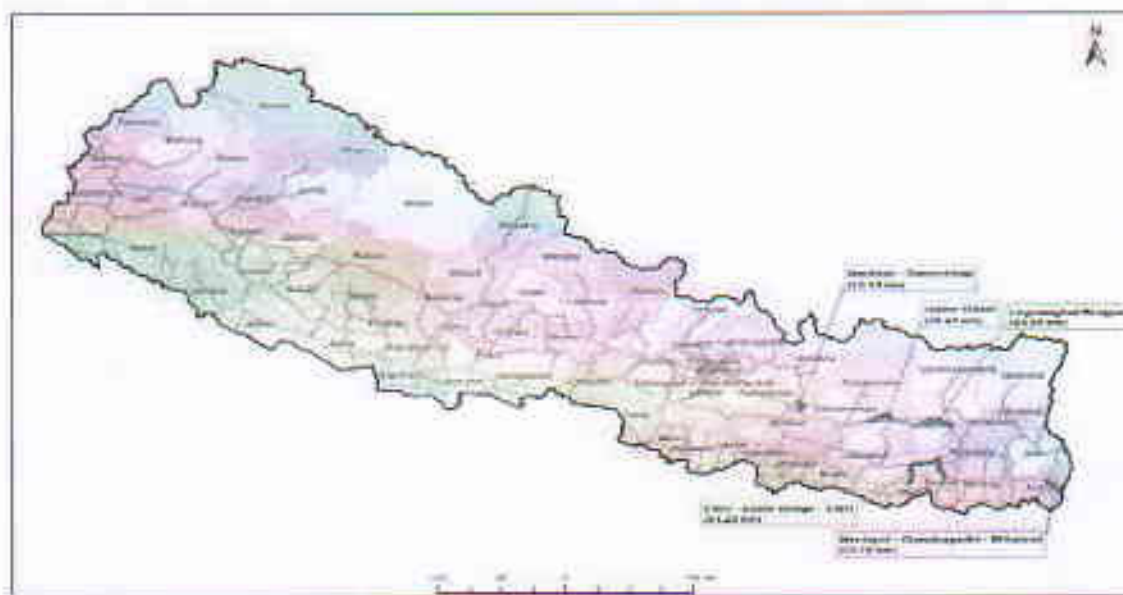


Figure 1: SASEC Road Projects in Map of Nepal

2. ENVIRONMENTAL SAFEGUARDS IN SRCP

5. This report is the 2nd semi-annual report on environmental safeguards compliance of the Nepal South Asia Sub regional Economic Cooperation (SASEC) Road Connectivity Project. It

describes the implementation of environmental safeguards activities, covering the period from July to December 2015.

6. The Environmental Monitoring Report (EMR) covers in particular the progress of the implementation of the environmental safeguards in the project. The project has been approved by the Government of Nepal and the Asian Development Bank (ADB) in July 2013. Its objective is to improve connectivity in Nepal and between Nepal and its neighbors. It consists in the following outputs: the improvement in all-weather condition of: (i) the East-West Highway (EWH) to Koshi Bridge Road (ii) Leguwaghat-Bhojpur Road (iii) Halesi-Diktal Road (km 40+0000 to km 52+000) (iv) Halesi-Diktal Road (km 52+000 to km 64+000) (v) Halesi-Diktal Road (km 64+000 to km 75+431) (vi) Mechipul-Birtamod Road (vii) Manthali-Ramechhap Road.

7. The main investment is the EWH, which is an alternate route in Sunsari and Saptari districts. This will create year-round passable conditions along the East-West Highway (EWH), especially across the Koshi River. The repair of other three feeder roads in the hill areas will improve connectivity between villages along this road system and better access to basic services. The Department of Roads (DOR) executes the implementation of the project.

8. **Categorization:** The Project has been categorized as "A" consistent with the requirements of ADB SPS 2009 since one of the project components, the East West Highway - Koshi Bridge - East West Highway passes through the buffer zone of a Ramsar site, the Koshi-Tappu Wildlife Sanctuary. The Leguwaghat-Bhojpur, Halesi-Diktal, Manthali-Ramechhap and Mechipul-Birtamod roads upgrading activities are unlikely to have significant adverse environmental impacts. Impacts, if any, will largely be short-term, reversible and manageable through appropriate mitigation measures.

3. IMPLEMENTATION ARRANGEMENT

9. Environmental focal person within the DOR PIU coordinates and ensures that all environment safeguard requirements under the project are met¹. He/she sources technical assistance from GESU as and when necessary. The EMP for all subprojects are attached to respective contract documents. The contractors must include in their bid adequate budget for implementation of all items in the EMP. The DOR PD through CSC monitor and report on the environmental compliance of contractors with the EMP and ensure proper implementation of the grievance and redress mechanism. The Construction Supervision Consultant (CSC), MSV International Inc. in association with Soil Test, Welink, and Beam Pvt. Ltd, is responsible to support the Project Directorate in the implementation of the Environmental Safeguards. Key implementation activities for each stage of sub-project implementation are as follow:

10. **a) Pre-construction:** All Contractors will complete the following activities no later than 30 days from the DOR issuance of Notice to Proceed: 1.) Submit appointment letter and resume of the Contractor's Environmental Focal Person (EFP) to DOR Project Directorate; 2) EFP engage CSC-Environment Specialist and DOR/PD to a meeting to discuss in detail the EMP, seek clarification and recommend corresponding revisions if necessary; 3) EFP request CSC-ES copy of monthly monitoring formats and establish deadlines for submission; 4) EFP submit for CSC-ES approval an action plan to secure all permits and approvals needed to be secured during construction stage which include but not limited to: i) operation of crushers and hot mix plants, ii) transport and storage of hazardous materials (e.g. fuel, lubricants, explosives), iii) waste disposal sites, and temporary storage location, iv) water use, v) emission compliance of

¹ Project Administration Manual, SASEC Road Connectivity Road Project of GoN funded by ADB, July 2013

all vehicles; vi) arrangements to link with government health programs on hygiene, sanitation, and prevention of communicable diseases; 5) EFP submit for approval of CSC-ES the construction camp layout before its establishment, and 6) at least 5 days before start of construction, the Contractor translates grievance redress mechanism in local language and post in affected VDCs stating contact names, positions, contact numbers, and addresses of key offices to receive grievances.

11. **b) Construction:** DOR PD through the CSC monitor Contractor's compliance to EMP, audit construction activities, and evaluate monitoring program, ii) in case of non conformances, the DOR, EFP and CSC recommend corrective measures and ensure these are undertaken by the Contractor, iii) if unanticipated impacts becomes apparent, DOR with support from GESU inform ADB. If required the IEE report and EMP are updated, and mitigation measures and resources to address the new impacts are identified.

12. **c) Post-construction:** DOR PD through the CSC certifies works completed in accordance with EMP and all construction sites are satisfactory rehabilitated and restored or otherwise recommend withholding of payments.

4. COMPLIANCE WITH ENVIRONMENTAL SAFEGUARD MEASURES

13. Construction works have already started in all seven packages of the road project. Overall environmental safeguard compliance of the project is satisfactory. However, it is found that implementation of EMP is weak and not completely followed. Therefore, some improvements are essential which necessitates contractor for continuous backstopping support from Construction Supervision Consultant (CSC). Budget for mitigation measures have already been included in the project cost and BoQ. Please refer Annex 2 for details about budget estimate for the implementation of environmental management. Following is summary of environmental compliances and details are given in Annex 3.

a) Environmental Clearance for all IEE/EIA reports

14. IEE report for Halesi-Diktel Road, Manthali-Ramechhap Road and Mechpul-Birtamod Road were approved in January, 2015, whereas EIA report for East West Highway - Koshi Bridge - East West Highway was only approved in April, 2015. Since IEE study for Leguwaghat - Bhojpur Road was done in earlier phase of the project by Rural Access Programme (RAP) earlier, only Due Diligence Report was prepared for this project.

b) Capacity-Building activities January-June 2015

15. In Manthali-Ramechhap Road, workshop was held on 11th Sept, 2015 in participation 27 persons from CSC's staff, the contractor's staff, petty contractors, and laborers. They were oriented on Land Acquisition and Resettlement, Environment, Road Safety, Gender Equality and Social Inclusion, and livelihood activities followed under ADB's guidelines. Similarly, GESI Specialist instructed how women participation in the construction work can be increased and made aware of possibility of AIDS/STIs transmission and human trafficking that increase along with development of transportation facilities.

16. Further the CSC's Social Safeguard team conducted a workshop on 7th August, 2015 on 'Importance of Social Safeguards' issues and progress achieved so far at Gyangjong, Kathmandu in presence of PD-DoR, Mr. Dayakant Jha; DPDs-DoR, Mr. Shyam Bd. Khana, and Dr. Shyam Manandhar, LJV Coordinator and Mr. Mahendra Bd. Karki, Chairman, Soil Test, AREs, PICs, and SMs for the project. Firstly, Mr. Mahendra Bd. Karki gave the program with an overview of the progress achieved on all subproject roads under the SASEC Road Connectivity

Project. Secondly, Social safeguards Specialists highlighted the importance of corresponding five different components of Social safeguards in this project ADB as a client

c) Appointment of Environmental Focal Person (EFP) and Orientation on Environmental Safeguards

17. Environmental Focal Persons, recruited by contractors of all road packages, were given approval for their appointment. Orientation was provided to them on environmental safeguards compliances in these road projects. Name list of Environmental Focal Person for various road packages is given below:

Table 1: Environmental Focal Person (EFP) for SRCP Road Packages

S.N.	Name of road packages	Name of Environmental Focal Person (EFP)
1.	Manthali – Ramechhap Road	Jaitun Bhujel
2.	Halesi – Diktel Road	Prabesh Devkota for package I, Sashank Khanal for package II and Anil Dhungana for Package III
3.	Leguwaghat – Bhojpur Road	Riwaj Khanal
4.	East West Highway – Koshi Bridge – East West Highway	Parshuram Gaire
5.	Mechipul – Birtamod Road	

18. Environmental Clearance Checklist was prepared and handed over to them for the necessary fill up and regular reporting to CSC Environment Specialist. Sample Environmental Clearance Checklist is given in Annex 6.

d) Status of Forest Clearance

According to Forest Act, 2049 BS (1993) and Tree Cutting in Government Forest Work Procedure 2071 BS (2014 AD), forestry clearance has to be obtained from the MoFSC, if the road subproject passes through the forest area. Most of the SRCP road subprojects pass through national and community forests and need to obtain forestry clearance. CSC has oriented to Environmental Focal Person of various road packages to initiate forestry clearance and also coordinating with central authority (Department of Forest and MoFSC) about forestry clearance process. Update of the forestry clearance process for various SASEC road packages are given in table 2 below:

Table 2: Forest Clearance Status

S.N.	Name of Road Package	Verification of No. of Trees to be cut down after IEE/EIA approval	submission of letter to DFO for the permission of tree cutting	Status of process for the permission from MoFSC for tree cutting	Marking of trees (Chhapan) by DFO Office for the cutting	Cutting trees Activities
1	EWB – Koshi Bridge – EWB Road	Complete Revision made in EMAP are: (Total No. of trees to be cut down: 3430 No. of trees to be planted under	Approval from DFO	Approval from MoFSC	2201 Tree has been marked	Not yet

		compensatory plantation: 87,750) Compensatory Plantation cost: Rs 98,146,233)				
2	Leguwaghat – Bhojpur Road	All complete in earlier phase of the road project (RAP)	Not Applicable (NA)	Not Applicable (NA)	Not Applicable (NA)	Not Applicable (NA)
3	Halesi – Diktel Road (all three packages)	Complete Revision made in EMAP are: (Total No. of trees to be cut down: 801 No. of trees to be planted under compensatory plantation: 20,025) Compensatory Plantation cost: Rs 18,72,337)	Submitted by PIC to DFO	Ongoing (file is pending in DFO, Khotang to be forwarded to MoFSC)	Not yet	Not yet
4	Manthali Ramechhap Road	Complete Revision made in EMAP are: (Total No. of trees to be cut down: 574 No. of trees to be planted under compensatory plantation: 14,350) Compensatory Plantation cost: Rs 13,41,725)	Submitted by PIC office	Permission received from the MOFSC in 2072-4-1, forest clearance agreement between DFO and PIC Office in 2072- 5-9 and letter received from DFO in 2072-5-10BS	396 tree were marked	259 Tress have been cut out of 396
5	Mechipul – Birtamod Road	Complete Total No. of trees to be cut down: 44, all private trees)	Not Applicable (NA)	Not Applicable (NA)	Not Applicable (NA)	Not Applicable (NA)

e) **Status of other local clearances**

19. Approval of layout plan for campsite and crusher plant is necessary. Similarly, local clearances for quarry site and burrow pit operation; operation of crusher plant is also required. Status of these clearance and approval is given in table below:

Table 3: Status of Local Clearances and approval

Clearance details	MR Road	HD Road	LB Road	EWB-Koshi Bridge-EWB Road	MB road
Construction Camp and	Established at Bitar (lease	Established at Nagi	Established at Jarayotar	Proposed at Jadaha,	Proposed at Birtamod

Storage site	agreement done), layout plan submitted and approved	Nunthala (lease agreement done), layout plan submitted and approved	(lease agreement done), layout plan submitted and approved	Udayapur (lease agreement done), layout plan submitted and approved	(lease agreement done), layout plan submitted and approved
Quarry sites	DDC approval taken (Tamakoshi and Sukajor Khola)	DDC approval taken (Dudhkoshi, Rawa Khola for sand), for stone (45+000, 52+000, 57+000, 63+000)	DDC Approval taken (Aurn river for sand, Shyamshila for stone)	DDC Approval taken (Chure region)	DDC approval taken Biring Khola
Crusher plant	established	Established at Nagi & Under establishment process Nunthala	Established at Leguwaghat	Established at Jadaha, Udayapur	NA

f) Awareness program

20. Awareness raising training has to be organized by each road packages before road construction. Budget for this has already been allocated and half day awareness raising orientation training program has been prepared and shared with each road packages. Participants of orientation training were field staff from contractors, supervisor and construction workers.

21. CSC is also providing backstopping support to RE team and field staffs of contractors of each road packages for complying environmental safeguards measure during road construction. Environment Specialist from CSC orientated them for the safe storage of construction materials, safe disposal of spoil, special care in handling hazardous waste and minimized adverse environmental impact during road construction.

22. During pre-feasibility and feasibility survey of roads, forests couldn't be avoided as almost all the road packages are continuation of existing roads. However, precautions have been taken to fell the trees within the formation width of the road only. Moreover, trees on the valley side are being saved even if they fall within the formation width subject to the enough width for smooth flow of vehicles.

g) Spoil management

23. Spoil disposal sites have been identified and provision of toe walls are given in the detail project design report. Spoils are being managed in specified disposal sites as far as possible. However, progress in spoil management is not encouraging. So far, toe walls have been constructed in chainages 7+300 of Manthali – Ramechhap road and Leguwaghat – Bhojpur road for spoil disposal management.

24. Even though cut and fill balance is an appropriate approach for spoil management but it is very difficult to manage spoil in the hilly terrain especially for Ramchhap- Manthali, Halesi-Diketel and Leguwaghat-Bhojpur road. It has been tried to manage spoils by disposing in identified & locate disposal sites 3+600, 7+300, 12+400, and providing toe walls as far as possible. Contractors has prepared spoil management plan to balance cut and fill volume with provision for appropriate haulage distance, spoil disposal sites and toe walls.

h) Drainage management

25. Adequate and appropriate numbers of drainage structures are being provided in order to minimize interference and impact on natural drainage pattern of the area. Likewise, surface water discharge into farmland or risky locations and blockage or diversion of natural channels due to construction of road and disposal of spoils has been avoided. No incidents of blockage of natural streams have been reported from these road packages.

i) Slope stabilization and bioengineering activities

26. Unstable slopes have been identified and the estimate has been done for bioengineering activities on actual cost estimate basis. No bioengineering activities have been carried out so far. However, Planning has been started for the bioengineering works for all road packages.

j) Rehabilitation of community infrastructures and cultural/religious sites

27. Cost estimate has been done to rehabilitate affected community infrastructures and cultural/religious sites. Rehabilitation cost has been included in the Resettlement Plan.

k) Quarry site management

28. Since road construction activities are still in early stage, quarries are not being operated as excavated materials during road construction are being used. For the use of quarry sites, Environmental Focal Persons prepares quarry operation plan and quarrying is done from the environmentally suitable and legally recognized sites.

l) Camp Site Management

29. Drinking water and sanitary facilities (toilets) are provided in the camps for contractor package. In camps, workers use fuel wood for cooking purpose which is obtained from local market.

m) Occupational health and safety

30. Occupational health and safety measures have been partially followed. Workers have been provided with safety gears like helmet, facemasks, goggles etc in all road packages. However, these items are in limited quantity and not sufficient for all the workers. Safety gears need to be provided to all workers and staff working at the construction site including the external supervisory staff during monitoring. They are oriented about the importance and use of safety gears. Workers are also given first aid kit with medicines. Group accidental insurance has been done for all the workers in all the road packages where construction work is going on.

n) Signboard placing (erection)

31. Signboards are erected at various places (spots) of the road with environmental information and notice.

o) Grievance Redress Committees

32. All grievances and concerns, particularly related to the implementation of the EMP, will be addressed by the DOR (PD) following the grievance redress mechanism provided in the EIA and IEE reports. In case the project Grievance Redress Committee (GRC) is unable to achieve resolution within the prescribed time, the matter will be forwarded to higher authority for final corrective actions. All grievances will be documented and reports made accessible to the public.

on request. The outcome of the redress shall form part of the semi-annual monitoring report to ADB.

33. To facilitate activities related with resettlement activities, the project has the provision to establish Sub-project Level committees (SLCs) and Grievance Redress Committee (GRC). According to this provision, SLCs must be formed in each Village Development Committees (VDCs)² and Municipalities by which the subproject road passes. GRCs are formed in the project district and headed by the Chief District Officer (CDO). The goal is to have a project local-level recourse to resolve grievances, and if they are not solved at this level, to have a district-level recourse.

34. Total 6 GRCs were formed in Seven Road Packages. In EWH-Koshi Bridge-EWH Road, four SLCs and one GRC in Saptari district, four SLCs and one GRC in Udayapur district, and one GRC in Sunsari district are formed and functional. Similarly, in Leguwaghat-Bhojpur Road, four SLCs and one GRC are formed and functional. Likewise in Halesi-Diktelroad three SLCs and one GRC are formed and functional. And Manthali-Ramechhap Road two SLCs and one GRC are formed and functional. These committees are providing considerable contribution in most of resettlement activities.

35. Regarding the environmental issues, no any grievances are registered or documented till date so far for any of the road packages under SRCP.

p) EMP implementation, monitoring and reporting

36. EMP implementation and monitoring in the SRCP road packages is observed relatively weak and given less priority by the contractors. Implementation monitoring format has been sent to sub-projects as given in Annex 5. However, reporting on environmental monitoring by contractors is not found regular. Environmental monitoring is also done by the CSC team during field visits.

37. The DOR PD is responsible for the regular monitoring and semi-annual reporting to ADB on the implementation of environmental mitigation measures described in the EMP and the findings of the environmental monitoring. ADB reviews the monitoring reports to determine if the safeguards requirements are satisfactorily met by DOR. CSC has conducted periodic site inspections to assess Contractor's compliance to the EMP, advice corrective measures, and report to DOR PD on the effectiveness of the mitigation measures and overall status of EMP implementation. Further, Contractors were asked to fill up the environmental compliance checklist that was provided earlier and submit back to CSC regularly. However, regular reporting from the Environmental Focal Persons from contractors is not found till date.

q) Disclosure of Environmental Assessments and Monitoring Reports

38. ADB and DOR have disclosed in their respective websites the EIA Report IEE reports in compliance to SPS 2009 information disclosure requirements. Semi-annual monitoring reports will be submitted by DOR for disclosure on the ADB website. Summary of the CSC's environmental monitoring reports will also be disclosed in DOR website periodically.

r) Monitoring of Safeguards Implementation

39. Geo-Environment and Social Unit (GESU) of DOR, assisted by a Resettlement Specialist and Environmental Expert of CSC is responsible for internal monitoring of the social, resettlement and environment aspects of the Project. External professionals/individuals/researchers will be recruited by DOR to carry out independent semiannual review of combined IPP and RP implementation and Biodiversity Conservation activities under the EMP. DoR PD, assisted by Environment Specialist of CSC, submit the semi-annual monitoring reports to ADB.

5. OVERALL COMPLIANCE WITH EMP

40. Table 4 given below shows the overall compliance status of EMP in all road packages of SRCP.

Table 4: Overall compliance status of SRCP road projects

No.	Road Package Name	EMP Part of Contract Documents (Y/N)	EMP Being Implemented (Y/N)	Status of Implementation (Excellent/ Satisfactory/ Partially Satisfactory/ Below Satisfactory)	Action Proposed and Additional Measures Required
1.	Manthali – Ramechhap Road	Y	Y	Partially Satisfactory	follow up for further necessary improvement
2.	Halesi – Diktel Road (I, II and III)	Y	Y	Partially Satisfactory	follow up for further necessary improvement
3.	Leguwaghat – Bhojpur Road	Y	Y	Satisfactory	follow up for further necessary improvement
4.	East West Highway – Koshi Bridge – East West Highway	Y	Y	Partially Satisfactory	follow up for further necessary improvement
5.	Mechipul – Birtamod Road	Y	Y	Partially Satisfactory	follow up for further necessary improvement

6. ISSUES AND WAY FORWARD

41. Table 5 shows the main environmental issues and way forward for the effective implementation of environmental safeguard measures. Reasons behind the delays in Environmental Safeguards implementation are given below:

- Late recruitment of CSC team and field personnel
- Delay in approval of IEE/EIA report The main reason behind the delay on ES implementation was delay in approval of IEE/EIA reports.
- Revision in EMAP of IEE/EIA report to which number of trees to be cut down vary significantly.
- Mega –Earthquake – April 2015, 25th April, 2015 indeed emerged as a devastating day for Nepal. The 7.8 Richter scale's earthquake with its epicentre in Barpak, Gorkha district triggered the unwholesome damages on the foundation of social institutions and national economy, which has caused the country come to a point of stagnation. According to the contractors and beneficiary groups of the project the whole construction process was forced to be delayed since there was a huge scarcity of human resources, people were forced to migrate into safe place, and difficulty in delivery of other construction materials.

42. Other specific issues relating to environmental compliance in road project and corrective actions to be taken are as given in table 5 below:

Table 5: Issues and corrective measures

S.N.	Issues	Corrective Measures
1.	Irregular presence of Environmental Focal Person on the project site and reporting (environmental monitoring checklist)	<ul style="list-style-type: none"> • Instruct contractors to assure the regular presence and involvement of EFPs on project site for the environmental compliance
2.	Lengthy government procedure for approval of tree cutting, quarry sites	<ul style="list-style-type: none"> • regular follow up to government line agency
3.	Delay in construction activities has further affected the implementation of safeguards measures	<ul style="list-style-type: none"> • instruct contractors to speed up the construction work as per agreed schedule
4.	Compensatory Plantation and Bio-engineering cost is not sufficient as provided.	<ul style="list-style-type: none"> • Allocation of sufficient budget as per actual need and revision in EMAP
5.	Spoil disposal	<ul style="list-style-type: none"> • Preparation of spoil management plan and its strict implementation during the road construction
6.	Implementation of bioengineering work for slope protection	<ul style="list-style-type: none"> • Bioengineer expert at the central level to provide technical support for bioengineering activities in each road packages and assigning a focal person for this work in each package.
7.	Delay in forest clearance Process in HD road only	<ul style="list-style-type: none"> • Coordination with DFO to obtain forest clearance for tree cutting.
8.	Compensatory and roadside plantation	<ul style="list-style-type: none"> • For compensatory (forest & private) and road side plantation, plantation plan should be strictly followed by the each

		road packages.
9.	For compensatory (forest & private) and road side plantation, plantation plan should be strictly followed	<ul style="list-style-type: none"> • Regular monthly meeting, field level monitoring and reporting by safeguard desk coordinator. • Organizing safeguard orientation training by CSC
10.	Erection of signboards	<ul style="list-style-type: none"> • Necessary signboards should be erected in construction sites
11.	Occupational health and safety	<ul style="list-style-type: none"> • Sufficient safety gears and first aid kit with medicines should be provided to workers by contractor.

Annex

Annex 1
SASEC Road Connectivity Project
Project Log Frame; Environmental Safeguards

Title of the Project: SASEC Road Connectivity Project				
Principal Activities: Environmental Clearance and implementation of safeguards measures				
SN	Activities	Objectively Verification Indicators	Source of Verification	Risk Assumption
B 2	Environmental Clearance			Present
	B2.1 Approval for campsite establishment	XX no. of layout plan of campsites approved	MPR, QPR, Semiannual report, field reports, photographs	project is able to observe force majeure (earthquake, strikes, monsoon constitution of
	B2.2 Approval for Storage site, stockpiling site, tipping areas,	XX no. layout plan of Storage site, stockpiling site, tipping areas approved	MPR, QPR, Semiannual report, field reports, photographs	Nepal is not formalized and results on civil unrest
	B2.3 Permission taken for quarry site operation	approval letter from concerned government agencies	Approval letters, MPR, QPR, Semiannual report	Monsoon do not results in landslides and blocking access to project activities and suspension of community mobility
	B2.4 crusher plant establishment	XX no. of crusher plant established	field reports, photographs	Political crisis does not worsen as to make local governance negligible and inactive
	B2.3 Consultation, awareness and sensitization activities on environmental safeguards measures with (a) contractor, laborer (b) local community people	XX no. of meetings done with contractor and laborers XX no. of orientation done with contractor and laborers XX project leaflet, and project guidelines developed XX no. of community consultation/awareness activities done	Field reports, MPR, Minutes Photographic documents	
	Implementation of safeguards measures			
	B2.4 develop and provide Institutional Set up chart to PD and ADB, NRM for implementation of Environmental Safeguards Measures	Organizational set up with given role and responsibilities developed	Communication with PD and ADB, NRM, MPR	
	B2.5 Implementation of compensatory Plantation, Bio-engineering, Slope protection and other safeguards measures	XX No. of trees planted, XX quantity of bioengineering works and slope protection (location and area) done	Field reports, MPR, Photographic documents	
	B2.6 Monitoring of safeguard measures and compliances	XX No. of monitoring visit and monitoring reports compiled	MPR, QPR, Semiannual report, field reports	

Annex 1a: Status of Environmental Safeguard Planning Status

[illegible]

Annex 1b: Environmental Safeguard Implementation Status

Reporting period:
June, 2015

Name of Project: SASEC Road Connectivity Project (SRCP)

S . N o .		Name of Subproject		Compliance to Environmental Management Plan*										Grievances			Corrective Action Plans are prepared and implemented (Y/N)	Environmental reporting is maintained (Y/N)	Remarks		
				Physical			Biological			Socio-economic				Nos of grievances documented	No of grievances resolved	No of grievances under processing					
				Spoil Management compliance in %)**	Land slide protection with Bio-engineering (compliance in %)**	Drainage Management (compliance in %)**	Others as per EMP (specific)	Compensatory Plantation		Fire wood use for cooking and heating (Y/N)	Others as per EMP (specific)	Occupational Health and Safety								Community structures are reconstructed / (progress in % of total estimated work)***	Others as per EMP (specific)
								Tar get (Nos.)	Repl ante (Nos.)			Safety Gea rs are suffi cien t and use d (Y/N)	Lab ors are ins ure d (Y/N)								
1		insignificant progress in earthw	No	70%	No	87, 75 0	No	Y	No	No	Y	Y	Y	Y	Y	No	No	Yes			

	Work																			
2	Laguna ghat - Bhojpur Road	80%	No	85%	No	6.8 88	No	Y	No	Y	Y	Y	not yet started	No	No	No	No	No	Yes	
3	Halesi - Diktel Road (all three packages)	65%	No	65%	No	20, 02 5	No	Y	No	Y	Y	Y	not yet started	No	No	No	No	No	Yes	
4	Manthali Ramechhap Road	70%	No	65%	No	14, 35 0	No	Y	No	Y	Y	Y	not yet started	No	No	No	No	No	Yes	
5	Mechipadi - Barfani Road	90%	No	70%	No	22 0	No	Y	No	Y	Y	Y	not yet started	No	No	No	No	No	Yes	

Annex 2: Environmental Management Cost (NRs)

SASEC Road Connectivity Project
Details of Provisional Sums (ICB and NCB Contracts)

1. Provisional Sums of EWH						as provisioned in IEE/EIA report
	Description	Unit	Quantity	In Figure	Amount(NRs)	
9.01	Environmental mitigation					
9.01 (a)	Dust & noise mitigation measures	PS	1	300,00	300,00	compensatory plantation 2,701,170
9.01 (b)	Personal Protective equipment	PS	1	2,898,000	2,898,000	water sprinkling and sound barrier 300,000
9.01 (d)	Construction of check post including accommodation for 20 persons	PS	1	3,000,000	3,000,000	Personal Protective Equipment (PPE) Rs. 5,796,000
9.01 (e)	Supply pickup truck	PS	1	3,000,000	3,000,000	Checkpoint and patrolling pickup Rs. 6,000,000
9.02	Off-site verification testing (not specified in the specification) of materials as required by the Engineer	PS	1	600,000	600,000	Bioengineering measures Rs. 4,282,180
9.03	Relocation of services as instructed by the Engineer	PS	1	3,700,000	3,700,000	
9.04	Social compliance and safe guards as instructed by the Engineer	PS	1	475,000	475,000	
9.05	Bio engineering works(structure & protection works)	PS	1	1,837,320	1,837,320	
9.06	Renovation of existing DOR buildings for office and accommodation at Dharan	PS	1	1,000,000	1,000,000	
Total					16,810,320	

For Bridge Works of EWH				
6.01	Repair and rehabilitation of existing bridges	PS	1	3,205,578.56
				3,205,578.56

2. Provisional Sums of HD 1					as provisioned in IEE/EIA report	
	Description	Unit	Quantity	In Figure	Amount(NRs)	
9.01	Environmental mitigation					Campsite establishment & reinstatement 575,000.00
9.01 (a)	Dust & noise mitigation measures	PS	1	70,000	70,000	Capacity building 100,000.00
9.01 (b)	Personal Protective equipment	PS	1	276,000	276,000	Safety Gadgets/facilities 10,35,000.00
9.02	Off-site verification testing (not specified in the specification) of materials as required by the Engineer	PS	1	70,000	70,000	Reinstatement of quarry sites at the completion of work 200,000.00
9.03	Relocation of services as instructed by the Engineer	PS	1	300,000	300,000	Excess spoil materials (safe disposal) 8,312,468.84
9.04	Social compliance and safe guards as instructed by the Engineer	PS	1	120,000	120,000	Relocation of public utilities (Drinking water supply lines, electric poles, irrigation canal etc.) 700,000.00
9.05	Bio engineering works(structure & protection works)	PS	1	360,000	360,000	Road safety measures(Road accidents) 2,185,447.61
Total					1,196,000	Replantation (at the ratio of 1:25 and 5 years maintenance cost) 350,625.00
						Bioengineering measures 11,822,020.00

3. Provisional Sums of HD 2					
	Description	Unit	Quantity	In Figure	Amount(NRS)
9.01	Environmental mitigation				
9.01 (a)	Dust & noise mitigation measures	PS	1	70,000	70,000
9.01 (b)	Personal Protective equipment	PS	1	276,000	276,000
9.02	Off-site verification testing (not specified in the specification) of materials as required by the Engineer	PS	1	70,000	70,000
9.03	Relocation of services as instructed by the Engineer	PS	1	300,000	300,000
9.04	Social compliance and safe guards as instructed by the Engineer	PS	1	120,000	120,000
9.05	Bio engineering works(structure & protection works)	PS	1	360,000	360,000
Total					1,196,000

4. Provisional Sums of HD/3					
	Description	Unit	Quantity	In Figure	Amount(NRS)
9	Provisional sum for Environmental Mitigation Measures				
9.01	Environmental mitigation				
9.01 a)	Dust and noise mitigation measures	PS	1	60000	60000
9.01 b)	Personal protective equipment	PS	1	276000	276000
9.02	Off-site verification testing (not specified in the specification) of materials as required by the Engineer	PS	1	60000	60000

9.05	Bio engineering works(structure & protection works)	PS	1	1,966,410	1,966,410	Road safety measures(Road accidents)	6,304,528.10
9.06	Construction of the buildings with Land or Renovation of existing building for office (type 3) and accommodation (type 2) for Employer as instructed by the Engineer	PS	1	1,500,000	1,500,000	Replantation (at the ratio of 1:25 and 5 years maintenance cost)	109,862.50
Total					7,801,410	Bioengineering measures	21,877,775.15
						TOTAL COST (NRs.)	52,719,299.48

6. Provisional Sums of MB/01

	Description	Unit	Quantity	In Figure	Amount(NRS)	as provisioned in IEE/EIA report
9.01	Environmental mitigation					Campsite establishment & reinstatement 575,000.00
9.01 (a)	Dust & noise mitigation measures	PS	1	100,000	100,000	Capacity building 100,000.00
9.01 (b)	Personal Protective equipment	PS	1	621,000	621,000	Safety Gadgets /facilities 621,000.00
9.02	Off-site verification testing (not specified in the specification) of materials as required by the Engineer	PS	1	200,000	200,000	Reinstatement of quarry sites at the completion of work 200,000.00
9.03	Relocation of services as instructed by the Engineer	PS	1	1,000,000	1,000,000	Excess spoil materials (safe disposal) 72,096.81
9.04	Social compliance and safe guards as instructed by the Engineer	PS	1	150,000	150,000	Relocation of public utilities (Drinking water supply lines, electric poles. 1,000,000.00

						irrigation canal etc.)	
9.05	Bio engineering works(structure & protection works)	PS	1	364,710	364,710	Road safety measures(Road accidents)	716,393.25
9.06	Construction of the buildings with Land or Renovation of existing building for office (type 3) and accommodation (type 2) for Employer as instructed by the Engineer	PS	1	2,200,000	2,200,000	Replantation (at the ratio of 1:25 and 5 years maintenance cost)	18,700.00
Total					4,635,710	TOTAL COST (NRs.)	3,303,190.06

7.Provisional Sums of MR/01						as provisioned in IEE/EIA report	
	Description	Unit	Quantity	In Figure	Amount(NRs)		
9.01	Environmental mitigation					Campsite establishment & reinstatement	575,000.00
9.01 (a)	Dust & noise mitigation measures	PS	1	100,000	100,000	Capacity building	100,000.00
9.01 (b)	Personal Protective equipment	PS	1	828,000	828,000	Safety Gadgets/facilities	517,500.00
9.02	Off-site verification testing (not specified in the specification) of materials as required by the Engineer	PS	1	200,000	200,000	Reinstatement of quarry sites at the completion of work	200,000.00
9.03	Relocation of services as instructed by the Engineer	PS	1	500,000	500,000	Excess spoil materials (safe disposal)	1,598,481.50

9.04	Social compliance and safe guards as instructed by the Engineer	PS	1	130,000	130,000	Relocation of public utilities (Drinking water supply lines, electric poles, irrigation canal etc.)	700,000.00
9.05	Bio engineering works(structure & protection works)	PS	1	400,530	400,530	Road safety measures(Road accidents)	613,580.32
9.06	Construction of the buildings with Land or Renovation of existing building for office (type 3) and accommodation (type 2) for Employer as instructed by the Engineer	PS	1	1,500,000	1,500,000	Replantation (at the ratio of 1:25 and 5 years maintenance cost)	467,500.00
Total					3658530	Bioengineering measures	32,26,600.00

Annex 3: Status of Environmental Safeguard Compliances

S.N.	Road Package	status	Environmental Compliance Measures	Compliance Status
1.	EWB-Koshi Bridge- EWB Road	Under construction	<p>Camp site Layout preparation and approval</p> <ul style="list-style-type: none"> • Camp site Layout plan is prepared and approved. Camp site is provisioned with : <ul style="list-style-type: none"> • cooking gas, food items, electricity, water supply, waste management, transportation, and medical facilities • Effective barricading of the camp area for unauthorized access • Camp site is located in chahar type of land (non-productive) • Camp site is about 150 m far from the Jahada settlement. However, no any adverse impacts on social, physical and biological environment are expected from the existing camp. • To avoid the conflict on local resources uses, contractor has provisioned the camp with its own water supply, sanitation and cooking energy. • Both the camps are facilitated with well spaced/equipped kitchen and dining facilities restrict them from using firewood for cooking • Regular monitoring of their activity by the Environmental Focal Person • No gvt. and community forest in the 1 km periphery. • Underground water only after proper treatment is used for drinking purpose. • A 12 m high overhead tank with 6000 liters capacity is under construction. • Both the camps are facilitated with adequate toilet facilities • 6 safety tank/ soak pit toilets in Sr. staff quarter and 4 toilet in Jr. staff quarter are of adequate sizes (3 ft 3 inch width, 7 ft depth) • Camp sites are provided with LPG to avoid firewood dependency. • Solid wastes are segregated as decomposable and non decomposable wastes before disposal. • Sewages from the daily activities are treated well before its disposal. • Proper management of the wastes generated from the demolition of the built structures shall be taken into account. Restoration works of the land shall be 	partially satisfactory

S.N.	Road Package	status	Environmental Compliance Measures	Compliance Status
			<p>done after the completion of the construction work.</p> <ul style="list-style-type: none"> • Sewage is treated well before the disposal into the river courses. • All the construction related waste is disposed in designated/safe places in direct consultation with the local people and stakeholder authorities <p>Lease agreement with land owner in case of private land and permission from concerned agency (VDC/Municipality Office) in case of public land</p> <ul style="list-style-type: none"> • Land lease agreement has been done with the respective land owners <p>Removal of Vegetation Clearance including tree cutting and land clearing activities</p> <ul style="list-style-type: none"> • Avoid tree felling as far as possible to ensure the minimum loss. Vegetation clearance (as minimum as possible) shall be done after the completion of "Centre Line Fixing" of the road • After required approval of Tree cutting, marking process is going on. • Vegetation clearance shall be done in direct surveillance of DFO • Shifting of cultural properties like small temples/shrines coming within the road land width to adjacent areas in consultation with local community. • Inventory of all public utilities like power transmission cables, telephone cables, water/sewerage lines, drains, tube wells, etc., falling within road land width and arrangement for relocation/shifting to adjacent areas in consultation with the respective agencies/ authorities. <p>Establishment of temporary site office and material storage areas</p> <ul style="list-style-type: none"> • Temporary site office with accommodation facilities is under constructed at Jahada -8 and approval has been taken. • Land lease agreement has been done with all the land owners • No public/gvt land has been taken on lease 	

S.N.	Road Package	status	Environmental Compliance Measures	Compliance Status
			<ul style="list-style-type: none"> • The temporary office and storage area for construction works is located away from human settlement areas (minimum 500 m) and forest areas (minimum 1 km). Proximity of Jahada settlement is about 200m from the temporary office /storage area. However, proper mitigation measures (fencing of the construction area, water sprinkling in the dust prone areas, use of resources such as: water, fuels from the sources other than the resources being used by the locals, etc) has been done by the contractor to avoid conflict between local people and the contractor. • Storage yard is located in chahar land (non-productive) • Land lease agreement has been done with the respective land owners • Restoration of the leased land shall be done after completion of construction works • Spillage and leakage of oil/lubricants are readily be cleaned/ removed immediately. • Used oils shall be stored separately and shall be sold to the scavengers. • Storage tanks are shield and informative boards are kept. • Underground water is used with proper treatment for drinking purpose. • A 12 m high overhead tank with 6000 liters capacity is constructed. • Both the camps are facilitated with adequate toilet facilities (10 in numbers with 3 feet 3 inch wide and 7 feet deep) • Proper care shall be provided in storage of fuel tanks, oil and greases • Regular monitoring and inspection to ensure "No leakage" of flammable and hazardous materials from well trained personnel • Immediate clean up of the leaked oil and flammable liquids • Proper fencing of the storage areas • Post placards clearly marking "fire escape route" and emergency staging area" and keep the area clear of all materials, especially hazardous and inflammable ones • Install a direct phone line with nearby Fire Department 	

S.N.	Road Package	status	Environmental Compliance Measures	Compliance Status
			<ul style="list-style-type: none"> • Install siren in different locations and post "No Smoking" sign in all fire hazardous areas <p>Quarry Site/Borrow pit construction materials, i.e., boulders, aggregates, earth and water for construction work</p> <ul style="list-style-type: none"> • Quarry sites have been selected as per the EIA report • Adequate coordination has been done with Material Engineer/RE office and DDC office. • No material shall be burrowed unless it is approved by authorized bodies • Approval of 8 quarry sites have been taken besides one stock yard at Fatepur (total sites=9) • Burrow areas are demarcated with visible ribbons and informative sign boards shall be placed in different locations during excavation. • Proposed burrow areas are rich in boulders and gravels so topsoil restoration is not applicable. However bank protection works are be taken into account. • No agricultural land is proposed for the material burrowing purpose. • Required water for construction is managed from the sources other than the resources currently being used by the local people. • A 12 m high overhead tank with 6000 liters capacity is constructed <p>Operation of crusher plant</p> <ul style="list-style-type: none"> • Crusher plant is located in chahar land (non-productive). Proximity of Jahada settlement is within 200 m distance. However proper mitigation measures are proposed minimize adverse impacts • Land lease agreement has been done with the respective land owners • All the construction works area are fenced for unauthorized access • Jute roofing is done for dust control • PPEs are provided for all the workers 	

S.N.	Road Package	status	Environmental Compliance Measures	Compliance Status
			<ul style="list-style-type: none"> • water sprinkling in the dust prone areas has been proposed • Vehicular load and speed is controlled • Regular inspection has been be done. • Speed and load control for the materials carrying vehicles • Prohibition of night time operation to control the noise pollution as Jatada village is closely located • Covering of the materials during transporting the materials • Informative sign posts at different locations <p>Occupational Health and Safety</p> <ul style="list-style-type: none"> • Adequate PPEs shall be provided for the workers • Training is provided to workers for the effective use of PPEs. <p>Mobilization of construction machineries and vehicles</p> <ul style="list-style-type: none"> • Regular inspection and maintenance of the vehicles • Control of oil and grease leakage • All the vehicles carrying materials are covered • Regular monitoring and take necessary corrective measures if any spills are recorded • Regular monitoring to ensure no child labor and pregnant woman in construction work • Awareness program for the locals about not involving "Children & Pregnant Women at Work" • Ear plugs and mufflers are provisioned for the workers at high noise • Rotation of Work Shift to avoid long term exposure. • Underground water is used for drinking purpose after treatment. • A 12 m high overhead tank with 6,000 liters capacity is under construction. • Both the camps are facilitated with adequate toilet facilities (10 in numbers 	

S.N.	Road Package	status	Environmental Compliance Measures	Compliance Status
			<p>with 3 feet 3 inch wide and 7 feet deep)</p> <ul style="list-style-type: none"> • Health kits availability in the camp sites with adequate medical facilities for first aid treatment. • Health check up camp is operated twice in a year in coordination with District Health Post • Training is provided to the workers about health, sanitation and hygiene 	
2	Leguwaghat – Bhojpur Road	Under construction	<p>Camp site Layout preparation and approval</p> <ul style="list-style-type: none"> • Camp site Layout plan is prepared and approved. Camp site is provisioned with : <ul style="list-style-type: none"> • cooking gas, food items, electricity, water supply, waste management, transportation, and medical facilities • Effective barricading of the camp area for unauthorized access • To avoid the conflict on local resources uses, contractor has provisioned the camp with its own water supply, sanitation and cooking energy. • Both the camps are facilitated with well spaced/equipped kitchen and dining facilities restrict them from using firewood for cooking. • Regular monitoring of their activity by the Environmental Focal Person • No govt. and community forest in the 1 km periphery. • Drinking water facility available from local sources • Facilitated with adequate toilet facilities • Camp sites are provided with LPG to avoid firewood dependency. • Solid wastes are segregated as decomposable and non decomposable wastes before disposal. • Sewages from the daily activities are treated well before its disposal. • Proper management of the wastes generated from the demolition of the built structures shall be taken into account. Restoration works of the land shall be done after the completion of the construction work. • All the construction related waste is disposed in designated/safe places in 	

S.N.	Road Package	status	Environmental Compliance Measures	Compliance Status
			<p>direct consultation with the local people and stakeholder authorities</p> <p>Lease agreement with land owner in case of private land and permission from concerned agency (VDC/Municipality Office) in case of public land</p> <ul style="list-style-type: none"> Land lease agreement has been done with the respective land owners <p>Removal of Vegetation Clearance including tree cutting and land clearing activities</p> <ul style="list-style-type: none"> Avoid tree felling as far as possible to ensure the minimum loss. Vegetation clearance (as minimum as possible) shall be done after the completion of "Centre Line Fixing" of the road Vegetation clearance shall be done in direct surveillance of DFO Shifting of cultural properties like small temples/shrines coming within the road land width to adjacent areas in consultation with local community. Inventory of all public utilities like power transmission cables, telephone cables, water/sewerage lines, drains, tube wells, etc., falling within road land width and arrangement for relocation/shifting to adjacent areas in consultation with the respective agencies/ authorities. <p>Establishment of temporary site office and material storage areas</p> <ul style="list-style-type: none"> Approval has been taken for construction of Temporary site office with accommodation facilities and Constructed in Jarayotar at Chainage 7+000. Land lease agreement has been done with all the land owners Proper mitigation measures (fencing of the construction area, water sprinkling in the dust prone areas, use of resources such as: water, fuels from the sources other than the resources being used by the locals, etc) has been done by the contractor to avoid conflict between local people and the contractor. Land lease agreement has been done with the respective land owners 	

S.N.	Road Package	status	Environmental Compliance Measures	Compliance Status
			<ul style="list-style-type: none"> • Restoration of the leased land shall be done after completion of construction works • Spillage and leakage of oil/lubricants are readily be cleaned/ removed immediately. • Used oils shall be stored separately and shall be sold to the scavengers. • Proper care shall be provided in storage of fuel tanks, oil and greases • Regular monitoring and inspection to ensure "No leakage" of flammable and hazardous materials from well trained personnel • Immediate clean up of the leaked oil and flammable liquids • Proper fencing of the storage areas <p>Quarry Site/Borrow pit construction materials, i.e., boulders, aggregates, earth and water for construction work</p> <ul style="list-style-type: none"> • Quarry sites have been selected as per the IEE report • Adequate coordination has been done with Material Engineer/RE office and DDC office. • No material shall be borrowed unless it is approved by authorized bodies • Required water for construction is managed from the sources other than the resources currently being used by the local people. <p>Operation of crusher plant</p> <ul style="list-style-type: none"> • Crusher plant is located in near Arun river, proper mitigation measures are proposed minimize adverse impacts • Land lease agreement has been done with the respective land owners • All the construction works area are fenced for unauthorized access • PPEs are provided for all the workers • water sprinkling in the dust prone areas has been proposed • Vehicular load and speed is controlled • Regular inspection has been done. 	

S.N.	Road Package	status	Environmental Compliance Measures	Compliance Status
			<ul style="list-style-type: none"> • Speed and load control for the materials carrying vehicles • Covering of the materials during transporting the materials • Informative sign posts at different locations <p>Occupational Health and Safety</p> <ul style="list-style-type: none"> • Adequate PPEs shall be provided for the workers • Training is provided to workers for the effective use of PPEs. <p>Mobilization of construction machineries and vehicles</p> <ul style="list-style-type: none"> • Regular inspection and maintenance of the vehicles • Control of oil and grease leakage • All the vehicles carrying materials are covered • Regular monitoring and take necessary corrective measures if any spills are recorded • Regular monitoring to ensure no child labor and pregnant woman in construction work • Awareness program for the locals about not involving "Children & Pregnant Women at Work" • Ear plugs and mufflers are provisioned for the workers at high noise • Rotation of Work Shift to avoid long term exposure. • Underground water is used for drinking purpose after treatment. • Health kits availability in the camp sites with adequate medical facilities for first aid treatment. • Health check up camp is operated twice in a year in coordination with District Health Post • Training is provided to the workers about health, sanitation and hygiene 	
3.	Manthali – Ramechhap Road	Under construction	<p>Camp site Layout preparation and approval</p> <ul style="list-style-type: none"> • Camp site Layout plan is prepared and approved. Camp site is provisioned 	

S.N.	Road Package	status	Environmental Compliance Measures	Compliance Status
			<p>with :</p> <ul style="list-style-type: none"> • cooking gas, food items, electricity, water supply, waste management, transportation, and medical facilities • To avoid the conflict on local resources uses, contractor has provisioned the camp with its own water supply, sanitation and cooking energy. • Camps are facilitated with well spaced/equipped kitchen and dining facilities restrict them from using firewood for cooking. • Regular monitoring of their activity by the Environmental Focal Person. • Facilitated with adequate toilet facilities <p>Lease agreement with land owner in case of private land and permission from concerned agency (VDC/Municipality Office) in case of public land</p> <ul style="list-style-type: none"> • Land lease agreement has been done with the respective land owners <p>Removal of Vegetation Clearance including tree cutting and land clearing activities</p> <ul style="list-style-type: none"> • Avoid tree felling as far as possible to ensure the minimum loss. Vegetation clearance (as minimum as possible) shall be done after the completion of "Centre Line Fixing" of the road • Vegetation clearance shall be done in direct surveillance of DFO • Shifting of cultural properties like small temples/shrines coming within the road land width to adjacent areas in consultation with local community. • Inventory of all public utilities like power transmission cables, telephone cables, water/sewerage lines, drains, tube wells, etc., falling within road land width and arrangement for relocation/shifting to adjacent areas in consultation with the respective agencies/ authorities. <p>Establishment of temporary site office and material storage areas</p> <ul style="list-style-type: none"> • Land lease agreement has been done with all the land owners 	

S.N.	Road Package	status	Environmental Compliance Measures	Compliance Status
			<ul style="list-style-type: none"> • Proper mitigation measures (fencing of the construction area, water sprinkling in the dust prone areas, use of resources such as: water, fules from the sources other than the resources being used by the locals, etc) has been done by the contractor to avoid conflict between local people and the contractor. • Land lease agreement has been done with the respective land owners • Used oils shall be stored separately and shall be sold to the scavengers. • Proper care shall be provided in storage of fuel tanks, oil and greases • Regular monitoring and inspection to ensure "No leakage" of flammable and hazardous materials from well trained personnel <p>Quarry Site/Borrow pit construction materials, i.e., boulders, aggregates, earth and water for construction work</p> <ul style="list-style-type: none"> • Quarry sites have been selected as per the JEE report • Adequate coordination has been done with Material Engineer/RE office and DDC office. • Required water for construction is managed from the sources other than the resources currently being used by the local people. <p>Operation of crusher plant</p> <ul style="list-style-type: none"> • Crusher plant is located in the proximity of Tamakoshi river Proximity of settlement is far from 500 m distance, proper mitigation measures are proposed minimize adverse impacts • Land lease agreement has been done with the respective land owners • All the construction works area are fenced for unauthorized access • PPEs are provided for all the workers • water sprinkling in the dust prone areas has been proposed • Vehicular load and speed is controlled • Regular inspection has been done. 	

S.N.	Road Package	status	Environmental Compliance Measures	Compliance Status
			<ul style="list-style-type: none"> • Speed and load control for the materials carrying vehicles • Covering of the materials during transporting the materials <p>Occupational Health and Safety</p> <ul style="list-style-type: none"> • Adequate PPEs shall be provided for the workers • Training is provided to workers for the effective use of PPEs. <p>Mobilization of construction machineries and vehicles</p> <ul style="list-style-type: none"> • Regular inspection and maintenance of the vehicles • Control of oil and grease leakage • All the vehicles carrying materials are covered • Regular monitoring and take necessary corrective measures if any spills are recorded • Regular monitoring to ensure no child labor and pregnant woman in construction work • Awareness program for the locals about not involving "Children & Pregnant Women at Work" • Ear plugs and mufflers are provisioned for the workers at high noise • Health kits availability in the camp sites with adequate medical facilities for first aid treatment. • Health check up camp is operated twice in a year in coordination with District Health Post • Training is provided to the workers about health, sanitation and hygiene <p>Camp site Layout preparation and approval</p> <ul style="list-style-type: none"> • Camp site Layout plan is prepared and approved and Constructed at Nagi & Nunthala. Camp site is provisioned with cooking gas, food items, electricity, water supply, waste management, transportation, and medical facilities • Effective barricading of the camp area for unauthorized access • To avoid the conflict on local resources uses, contractor has provisioned the 	
4	Halesi Diketel Road	Under construction		

S.N.	Road Package	status	Environmental Compliance Measures	Compliance Status
			<p>camp with its own water supply, sanitation and cooking energy.</p> <ul style="list-style-type: none"> Both the camps are facilitated with well spaced/equipped kitchen and dining facilities restrict them from using firewood for cooking. Regular monitoring of their activity by the Environmental Focal Person Both the camps are facilitated with adequate toilet facilities <p>Lease agreement with land owner in case of private land and permission from concerned agency (VDC/Municipality Office) in case of public land</p> <ul style="list-style-type: none"> Land lease agreement has been done with the respective land owners <p>Removal of Vegetation Clearance including tree cutting and land clearing activities</p> <ul style="list-style-type: none"> Avoid tree felling as far as possible to ensure the minimum loss. Vegetation clearance (as minimum as possible) shall be done after the completion of "Centre Line Fixing" of the road Request letter submitted to District Forest Office for tree cutting and vegetation clearance and approval for the same. Shifting of cultural properties like small temples/shrines coming within the road land width to adjacent areas in consultation with local community. Inventory of all public utilities like power transmission cables, telephone cables, water/sewerage lines, drains, tube wells, etc., falling within road land width and arrangement for relocation/shifting to adjacent areas in consultation with the respective agencies/ authorities. <p>Establishment of temporary site office and material storage areas</p> <ul style="list-style-type: none"> Approval is taken for establishment of temporary site office with accommodation facilities Land lease agreement has been done with the respective land owners Proper fencing of the storage areas 	

S.N.	Road Package	status	Environmental Compliance Measures	Compliance Status
			<p>Quarry Site/Borrow pit construction materials, i.e., boulders, aggregates, earth and water for construction work</p> <ul style="list-style-type: none"> • Quarry sites have been selected as per the IEE report • Adequate coordination has been done with Material Engineer/RE office and DDC office. • Required water for construction is managed from the sources other than the resources currently being used by the local people. <p>Operation of crusher plant</p> <ul style="list-style-type: none"> • Crusher plant is located in charhar land (non-productive). Proximity of settlement is far from 200 m distance. • Land lease agreement has been done with the respective land owners • All the construction works area are fenced for unauthorized access • water sprinkling in the dust prone areas has been proposed • Speed and load control for the materials carrying vehicles • Covering of the materials during transporting the materials <p>Occupational Health and Safety</p> <ul style="list-style-type: none"> • Adequate PPEs provided for the workers • Training is provided to workers for the effective use of PPEs. <p>Mobilization of construction machineries and vehicles</p> <ul style="list-style-type: none"> • Regular inspection and maintenance of the vehicles • Control of oil and grease leakage • All the vehicles carrying materials are covered • Regular monitoring and take necessary corrective measures if any spills are recorded • Ear plugs and mufflers are provisioned for the workers at high noise 	

S.N.	Road Package	status	Environmental Compliance Measures	Compliance Status
			<ul style="list-style-type: none"> • Rotation of Work Shift to avoid long term exposure. • Health kits availability in the camp sites with adequate medical facilities for first aid treatment. • Training is provided to the workers about health, sanitation and hygiene 	
5	Mechipul Birtamod Road	Under construction	<p>Camp site Layout preparation and approval</p> <ul style="list-style-type: none"> • Camp site Layout plan is prepared and approved. • Effective barricading of the camp area for unauthorized access. • To avoid the conflict on local resources uses, contractor has provisioned the camp with its own water supply, sanitation and cooking energy. • Camps are facilitated with well spaced/equipped kitchen and dining facilities restrict them from using firewood for cooking. • Regular monitoring of their activity by the Environmental Focal Person • All the construction related waste is disposed in designated/safe places in direct consultation with the local people and stakeholder authorities <p>Lease agreement with land owner in case of private land and permission from concerned agency (VDC/Municipality Office) in case of public land</p> <ul style="list-style-type: none"> • Land lease agreement has been done with the respective land owners <p>Establishment of temporary site office and material storage areas</p> <ul style="list-style-type: none"> • Temporary site office established with accommodation facilities and approval has been taken. • Land lease agreement has been done with all the land owners • Storage yard is located in chahar land (non-productive) • Land lease agreement has been done with the respective land owners • Restoration of the leased land shall be done after completion of construction works • Both the camps are facilitated with adequate toilet facilities • Proper care shall be provided in storage of fuel tanks, oil and greases 	

S.N.	Road Package	status	Environmental Compliance Measures	Compliance Status
			<ul style="list-style-type: none"> • Proper fencing of the storage areas <p>Quarry Site/Borrow pit construction materials, i.e., boulders, aggregates, earth and water for construction work</p> <ul style="list-style-type: none"> • Quarry sites have been selected as per the IEE report • Adequate coordination has been done with Material Engineer/RE office and DDC office. • No material shall be borrowed unless it is approved by authorized bodies • No agricultural land is proposed for the material borrowing purpose. • Required water for construction is managed from the sources other than the resources currently being used by the local people. <p>Occupational Health and Safety</p> <ul style="list-style-type: none"> • Adequate PPEs is provided for the workers • Training is provided to workers for the effective use of PPEs. <p>Mobilization of construction machineries and vehicles</p> <ul style="list-style-type: none"> • Regular inspection and maintenance of the vehicles • Control of oil and grease leakage • All the vehicles carrying materials are covered • Regular monitoring and take necessary corrective measures if any spills are recorded • Regular monitoring to ensure no child labor and pregnant woman in construction work • Awareness program for the locals about not involving "Children & Pregnant Women at Work" • Ear plugs and mufflers are provisioned for the workers at high noise • Rotation of Work Shift to avoid long term exposure. • Health kits availability in the camp sites with adequate medical facilities for first aid treatment. 	

Annex 4: Plantation Plan

Development projects passing through forests area are affecting the forest vegetation as well as disturbing wildlife and their habitat also. Appropriate mitigation measures have been recommended in the already approved Initial Environment Examination (IEE)/Environmental Impact Assessment (EIA) report and main mitigation measures related to vegetation loss, slope stabilization and pollution are compensatory plantation, roadside plantation, plantation in private land and bioengineering.

According to the Government of Nepal (2071/01/12 BS): **Standard for Removing Government Trees**, 2071 BS (2014 AD), each road projects has to carry out plantation (with protection for five years) at the ratio of 1:25 plants or pay for the plantation and protection cost to the concerned community forest user groups (CFUGs)/District Forest Office. In private land, trees will be planted at the ratio of 1:1. **Table 1** will be used to manage the planting stock for plantation for different purposes.

Table 1: Type of plantation and planting stock

Type of plantation	Number of plants needed	Costs of plants including transportation	Sources of planting stock	remarks
Compensatory plantation				
Bioengineering activities				

A. Compensatory plantation

Requirements for plantation activities

1. Coordination with CFUGs and DFO - Meeting will be held with concerned CFUGs and DFO to discuss about the plantation management
2. Agreement with CFUG/DFO/DDC - Agreement will be done with concerned CFUGs, DFO and DDC/DTO for the compensatory plantation
3. Managing planting stock - Nursery establishment and operation
 - From DFO nursery
 - From private nursery owner
 - Fruit trees in private land - Horticulture farms in districts
4. Identification and survey of plantation area - Plantation area will be identified by concerned CFUGs and DFO and survey will be done.
5. Fencing - Fencing will be done by concerned CFUGs/DFO.
6. Pitting - Pits of 30cmx45cmx45cm size will be dug.
7. Transportation of seedlings - From nursery to the planting sites
8. Planting - It will be done by the CFUG members in the starting of monsoon
9. Weeding - After the monsoon season, weeding is done to reduce the competition by weeds.
10. Survival count - before winter starts, survival of the plantation will be done for casualty replacement before next monsoon

Plan of Action for plantation

Activities	Oct 15	Dec 16	Feb 16	Apr 16	May 16	Jun 16	Jul 16	Aug 16
Agreement with CFUG/DFO	■							
Managing planting stock		■						
Survey of plantation area			■					
fencing			■					
pitting				■	■			
Transportation of seedlings					■			
planting						■	■	
weeding							■	
Survival count								■

B. Roadside plantation

1. Coordination with local communities, VDC/Municipality, CFUGs and DFO - Meeting will be held with concerned local communities, VDC/Municipality, CFUGs and DFO to discuss about the plantation management
2. Agreement with concerned stakeholders - Agreement will be done with concerned local communities, VDC/Municipality, CFUGs and DFO for the road side plantation
3. Managing planting stock - Nursery establishment and operation
 - From DFO nursery
 - From private nursery owner from districts
 - Fruit trees in private land - Horticulture farms in districts
4. Identification and survey of plantation area - Plantation area will be identified by concerned local communities, VDC/Municipality, CFUGs and DFO and survey will be done.
5. Fencing - Fencing will be done by concerned local communities, VDC/Municipality, CFUGs and DFO
6. Pitting - Pits of appropriate size will be dug depending on species
7. Transportation of seedlings - From nursery to the planting sites
8. Planting - It will be done in the starting of monsoon
9. Weeding - After the monsoon season, weeding is done to reduce the competition by weeds
10. Survival count - before winter starts, survival of the plantation will be done for casualty replacement before next monsoon.

C. Plantation in private land

Coordination with affected landowner - Meeting will be held with concerned affected landowner to discuss about the plantation trees in their land

1. Managing planting stock
 - From DFO nursery
 - From private nursery owner from districts
 - Fruit trees in private land - Horticulture farms in districts.
2. Identification and survey of plantation area - Plantation area will be identified in coordination with affected landowner.

3. Protection- Protection of planted trees will be done by the landowner.
4. Pitting - Pits of appropriate size will be dug depending on the species.
5. Transportation of seedlings - From nursery to the planting sites
6. Planting - It will be done by the affected landowner and cost will be provided in the starting of monsoon
7. Weeding - After the monsoon season, weeding is done to reduce weed competition.

Annex 5
Implementation Reporting Format

Reporting period:

Road Package:

S.N.	Description	Indicator	Status	Remarks
1.	ToR for IEE/EIA	Completed/on going/proposed		
2.	IEE report/Due diligence	Completed/on going/proposed		
3.	Awareness raising orientation training	Number of events and participants		
4a	Spoil disposal management	Preparation of spoil disposal management plan		
		Volume of spoil disposed (m ³) safely		
		Remaining excavated materials (m ³)		
4b	Toe walls for safe disposal of excavated materials	Number and volume (m ³)		
5	Bioengineering works	Location		
		Area (m ²)		
		Type of measures taken		
6	Quarry site management	Location		
		Rehabilitation carried out or not		
		Volume of aggregates supplied (m ³)		
7	Campsite management	Supply of safe drinking water		
		No. of temporary toilets in camp sites		
		Open defecation in percentage		
		Cooking energy used (fuel wood, kerosene, LPG, electricity)		
8	Quality of surface water observed in road side	Good		
		Polluted		
9	Land slide and erosion control measures	Type of measures taken		
		Number		
10	Compensatory plantation in forest area	Number of plants felled		
		Plantation carried out (number of plants/area in ha)		
		Name & location of forest		
		Plantation survival rate (%)		
		Establishment of nursery (number & location)		

11	Compensatory plantation in private land	Number of plants felled		
		Plantation carried out (number of plants)		
12	Road side plantation	Plantation carried out (number of plants)		
		Location		
13	Rehabilitation of community infrastructure along road side	Name		
		Location		
14	Protection/Rehabilitation of culturally & religiously sensitive spots (Temple, Mane, cremation sites etc.)	Name		
		Location		
15	Occupational health & safety	Number of safety gears provided (helmet, facemasks etc.)		
		Use of safety gears by workers in percentage		
		First aid kit provided with medicines (number)		
		Replacement of medicines		
		Accidental insurance (number of workers)		
		Type & number of accident occurred		
		Compensation provided		
		Number of workers fallen sick		
16	Signboard erected	Number		
		Location		
17	Meeting convened by safeguard desk	Number of meeting held		
		Environmental monitoring done		
18	Grievances received and addressed	Received number		
		Addressed number		

Annex 6: Environmental Clearance Checklist

SASEC Road Connectivity Project ADB Loan No.: 3012 NEP (SF)

Project Name:

Reporting Date:

Road Project:
Package No.:

Name of Environmental Focal Person:

Table: Compliance Status

S.N.	Statutory Requirement/Impact/Mitigation Measures	Mitigation Measures Implemented (Yes, No, N/A)	Implemented Mitigation Measures	Effectiveness of mitigation measures (1-5)	Concerned Agencies	Compliance Status	Give Reasons if not Complied
1.	Construction Camp						
1.1	Camp site Layout preparation and approval						
1.2	Lease agreement with land owner in case of private land and permission from concerned agency (VDC/Municipality Office) in case of public land						
1.3	The construction campsites shall be located away from any local human settlement areas and preferably located on lands, which are barren/waste lands.						
1.4	The camps shall be located, at a minimum, 1 km from forest areas to deter trespassing						

	of construction labour.								
1.5	The campsites shall be provided with adequate water supply, sanitation and all requisite infrastructure facilities. This would minimize dependence on outside resources, presently being used by local populace and minimize undesirable social friction thereof.								
1.6	The camps shall have septic tank/soak pit of adequate capacity so that it can function properly for the entire duration of its use.								
1.7	Construction camps shall be provided with kerosene/LPG to avoid dependence on firewood for cooking to the extent possible.								
1.8	Waste disposal sites (solid waste and sewage)								
1.9	After completion of construction works, location of campsites shall be restored to its previous state by undertaking clean up operations.								
2.	Removal of Vegetation Clearance including tree cutting and land clearing activities								
2.1	The road alignment width requiring Vegetation clearing shall be clearly demarcated on ground as per alignment plan.								
2.2	Request letter submitted to District Forest Office for tree cutting and vegetation clearance and approval for the same								
2.3	Trees falling within roadway width and removal of other vegetative cover								

2.4	Shifting of cultural properties like small temples/shrines coming within the road land width to adjacent areas in consultation with local community								
2.5	Inventory of all public utilities like power transmission cables, telephone cables, water/sewerage lines, drains, tube wells, etc., falling within road land width and arrangement for relocation/shifting to adjacent areas in consultation with the respective agencies/authorities.								
3.	Establishment of temporary site office and material storage areas								
3.1	preparation of layout map and approval								
3.2	Lease agreement with land owner in case of private land and permission from concerned agency (VDC/Municipality Office) in case of public land								
3.3	The temporary office and storage area for construction works shall be located away from human settlement areas (minimum 500 m) and forest areas (minimum 1 km).								
3.4	The office and storage areas shall preferably be located on barren/waste lands and conversion of agricultural/cultivable lands for office and storage areas shall not be allowed under any circumstances.								
3.5	All fuel oil/lubricants loading, unloading and storage areas shall be paved (Impermeable) and have separate storm water collection system with facility for								

[illegible]

	place and regular inspection shall be carried to ensure compliance. This shall be a precondition for sourcing of materials from quarries/crushing plants.								
4.7	The borrow areas are to be demarcated with signboards and operational areas are to be access controlled.								
4.8	Topsoil from borrow areas (first 30cm) are to be preserved and used for redevelopment of borrow areas as per provisions or as a base for turfing along embankment slopes.								
4.9	Conversion of agricultural lands for borrowing earth is to be discouraged to the use possible unless warranted by local conditions. In such cases, written consent shall be obtained from the land owners.								
4.10	Water for construction works shall not be drawn from sources, which serve routine needs of local people.								
5	Establishment and operations of Crusher Plant								
5.1	preparation of layout map and approval								
5.2	Identification of crusher plant site in coordination with Material Engineer from RE Office								
5.3	Consent from local community and DDC for the establishment of crusher plant								
5.4	The crusher plants shall be set up on barren/waste lands and conversion of agricultural/cultivable lands for this purpose shall not be allowed under any								

[illegible]

6.2	All diesel-run equipment/vehicles/ deployed for construction activities shall be regularly maintained for smooth operation, a measure contributing to air quality and noise.								
6.3	All vehicles deployed for material movement shall be spill proof to the extent possible. In any case, all material movement routes shall be inspected daily twice to clear off any accidental spills.								
7	Occupational Health and safety hazards at work and camp sites								
7.1	All personnel at work sites shall be provided with protective gears like helmets, boots, etc., so that injuries to personnel are avoided or minimized.								
7.2	Children and pregnant women shall not be allowed to work under any circumstances.								
7.3	Workforce, likely to be exposed to noise levels beyond regulatory stipulated limits, shall be provided with protective gears like ear plugs, etc., and regularly rotated.								
7.4	The construction camps shall have at least drinking water, toilet and health facilities of first aid								
7.5	Arrangement to link with government health programs on hygiene, sanitation, and prevention of communicable diseases								
7.6	All areas intended for storage of hazardous materials shall be quarantined and provided with adequate facilities to combat emergency situations. All required permits								

[illegible]