Environmental Monitoring Report

Semi-Annual Report

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Nepal: Building Climate Resilience of Watersheds in Mountain Eco-Regions

Prepared by the Government of Nepal for the Asian Development Bank

CURRENCY EQUIVALENTS

30 June 2018

Currency unit=Nepalese Rupee (NRs)

NRs 1.00= $. 0.0091

US $1.00=NRs. 109.25

ABBREVIATIONS

ADB	Asian Development Bank
BCRWME	Building Climate Resilience of Watersheds in Mountain Eco-Regions
CO	Community Organizer
CS	Construction Supervisor
DDR	Due Diligence Report
DSCWM	Department of Soil Conservation and Watershed Management
EA	Environmental Assessment
EARF	Environmental Assessment Review Framework
EIA	Environmental Impact Assessment
EM	Environmental Monitoring
EPM	Environmental Protection Measure
GON	Government of Nepal
IEE	Initial Environmental Examination
NDF	Nordic Development Fund
SPCR	Strategic Program for Climate Resilience
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 2018 ends on July 2018.

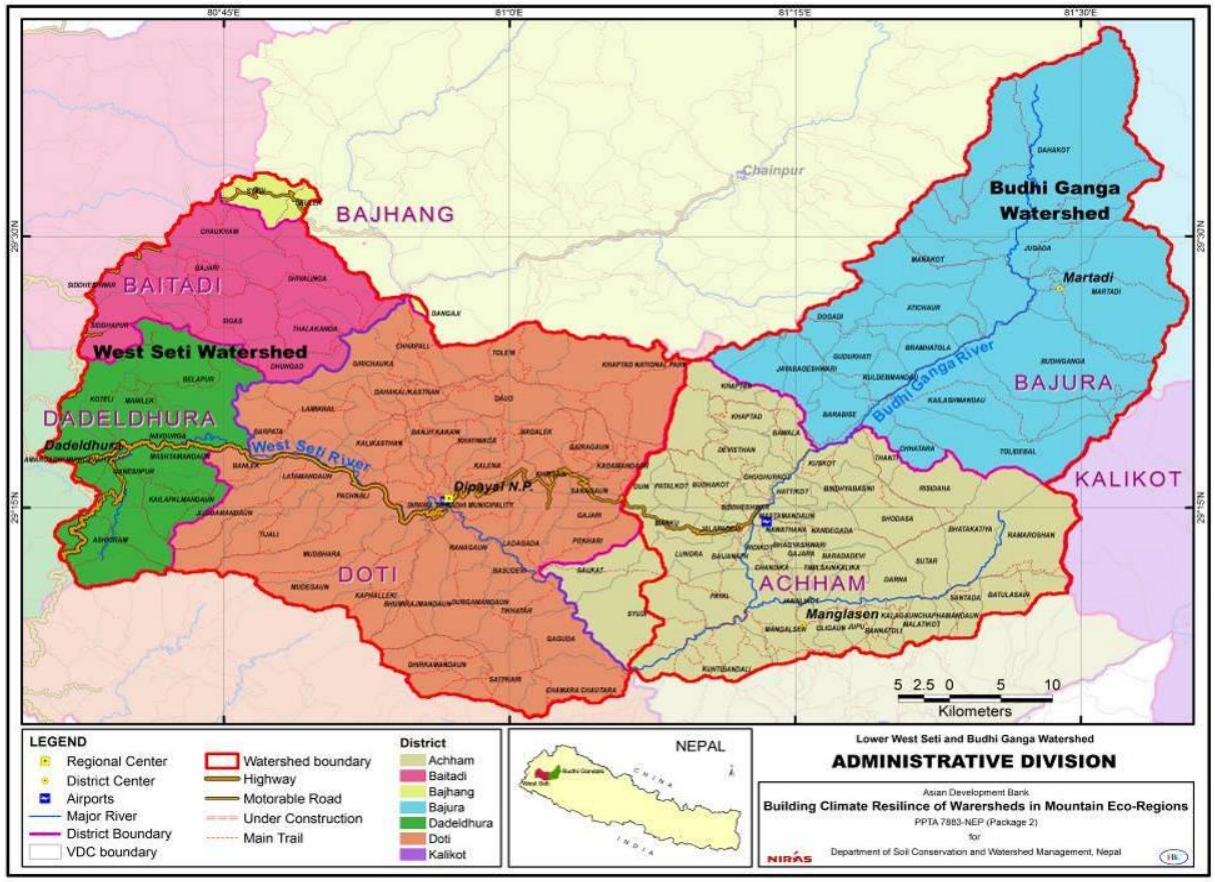
(ii) In this report $ refers to US dollars.

TABLE OF CONTENTS

1. Background

The Project Building Climate Resilience of Watersheds in Mountain Eco- Regions (BCRWME) Project aims at reducing the risks from climate change for mountain communities in Nepal. The means for doing so involves a program of integrated watershed management only of priority water sources catchment area with intervention in upland areas to increase surface water storage, reduce erosion, enhance soil moisture and groundwater recharge and stabilize slopes and gullies. The expected benefits are improved water availability in dry periods for communities, for domestic and irrigation use. The project is founded in the Nepal Strategic Program for Climate Resilience of 2011 as well as the Government of Nepal's (GON) National Adaptation Program of Action (NAPA) of 2010. The NAPA contains a number of adaptation options, several of which call for interventions in watershed management (soil and water conservation), scaling up multiple-use water systems, enhanced water storage and ecosystem management.

The project aims to provide access to more reliable water resources for domestic purposes and irrigation for communities living in the watersheds of Nepal river systems which are significantly vulnerable to climate change. The watersheds selected lie in 6 districts in Far- Western Development Region: Achham, Baitaidi, Bajhang, Bajura, Dadeldhura and Doti. Project area has been presented in figure 1.



Project Area of Building Climate Resilience of Watersheds in Mountain Eco-Regions

Access and reliability to water resources will be improved through a participatory program of integrated watershed management with interventions in upland areas to increase surface water storage and ground water recharge. Communities now recognize water resources are limited. They have expressed their commitment toward protecting and enhancing their water resources. The project will demonstrate ways to protect water sources while at the same time developing them for efficient use. The communities in the

project area will have more reliable water supplies in the dry season. Major beneficiaries will be women and disadvantaged groups. As the first large-scale intervention by ADB in watershed management in Nepal, the project will demonstrate participatory watershed management planning and build the capacity of all levels of the DSCWM for integrated watershed management specifically focusing on water resources. It is intended that lessons learned will also inform the design of traditional rural water supply and irrigation projects.

The expected impact will be that climate resilience in Nepal mountain communities is improved. The project's outcome will be that selected communities significantly vulnerable to climate change have access to more reliable water resources. Approximately 45,000 households are expected to benefit from improved water availability during the dry season to support domestic and agricultural uses. The spring or surface water sources are expected to become more reliable, with their water yield either remaining stable or increasing.

To achieve its expected outcome, the project will have four outputs: (i) Participating communities have improved their practical knowledge for catchment management and new or improved water storage infrastructure ; (ii) communities and government manage water and land in an integrated and inclusive manner with in watersheds; (iii) government adopts knowledge-based approaches for integrated water and land management and improved water reliability and accessibility in the wake of climate change; and (iv) project management support is provided. The project will support communities to manage catchment areas for development and protection of their water sources (springs and streams).This will include (i) protection of the area surrounding the water source and preparation and implementation of the water source catchment management plans, (ii) treatment of gully erosion and slope/landslide stabilization that threatens the water sources, water infrastructure, and beneficiary communities; (iii) construction of water collection chambers, spring boxes or infiltration galleries;(iv) construction of water conservation ponds and storage for irrigation and livestock, and (v) construction of drinking water storage tanks and tap stands. Water storage will help sustain the use of limited water during the dry season, thereby reducing the time people (especially women) spend collecting water, and increasing irrigated agricultural area. Catchment improvement measures will help to stabilize or enhance the yield of water sources.

Implementation of subprojects will particularly address water conservation in the catchments and shortage issues that result in additional labor for women and difficulties for disadvantaged groups who have often access to less reliable water sources and suffer disproportionally in case of water shortage. The project will also provide participating communities with education and facilitate programs on water conservation practices (including micro-irrigation), methods for maintaining soil moisture in agriculture, grazing and fodder management, and ways to regenerate vegetative cover. At the sectoral level, the project will strengthen Department of Soil Conservation and Watershed Management's (DSCWM's) capacity in sub-watershed management planning to improve water security and enhance watershed resilience. Sub-watershed management plans will be prepared that describe the watershed bio-physical and socio-economic conditions and challenges, and build a geographical information system database of existing water infrastructure and water-related development interventions. Identified community-driven interventions for catchment management (work for critical water source) and enhancement will be included, through the comprehensive watershed

planning process, DSWCM's capacity to determine and monitor priority interventions will be strengthened, and the department can use the GIS data base in planning its future programs. e project will be implemented in six districts, this output will focus on documenting and sharing lessons learned through project implementation to all DSCWM staff through strategic and targeted technical assistance. A knowledge management plan will be implemented, with activities to document and incorporate lessons learned in to country programs and foster knowledge sharing among country stake holders and in international climate change forums. DSCWM's capacity to monitor the impacts of project interventions will be strengthened through preparation of a management information system and expertise in benefit monitoring and evaluation. Other evaluations will be conducted on appropriate topics such as changes in hydrology due to catchment management measures, how communities negotiate water allocations, behavioral change in collective management of interventions, and demand management. Project experiences impact assessments and lessons learned will be shared globally as part of the Strategic Program for Climate Resilience's (SPCR's) global learning support program. This output will be financed by the Nordic Development Fund (NDF).

2. Objective

In general, the Environmental Monitoring (EM) is undertaken to collect data and information on the environmental conditions to know the compliance of the implementation of Environmental Protection Measures (EPMs) and other regulatory standards and to know the effectiveness of EPMs. It involves measuring and recording of physical, biological socioeconomic and cultural variables associated with development impacts.

One of the powerful methods to improve the Environmental Assessment Report is to monitor its implementation. This should be done by regular checking, recording and taking timely follow-up measures based on the feedbacks received in the monitoring process. If monitoring of the implementation of Environmental Assessment (EA) Report in this case the Due Diligence Report is not conducted the entire meaning of usefulness of EA would stop there. In order to apply mitigation measures or comply with legal provisions records of monitoring program is essentially required.

The specific objectives of the environmental monitoring are to:

- Know about the accuracy of impact prediction and implement activities not to exceed the prescribed standards;
- Promote compliance of the implementation of EPMs;
- Ensure the effectiveness of mitigation measures and conformity with Due Diligence Report (DDR);
- Provide guidance for re-adjustments during project implementation and operation; and
- Provide timely warning of potential environmental damage.

3. Environmental Safeguard in BCRWME

The project is environment category C. As of now, 88 number of SPPR has been prepared for batch 1 consisting of 8 sub-projects, batch-2 consisting of 20 sub-projects, batch -3 consisting of 40 sub-projects and 20 sub-projects of batch-4 lot 1. For category c' that incurs minimal or no adverse environmental impacts and thus does not require environmental assessment, although environmental implications need to be reviewed. For this Due Diligence Report is adequate. Implementations of batch 4 (lot 1) sub-projects are in progress. Shortly DDR of lot 2 of batch 4 shall be prepared. For lot 2 of batch iv all field level data has been collected. Preparation of SPPR including DDR is in progress. This semi-annual monitoring report presents the details of the activities done to batch 4 (lot1)3 and post support of subprojects carried out so far to check whether the expected or identified impacts are properly addressed or it requires further actions.

4. Construction Approach

The main task performed by Project Management and Implementation Consultant (PMIC) is preparation and implementation of SPPRs. For this purpose, the main activities carried out by PMIC are 1) Institutional setup, SPPRs preparation and implementation, 2) Environment management, 3) Orientation, training and workshop, 4) Monitoring and supervision, 5) Communication and information dissemination, 6) Reporting and documentation, 7) Coordination and consultation etc.

Community contract is executed, managed and supervised by the community itself under the close supervision and technical guidance of executing agency and hence ensures the quality of works and timely completion. The following procedures have been applied for the implementation of community contract:

- **Mode of Community Contracts:**
  a) For Civil Works of subprojects:
  Community contracts for civil works of sub projects are Item Rate Contract.

  b) For catchment restoration works (Vegetative works) of all subprojects:
  Cost of Works has been divided into two parts - Materials cost and labor cost. Materials required for catchment restoration works (Vegetative works) are procured by concerned DSCO through standard ADB's shopping method. Community contract in labor works only.

- **Material Management and Procurement:** Local materials for civil works such as boulder, sand, coarse aggregates etc were managed by the community as per requirement in the BOQs of contract. Such local materials were collected from the immediate area are suggested by PMIC engineer responsible for construction supervision and quality control. The PMIC's Senior Environmental Specialist has monitored such activities during construction to ensure the collection of materials without imparting any environmental implications.

Materials for civil works (under Batch-I subprojects) such as cement, steel bars, GI wire/boxes, barbed wire, HDP and GI pipes, pipe fittings etc were procured by the DSCO from the market/factory under the guidance and supervision of responsible PMIC technicians/engineers.

- **Vegetative Works and Community Participation/Contribution:** Community participation/contribution is 20% of the catchment restoration works (vegetative works). Vegetative works for all the management areas under a sub project is included in a separate package, which include the corresponding amount of community participation/contribution.

- **Community Organizer and Construction Supervisor:** DSCOs has engaged one CO and two CSs for each sub project after recruiting them as per the recruitment process described in the PAM. CO is assisting the FTT in community mobilization during selection of schemes. CO is accountable for community mobilization activities, report directly to FTT and act as a bridge among construction supervising team (CS, FTT, Mobile team technicians, construction supervision committee of CDG), CDG and executing agency (PMU/DSCO) during construction.
  CSs are responsible for day to day construction supervision and quality control and work under the guidance of FTT and PMIC mobile team and assist FTT in taking measurements of works done for interim (running) and final payment, report directly to FTT, maintain a supervision register to record the day-to-day construction activities and report immediately to FTT about the technical complications/problems that need immediate attention.

Quality Assurance and Quality Control: CS, FTT, mobile team technicians (WR E and WME in case of vegetative works), construction supervision committee of CDG and DSCO officials supervise the construction of works under community contract. Under the guidance and overall supervision of mobile team, FTT is directly responsible for day-to-day construction management and supervision. FTT act as the main technical personnel to check and clear the construction works. CS assists FTT in this supervision work. Construction supervision committee of CDG also assists FTT in construction supervision. Any serious technical problem encountered during construction requiring urgent attention is immediately attended and resolved by the engineers of PMIC mobile team. DSCO chief co-ordinates at working site every fortnightly among the supervising teams and CDG to provide guidance so as to maintain quality and progress of the works.

Construction of works has been carried out as per the standard technical specifications of Department of Irrigation; and Department of Water Supply and Sewerage. Construction materials produced by the recognized, reputed standard manufacturing factories are used in construction. Construction materials procured met the required specification which were verified from test results and specifications issued by respective manufacturing factories. Construction materials were procured under guidance and supervision of DSCO officials and responsible PMIC technicians/engineers. Cement, Steel bars, HDP/GI pipes, G.I. wires which bear Nepal Standard mark (NS) and pipe fittings which bear NS or BS or ARE mark were procured. Skilled labors were used for construction and fitting work

- **Construction Management Expenses**: An amount equivalent to 2.5% of the cost estimate were set aside for construction management expenses in every community contracts. The use of amount for Construction Management Expenses by CDG are as follows:

- The amount is being used by the community to purchase necessary construction tools and equipment which are beyond the capacity of community, stationery and for travels and other work related expenses as per the decision of the executive committee of concerned CDG.
- CDG may use this amount, if required, within the community contract period only.
- It is the responsibility of the concerned CDG to keep all invoices and related documents supporting such expenses in a safe manner till the payment is made.
- The CDG submit a request letter recommended by the chairman of CDG along with supporting invoices and documents to the concerned office (PMU/DSCO) to claim for payment. The supporting invoices and documents is certified by CDG.

- **Measurement and Payment:**
  PMU/DSCO make required advance payment to the community only if its requirement according to contract is justified. The advance payment and its recovery is as per Public Procurement Rules, 2007.

5. Overall environmental safeguard status

5.1 Preparation of Due Diligence Report

88 number of DDR have been prepared consisting of batch 1 (8 sub-projects), batch 2 (20 sub-project), batch 3 (40 sub-project) and 20 number of DDR of batch -4 lot 1. EARF has been used while preparing DDR. Environmental assessment checklist was used to assess the design, location, likely impacts during construction and operation stages. The screening checklist used at planning stage of the sub-projects has been attached in annex-1. In addition, the status of implementation of batch 3 and planning of batch 4 is presented in the annex 2 and 3 respectively

5.2 Environmental safeguard desk

Environmental safeguard desk has been established in the project management office Dadeldhura. One of the DSCO staff has been designated as environment officer in Doti and Dadeldhura DSCO. Appointment of remaining environment officer is in progress. Since 2 new DSCO in Achham and Bajura district has been established. Safeguard desk meeting has been conducted in all 6 DSCO of 6 districts i.e. Doti, Dadeldhura, Bajhang, Baitadi, Achham and Bajura district. ESD were formed after preparing TOR with roles and responsibility of each members. Details of TOR of ESD with roles and responsibility have been presented in the annex-4

5.3 Training to FTT and CO/CS

Immediately after orientation program conducted at PMU Dadeldhura, FTT were given training. Details of the data to be collected were discussed. Later on the newly appointed community organizer were also given training about the environmental issues and its mitigation measure at PMU Dadeldhura.. Time to time watershed management expert during field visit also instruct the FTT and co cs about supervision of the construction quality and maintaining the safe environmental condition there. In this context construction supervisor has also been instructed to monitor the the environmental condition at site. In details, CS has also been instructed to gather the environmental issues and has been instructed to fill up the checklist and forward it to the FTT then MFTT finally at PMIC office to check the environmental issues. Whether any environmental issues need to be addressed. Checklist related with construction supervisor and FTT has also been prepared in Nepali language. English version of checklist for FTT and CS has been attached in the annex-4. However, the checklist used by CS is in Nepali language.

5.4 Grievances Redress Mechanism

Sub-projects have been implemented through the consensus of local people of that particular sub-projects. During planning stage all the concern of local people have been taken in to consideration. Once the concerns of the local people are resolved, further process for implementation is carried out. Since the project is categorized as C and the expected impacts are insignificant, therefore GRM has not been established. As of now, no complaints have been recorded or observed in the project areas.

6. Findings of the environmental monitoring

During the construction of civil work of sub-projects, site visits were made by senior environmental experts. Mobile team regularly monitored the civil construction and catchment restoration work. The details of the findings have been presented in the annex 2. The details of the monitored activities are presented below.

6.1 Extra cut Earth materials

Extra cut earth materials (soil) were deposited at the proper location. Although the extra cut earth, material was so small that the safe disposal was not a problem. Community responsible for civil work disposed it safely. No impacts were recorded.

6.2 Quarry Site management

During civil construction all raw materials was collected from the immediate sub-project area. The raw materials were collected from the location specified by the designated engineers. Even in few locations the stone was collected from the nearby surface area. Structure was so small only small boulders required were just collected. No impact was recorded due to stone extraction.

6.3 Slope stabilization and bio engineering activity

Slope stabilization and bio engineering activities including fruit plantation were carried out efficiently.

6.5 Downstream impacts

So far, no impact of downstream was recorded. Since the sub-projects was initiated after agreement with community. So, no complaints were recorded.

7. Conclusion

So far, no impacts are recorded. Due to implementation of projects the upstream of intake has been duly planted. People of the sub-projects are realizing the importance of the upstream catchments. Through discussion, meeting with locals, they have managed the area effectively. Environment Assessment Review Framework has been thoroughly applied during this period. EARF is sufficient to address any environmental issue. Expected impacts and mitigation shall be carried out strictly following EARF. Few of the photographs of the constructed structures are presented in the annex- 5

8. Action to be taken further

All the sites of catchment restoration work of Batch 3 and civil work of batch -4 shall be monitored as required.

Reference:

1. Environmental Assessment and Review Framework, Prepared by Department of Soil Conservation and Watershed Management for the Asian Development Bank, ADB TA 7883-NEP, July 2013

Annex-1: Environmental Assessment Checklist for Subprojects
Building Climate Resilience of Watersheds in Mountain Eco-Regions

S. No.	Screening Question	Status		Remarks
		Yes	No	
A.	**Project Siting**			
A.1	Is the project area near or within cultural site?			
A.2	Is the project area near or within protected area?			
A.3	Is the project area near or within wetland?			
A.4	Is the project area near or within buffer zone of protected area?			
A.5	Is the project area near or within special area for protecting bio-diversity?			
A.6	Will the project obstruct the main flow of perennial streams or watercourses?			
A.7	Is the project structure located on government land?			
A.8	Is the project structure located on land freely provided to the project?			
A.9	Does the project require involuntary resettlement or compensation other than in kind negotiated within the community?			
B.	**Potential Environmental Impacts During Construction**			
B.1	Will the project cause construction impacts due to the movement of equipment through community?			
B.2	Will the project require use of labor camps for housing construction workers?			
B.3	Will the project cause excessive air emissions from equipment or dust from construction activity?			
B.4	Will the project release excess sediment to stream?			
B.5	Will the project cause problem of excavated earth materials?			
B.6	Will the project require removal of trees?			
B.7	Will access road needs to be constructed?			
B.8	Does hazardous condition exists for workers performing the work?			
B.9	Do safety kit needed for workers?			

C.	**Potential Environmental Impacts During Operation**			
C.1	Will the project have a negative impact on downstream water users?			
C.2	Will the project adversely affect ecology in the area, including species diversity?			
C.3	Will the project give rise to social conflict to regarding tenure and use of the land?			
C.4	Will the project cause in-migration with opening of roads to uplands areas?			
C.5	Will the project adversely affect tourism and recreational opportunities in the area?			
C.6	Will the project create conflicts with established land management policies?			
C.7	Will the project cause other ecological problems for example pollution of water bodies from fertilizers, pesticides and herbicides?			
D.	**Potential Environmental Benefits**			
D.1	Does the project reduce deforestation?			
D.2	Does the project reduce soil erosion?			
D.3	Does the project enhance water availability?			
D.4	Does the project increase aesthetic environment value?			
D.5	Does the project improve quality of life?			

Annex-2: Implementation Status of batch-2 and 3 (Potential Impacts and Mitigation Measures)

Potential impacts	Mitigation Measures	Complied		Responsibility	Remarks
		Yes	No		
1. Design and Location					
1.1 Inequitable access for household water and irrigation	Develop prior understanding of water use agreeable to community	Yes		FTT, DSCO's EO monitored by SES	
1.2 Water conflicts with downstream communities	Investigate potential for impact and conduct stakeholders consultations with downstream communities to assure there is no conflict with existing uses.	Yes		FTT, DSCO's EO monitored by SES	
1.3 Disruption of hydrology	Locate to intercept sufficient but not excess runoff, provide spillway as needed by ensuring prevention of erosion at the escape	Yes		FTT, DSCO's EO monitored by SES	
1.4 Slope destabilization	Slope and soil conditions evaluated to assure safety and stability	Yes		FTT, DSCO's EO monitored by SES	
1.5 Impact on forests	Locate facility where trees are not required to be cleared or include replacement in cost estimate	Yes		FTT, DSCO's EO monitored by SES	
1.6 Unstable soils used in embankment result in failure	Design embankment to assure stability, require treatment with grasses to prevent erosion.	Yes		FTT, DSCO's EO monitored by SES	
1.7 Excess runoff causes channel, embankment or spillway failure	Design channels and spillways to safely accommodate flows, install piping and channels in stable soils or engineered to withstand soil movements	Yes		FTT, DSCO's EO monitored by SES	
1.8 Location of structures	Avoid loss of private and community land and property unless it is willingly donated by owners	Yes		FTT, DSCO's EO monitored by SES	
2. Construction stage					
2.1 Clearance of trees and undergrowth	Minimize removal of trees, coordinate with CFUGs/DFO for clearing and follow compensatory plantation policy of DOF (1:25)	Yes		CS, FTT monitored by DSCO's EO	
2.2 Excess soil and sediment loss	Balance cut –and-fill, dispose of excess earth at approved location, trenches running down slope (against contour) to be compacted and	Yes		CS, FTT monitored by DSCO's EO	

	sodded to prevent riling				
2.3 Impact Due to quarry and borrow areas	Use materials from the immediate area in construction, obtain prior approval from owners of the land and re-grade the area	Yes		CS, FTT monitored by DSCO's EO	
2.4 Soil loss in the event of heavy rainfall during installation	Stop work during heavy rains and stall silt protection measures at all work sites	Yes		CS, FTT monitored by DSCO's EO	
2.5 Loss of topsoil	Stockpile top soil for final dressing at site	Yes		FTT monitored by DSCO's EO	
2.6 Excessive soil erosion	Seed and plant exposed slopes after construction	Yes		CS, FTT monitored by DSCO's EO	
3. Operation Stage					
3.1 Erosion above pond causes infilling and potential contamination	Catchments for water harvesting protected by limiting access and maintaining good vegetative cover	Yes		DSCOs, CDGs, FUG and VDC	
3.2 Grazing animals cause damage to upstream catchment, embankment and pipe alignments	Restrict grazing in catchments, along pond embankments and on pipe alignments through agreements among community members on acceptable grazing areas.	Yes		DSCOs, CDGs, FUG and VDC	
3.3 Animals contaminate surface supplies	Prevent access to surface supplies, project to provide alternative watering points	Yes		DSCOs, CDGs, FUG and VDC	
3.4 Surface contamination in recharge zones could affect water supply quality	Set out criteria for land use in recharge zone and educate locals, restrict access	Yes		DSCOs, CDGs, FUG and VDC	
3.5 Effects on downstream water use	Assure no disruption of existing water uses	Yes		DSCOs, CDGs, FUG and VDC	

Note: DSCO's EO= Environment Officer of District Soil Conservation Office; CDGs= Community Development Group; VDC= Village Development Committee. CFUG= Community Forest Users Group; FTT=Field Technical Team; DSCO's EO= Environment Officer of District Soil Conservation Office

Annex-3: Status of Environmental Safeguard

S.No.	Name of the Sub-project	Environmental screening is carried out ?(Yes/No)	Environmental category of the sub-project (A/B/C/F1)	EARF is prepared (If applicable) (Yes/No)	EIA/IEE/DDR is prepared (Yes/No)	ADB approved EIA/IEE with EMP (Yes/Under Review/Not Yet Due/Over Due)	Government approved EIA/IEE with EMP (Yes/Under Review/Not yet submitted	Safeguard monitoring and coordination mechanism established (Yes/No)	GRM is established (Yes/No)	Automated safeguard monitoring system customized (Yes/No)	EMP cost in approved document is included in BOQ as an individual item (Yes/No)
1	Jijodamandu	Yes	C	Yes	Yes	NA	NA	Yes	NA	No	No
2	Latamandu	Yes	C	Yes	Yes	NA	NA	Yes	NA	No	No
3	Sanagaun	Yes	C	Yes	Yes	NA	NA	Yes	NA	No	No
4	Banlek	Yes	C	Yes	Yes	NA	NA	Yes	NA	No	No
5	Nawadurga	Yes	C	Yes	Yes	NA	NA	Yes	NA	No	No
6	Koteli	Yes	C	Yes	Yes	NA	NA	Yes	NA	No	No
7	Ganeshpur	Yes	C	Yes	Yes	NA	NA	Yes	NA	No	No
8	Mastamandu	Yes	C	Yes	Yes	NA	NA	Yes	NA	No	No
9	Kaipalmandu	Yes	C	Yes	Yes	NA	NA	Yes	NA	No	No
10	Manilek	Yes	C	Yes	Yes	NA	NA	Yes	NA	No	No
11	Belapur	Yes	C	Yes	Yes	NA	NA	Yes	NA	No	No
12	Ashigram	Yes	C	Yes	Yes	NA	NA	Yes	NA	No	No
13	Amargadhi	Yes	C	Yes	Yes	NA	NA	Yes	NA	No	No
14	Pachnali	Yes	C	Yes	Yes	NA	NA	Yes	NA	No	No
15	Tijali	Yes	C	Yes	Yes	NA	NA	Yes	NA	No	No
16	Barpata	Yes	C	Yes	Yes	NA	NA	Yes	NA	No	No
17	Gajari	Yes	C	Yes	Yes	NA	NA	Yes	NA	No	No
18	Kadamandu	Yes	C	Yes	Yes	NA	NA	Yes	NA	No	No
19	Gairagaun	Yes	C	Yes	Yes	NA	NA	Yes	NA	No	No
20	Khitsen	Yes	C	Yes	Yes	NA	NA	Yes	NA	No	No
21	Deulek	Yes	C	Yes	Yes	NA	NA	Yes	NA	No	No
22	Shyandi	Yes	C	Yes	Yes	NA	NA	Yes	NA	No	No
23	Sikharpur	Yes	C	Yes	Yes	NA	NA	Yes	NA	No	No
24	Siddseswor	Yes	C	Yes	Yes	NA	NA	Yes	NA	No	No
25	Ganjari	Yes	C	Yes	Yes	NA	NA	Yes	NA	No	No
26	Siddhapur	Yes	C	Yes	Yes	NA	NA	Yes	NA	No	No
27	Sigash	Yes	C	Yes	Yes	NA	NA	Yes	NA	No	No
28	Chaukham	Yes	C	Yes	Yes	NA	NA	Yes	NA	No	No
29	Dhungad	Yes	C	Yes	Yes	NA	NA	Yes	NA	No	No
30	Shivling	Yes	C	Yes	Yes	NA	NA	Yes	NA	No	No
31	Thalakanda	Yes	C	Yes	Yes	NA	NA	Yes	NA	No	No
32	Lamikhal	Yes	C	Yes	Yes	NA	NA	Yes	NA	No	No

33	Daud	Yes	C	Yes	Yes	NA	NA	Yes	NA	No	No
34	Girichauka	Yes	C	Yes	Yes	NA	NA	Yes	NA	No	No
35	Toleni	Yes	C	Yes	Yes	NA	NA	Yes	NA	No	No
36	Mahadevsthan	Yes	C	Yes	Yes	NA	NA	Yes	NA	No	No
37	Chhapali	Yes	C	Yes	Yes	NA	NA	Yes	NA	No	No
38	Buglekh	Yes	C	Yes	Yes	NA	NA	Yes	NA	No	No
39	Kalikashan	Yes	C	Yes	Yes	NA	NA	Yes	NA	No	No
40	Khatiwada	Yes	C	Yes	Yes	NA	NA	Yes	NA	No	No
41	DahaKalikasthan	Yes	C	Yes	Yes	NA	NA	Yes	NA	No	No
42	Bajkakani	Yes	C	Yes	Yes	NA	NA	Yes	NA	No	No
43	Nandegada	Yes	C	Yes	Yes	NA	NA	Yes	NA	No	No
44	Bhageshore	Yes	C	Yes	Yes	NA	NA	Yes	NA	No	No
45	Bindabashini	Yes	C	Yes	Yes	NA	NA	Yes	NA	No	No
46	Baijnath	Yes	C	Yes	Yes	NA	NA	Yes	NA	No	No
47	Hatiikot	Yes	C	Yes	Yes	NA	NA	Yes	NA	No	No
48	Rodikot	Yes	C	Yes	Yes	NA	NA	Yes	NA	No	No
49	Oligaun	Yes	C	Yes	Yes	NA	NA	Yes	NA	No	No
50	Duni	Yes	C	Yes	Yes	NA	NA	Yes	NA	No	No
51	Nawathana	Yes	C	Yes	Yes	NA	NA	Yes	NA	No	No
52	Gajara	Yes	C	Yes	Yes	NA	NA	Yes	NA	No	No
53	Jupu	Yes	C	Yes	Yes	NA	NA	Yes	NA	No	No
54	Patalkot	Yes	C	Yes	Yes	NA	NA	Yes	NA	No	No
55	Mastamandu	Yes	C	Yes	Yes	NA	NA	Yes	NA	No	No
56	Bannatoli	Yes	C	Yes	Yes	NA	NA	Yes	NA	No	No
57	Sokat	Yes	C	Yes	Yes	NA	NA	Yes	NA	No	No
58	Timelsen	Yes	C	Yes	Yes	NA	NA	Yes	NA	No	No
59	Marku	Yes	C	Yes	Yes	NA	NA	Yes	NA	No	No
60	Budhakot	Yes	C	Yes	Yes	NA	NA	Yes	NA	No	No
61	Siddeshore	Yes	C	Yes	Yes	NA	NA	Yes	NA	No	No
62	Bramhatola	Yes	C	Yes	Yes	NA	NA	Yes	NA	No	No
63	Dogadi	Yes	C	Yes	Yes	NA	NA	Yes	NA	No	No
64	Barhabise	Yes	C	Yes	Yes	NA	NA	Yes	NA	No	No
65	Kuldeumandu	Yes	C	Yes	Yes	NA	NA	Yes	NA	No	No
66	Jayabageshori	Yes	C	Yes	Yes	NA	NA	Yes	NA	No	No
67	Gudukhati	Yes	C	Yes	Yes	NA	NA	Yes	NA	No	No
68	Kanda	Yes	C	Yes	Yes	NA	NA	Yes	NA	No	No
69	Jalapadebi	Yes	C	Yes	Yes	NA	NA	Yes	NA	NO	NO
70	Janalikot	Yes	C	Yes	Yes	NA	NA	Yes	NA	NO	NO
71	Babala	Yes	C	Yes	Yes	NA	NA	Yes	NA	NO	NO
72	Ghugurkot	Yes	C	Yes	Yes	NA	NA	Yes	NA	NO	NO
73	Thanti	Yes	C	Yes	Yes	NA	NA	Yes	NA	NO	NO
74	Manakot	Yes	C	Yes	Yes	NA	NA	Yes	NA	NO	NO
75	Atichaur	Yes	C	Yes	Yes	NA	NA	Yes	NA	NO	NO
76	Santada	Yes	C	Yes	Yes	NA	NA	Yes	NA	NO	NO

77	Malatikot	Yes	C	Yes	Yes	NA	NA	Yes	NA	NO	NO
78	Basudevi	Yes	C	Yes	Yes	NA	NA	Yes	NA	NO	NO
79	Durgamandu	Yes	C	Yes	Yes	NA	NA	Yes	NA	NO	NO
80	Kalena	Yes	C	Yes	Yes	NA	NA	Yes	NA	NO	NO
81	Mudhegaun	Yes	C	Yes	Yes	NA	NA	Yes	NA	NO	NO
82	Mudbhara	Yes	C	Yes	Yes	NA	NA	Yes	NA	NO	NO
83	Kapalleki	Yes	C	Yes	Yes	NA	NA	Yes	NA	NO	NO
84	Ranagaun	Yes	C	Yes	Yes	NA	NA	Yes	NA	NO	NO
85	Manakot	Yes	C	Yes	Yes	NA	NA	Yes	NA	NO	NO
86	Tayal	Yes	C	Yes	Yes	NA	NA	Yes	NA	No	NO
87	Chapamandu	Yes	C	Yes	Yes	NA	NA	Yes	NA	No	NO
88	Kalagaon	Yes	C	Yes	Yes	NA	NA	Yes	NA	NO	NO

Since the project is categorizes as “C”. Therefore EIA, IEE with EMP and GRM is not prepared or established.

Note: EIA- Environmental Impact Assessment, IEE- Initial Environmental Examination, DDR- Due Diligence Report, EMP- Environmental Management Plan, NA- Not applicable, GRM- Grievance Redress Mechanism, BOQ- Bill of Quantity.

Annex -4: Terms of references for environmental safeguard desk

1. The PPTA carried out initial environmental examination (IEE) of the 3 sample subprojects following the requirements of the ADB's SPS (2009) and the GON Environmental Protection Act (1996) and Environmental Protection Regulation (1997). Based on the findings of IEEs, an Environmental Assessment and Review Framework (EARF) was prepared for the Project to guide in ensuring environmental safeguards in project activities. The subprojects to be implemented under the Project aim at various methods of environmental conservation and improvements in climate resiliency such as soil conservation, slope and bank stabilization, retention of water through re-vegetation, watershed protection, groundwater recharge, enhancing soil moisture, and storage of water for community use in upland areas. Hence, all of the subprojects are predicted to outweigh minimal adverse impact and will be environment category C requiring due diligence report (DDR).
   The EARF stipulates that all subprojects must be screened for environmental impacts, and due diligence reports (DDRs) will be prepared for Category C subprojects and initial environmental exams (IEEs) with environmental management plans (EMPs) will be prepared for Category B subprojects. The FTTs will conduct environmental screening; the DSCO staff designated as Environment Officer will check each completed REA checklist before it is finalized, and will prepare DDRs for Category C subprojects and ensure they are included in the SPPR. A Senior Environment Specialist will be engaged by the PMU as a consultant who will work on an intermittent basis. The Senior Environmental will be responsible for training the DSCO Environment Officers and monitoring the quality of environmental screening and due diligence. The Senior Environment Specialist will check and clear each DDR before the SPPR is approved. The Specialist will also conduct environment safeguard monitoring for the project twice per year

2. The ADB Inception Mission agreed with the proposal of the Executing Agency (DSCWM) to establish a “Safeguards Desk” at PMU level instead of a “Safeguards Unit” in the DSCWM, as envisaged in the Environment Assessment and Review Framework (EARF). Hence, it was agreed that the Desk will be established as soon as possible with the Deputy Project Director appointed as Coordinator and PMU Planning Officer as member secretary of the Desk. The senior environment specialist (ES) in PMIC shall prepare the terms of reference for the PMU Desk in consultation with the PD and will provide training to the DSCO Environment Officers about environmental safeguards and in particular preparation of due diligence reports and associated approval processes to be followed. The Soil Conservation Officers (SCO’s) of each of the project related DSCOs will be designated as environment officers (EO’s) (by DSCWM) and will be the member of the Desk. All the safeguards related staff of the Project (environmental, social and gender related staff) shall also be the member of the Desk. The NDF Package 1 Gender and Social Development Specialist (International Consultant) will participate as advisor to the Safeguards Desk whenever available. The Desk shall communicate each month on safeguards issues and meet every three months and keep minutes of all meetings; and will meet with the technical team also every three months (or as and when needed) to discuss safeguards performance in subprojects areas of non-compliance and agree on the required corrective measures. The Desk will also discuss on issues related with implementation of environmental management plan, resettlement framework, indigenous people’s framework, gender action plan, public consultation and communication plan, and grievance redress mechanism. Copy of the minutes of meeting of the Desk will be attached to the trimester progress reports, and a consolidation of the information shall form the basis for preparation of annual environmental compliance monitoring plan.

3. The Environment Officers (EOs) will be responsible to finalize the Rapid Environmental Assessment (REA) checklist and prepare DDR of category C subprojects with the support of Senior Environment Specialist (SES). The SES shall provide safeguards training to the EOs on the process of reviewing the REA checklist and preparation of DDR. The SES shall support and train the DSCOs in preparing field environmental compliance monitoring checklist and using that for conducting structured environmental monitoring. The SES shall also support the PMU in preparing public consultation and communication plan, and grievance redress mechanism in coordination with the PMIC Senior Social Development and M&E Specialist and the international Gender and Social Development Specialist. It is agreed that the SES will provide environmental safeguards orientation to DSCOs and all project staff to make all aware on the safeguards requirements of the project.

4. The SPPRs will document environmental due diligence and initial environmental exams required as per the Environmental Assessment and Review Framework (EARF) of ADB, July 2013.This EARF will apply to all sub-projects under the Project to ensure that environmental issues are appropriately addressed and mitigated to acceptable levels. These are intended to provide effective integration of environmental assessment and management planning into the sub-project preparation process, in accordance with the laws of Nepal, and in conformance with the requirement of ADB.
   The DSCO will be responsible for implementation of sub-projects. The DSCO Chief will be responsible for technical and management matters and will supervise the work of FTT, with the assistance of a FTT Mobile Supervision Team (PMIC Consultant experts).

Responsibilities of Environmental Safeguard Desk

The institutional responsibilities and authorities during the implementation phase are presented below.

Sub-project stage	Responsible Person and Organization	Responsibilities
	Deputy Project Director, PMU	Coordination
	Planning Officer, Member Secretary	-
	Gender and Social Development Specialist (International Consultant)	Advising
Overall	Senior Environmental Specialist at the PMIC	Support capacity development of Environmental Planning, Monitoring and Management
		Guidance for Environmental Planning, Periodic Monitoring and Reporting.
		Biannual Review and Monitoring of Environmental Management activities of the project and training on corrective action if any.

		Quality Assurance of DDRs
	DSCO Environment Officer	Clearance of REA Screening
		Preparation of DDRs
Screening	FTTs supported by the Environment Officer	Screen the sub-project request in the light of environmental and social criteria
Planning	DSCO Environment Officer	Prepare DDRs for category C Sub-projects
	Senior Environment Specialist	Endorse DDRs for category C Sub-projects
Detailed Design	FTTs supported by Water Resources Engineers of PMIC at PMU	Integrate environmental issues of DDRs in design and contract document.
Construction	Contractor	Implement required environmental measures
	DSCO Environment Officer	Supervise implementation of environmental measures.
Community Outreach	FTTs supported by DSCO Environment Officer	Implement specific environmental mitigation measures incorporated in the community outreach program.

DDR= Environmental Due Diligence Report; DSCO = District Soil Conservation Office; FTT = Field Technical Team; PMU = Project Management Unit.