

# Environmental Assessment and Review Framework

ADB TA 7883-NEP  
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## Nepal: Building Climate Resilience of Watersheds in Mountain Eco-Regions

Prepared by Department of Soil Conservation and Watershed Management for the  
Asian Development Bank

## CURRENCY EQUIVALENTS

(as of 1 December 2012)

|               |   |                     |
|---------------|---|---------------------|
| Currency unit | – | Nepalese Rupee (NR) |
| NR1.00        | = | \$0.0115            |
| \$1.00        | = | NR 86.9             |

## ABBREVIATIONS

|       |   |  |
|-------|---|--|
| ADB   | – | Asian Development Bank                                   |
| CDG   | – | Community Development Group                              |
| CFUG  | – | Community Forest User Group                              |
| CPC   | – | Consultation, Participation and Communications (Plan)    |
| DAGs  | – | disadvantaged groups                                     |
| DDR   | – | Due Diligence Reports                                    |
| DFO   | – | District Forestry Office                                 |
| DSCO  | – | District Soil Conservation Office                        |
| DSCWM | – | Department of Soil Conservation and Watershed Management |
| DSO   | – | DSCO Safeguard Officer                                   |
| DSS   | – | District Safeguard Specialist                            |
| EARF  | – | Environmental Assessment and Review Framework            |
| EIA   | – | Environmental Impact Assessment                          |
| GESI  | – | Gender Empowerment and Social Inclusion (Plan)           |
| GON   | – | Government of Nepal                                      |
| GPP   | – | Grievance Point Person                                   |
| IEE   | – | Initial Environmental Examination                        |
| MoFSC | – | Ministry of Forests and Soil Conservation                |
| NAPA  | – | National Adaptation Program of Action                    |
| NES   | – | National Environmental Specialist                        |
| PIC   | – | Project Implementation Consultant                        |
| PMU   | – | Project Management Unit                                  |
| REA   | – | Rapid Environmental Assessment                           |
| R/LAP | – | Resettlement and Land Acquisition Plan                   |
| SPCR  | – | Strategic Program for Climate Resilience                 |
| SEU   | – | Social and Environmental Unit                            |
| SWMC  | – | Sub-watershed Management Committee                       |
| VDC   | – | Village Development Committee                            |
| VDT   | – | Village Development Team                                 |

## WEIGHTS AND MEASURES

|      |   |                        |
|------|---|------------------------|
| cm   | – | centimeter             |
| cu m | – | cubic meters           |
| Ha   | – | hectare                |
| km   | – | kilometer              |
| L    | – | liter                  |
| m    | – | meter                  |
| masl | – | meters above sea level |
| sq m | – | square meter           |

## **NOTE**

- (i) In this report, "\$" refers to US dollars.

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## **A. INTRODUCTION**

1. The Project Building Climate Resilience of Watersheds in Mountain Eco-regions (BCRWME, the 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 with interventions 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.

2. 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.

3. The project preparatory technical assistance (PPTA) carried out feasibility studies of sample subprojects representative of the proposed interventions. Environmental assessments of the sample subprojects were also completed following the requirements of the ADB's Safeguard Policy Statement (2009); and the GON Environmental Protection Act 1997(EPA) and Environmental Protection Rules 1997 with amendment 2007 (EPA). The remaining subprojects will be identified and developed during project implementation. This Environmental Assessment and Review Framework (EARF) has been prepared to guide the environmental due diligence on subprojects prepared during the project implementation.

4. A Project Management Unit (PMU) will be established in Dadeldhura district. The PMU will guide work undertaken by three district soil conservation offices (DSCOs) – Dadeldhura, Doti, and Baitadi. The three DSCOs manage subprojects in the Lower West Seti and Budhi Ganga watersheds that are within six districts: Achham, Baitadi, Bajhang, Bajura, Dadeldhura, and Doti. The PMU and DSCOs are responsible for overseeing the planning of subprojects (feasibility and detailed design), approving designs, and supervising construction and implementation. Private contractors will be procured through national competitive bidding for construction of ponds and tanks and any skilled labor needed for catchment protection works. Field Technical Teams comprised of DSCO staff and consultants engaged by the PMU will be responsible for preparing subproject preparation reports (SPPRs) under the supervision of senior PMU consultants. The SPPRs will document environmental due diligence and assessment required under this EARF.

5. This EARF will apply to all subprojects under the project to ensure that environmental issues are appropriately addressed and mitigated to acceptable levels. They are intended to provide effective integration of environmental assessment and management planning into the subproject preparation process, in accordance with the laws of Nepal, and in conformance with the requirements of ADB.

## **B. ASSESSMENT OF LEGAL FRAMEWORK AND INSTITUTIONAL CAPACITY**

6. **Government of Nepal Environmental Assessment requirements:** Rule 3 of the Government of Nepal's (GON) Environmental Protection (EP) Rules (1997) stipulates that proposals of the types listed under Schedule 1 require Initial Environmental Examination (IEE), and types listed under Schedule 2 require Environmental Impact Assessment (EIA). These schedules are appended to the EPR. None of the types of subproject interventions proposed

under the Project are listed in either of these two schedules, and hence the GON rules do not require that an EIA or an IEE be conducted for any of the types of proposed subprojects. The English translation of Schedule 1 of the EP Rules includes in its list “watershed management plans”; this is in reference to the Watershed Protection Act (1996) that confers protection on watersheds used for water supply and generation of hydropower, and requires IEEs for project activities within those watersheds that might degrade use. Watershed management conservation plans of the type developed under the Project do not require preparation of an IEE. The original Nepali version of the EP Rules is clear in regard to this requirement.

7. ADB's Environmental Safeguard Requirements: ADB has classified projects under four categories depending on the category of its most environmentally sensitive component, including direct, indirect, cumulative and induced impacts in the project's area of influence. The categories are (i) Category A – where projects are likely to have significant adverse environmental impacts that are irreversible, diverse or unprecedented. The impacts may affect an area larger than the sites or facilities subject to physical works. Such projects require an Environmental Impact Assessment (EIA); (ii) Category B – where potential adverse impacts are less than those of Category A. Impacts are generally site specific, few if any are irreversible, and in most cases mitigation measures can be designed more readily than for Category A projects. Such projects require an IEE; (iii) Category C, which incurs minimal or no adverse environmental impact and thus does not require environmental assessment, although environmental implications need to be reviewed. Environmental Due Diligence will be adequate for such projects; and (iv) Category FI refers to projects that involve investment of ADB funds through a financial intermediary, and is not applicable to the present Project. The project will exclude the financing of any subproject which is classified as category A.

8. The two key parties involved in the environmental assessment of the subprojects under the project are the DSCOs of the selected Project districts (the Proponents) and the DSCWM's PMU. DSCWM is the Executing Agency (EA) for the project. Responsibilities for preparation of IEEs / Due Diligence Reports (DDRs) and obtaining approvals rests with the project proponent (the PMU and DSCOs), and review of the report and giving approval for IEE report rests with DSCWM and ADB.

9. DSCOs and the DSCWM generally lack capacity in conducting environmental assessment, and implementing, monitoring and reporting of the environmental management plans (EMP). The PMU will include a Senior Environment Specialist who will guide and monitor the DSCOs in environmental assessment and monitoring tasks. The environment specialist will be primarily responsible to prepare the IEEs. The project will include training of DSCWM and DCISO staff to conduct environmental assessment including preparation of the IEEs and DDRs for the subprojects. At least one DSCO staff member will be assigned to a Field Technical Team (FTT) that will be primarily responsible for preparation of environmental assessments/DDRs, and for monitoring EMPs. One of the DSCO FTT members will be designated an Environment Officer and will be responsible for completing the environmental checklists and preparing the DDRs. S/he will also be responsible in coordinating safeguard compliance matters with the technical team, monitoring EMP compliance during implementation, undertaking corrective measures, preparing compliance report, and maintaining linkage with the safeguard units of PMU, DDC and DSCWM..

### **C. PROJECT ACTIVITIES AND ANTICIPATED ENVIRONMENTAL IMPACTS**

10. **Project Activities:** The project will assist in achieving the government policies by enabling communities in vulnerable ecosystems to have improved access to and reliability of

water resources with equal right for all gender and irrespective of caste or ethnic group. The project will promote local people's participation in planning, implementation, operation, maintenance, protection and benefit sharing of interventions/activities related to water access and reliability.

11. The project addresses the shortage of water and the main outputs of the project envisaged are:

- (i) participating communities have new water storage infrastructure and improved catchment management;
- (ii) communities and government manage water and land in an integrated and inclusive manner within 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.

12. The selection of the subprojects will be made in conjunction with the community to gain benefit of local knowledge and to ensure the infrastructure meets community needs. Implementation of subprojects will improve water access and reliability for communities at risk from climate change and particularly address water shortage issues that result in additional labor for women and difficulties for disadvantaged groups such as the Dalit and Janajati who are often required to subordinate their water needs when there is water shortage. Increased water availability will also allow additional crop production and reduce animal disease from polluted water.

13. The proposed structural interventions to be financed under the project are as follows:

- (i) Development and protection of spring sources through the construction of enclosed *spring boxes* for the collection of water in the case of single point spring sources and through infiltration galleries in the case of spring flow occurring over a large area (seep areas).
- (ii) Protection of the immediate area surrounding the spring by *fencing and improvement of local drainage*, leading surface flow away from the enclosed spring boxes or infiltration galleries. Treatment of gully erosion and slope/landslide stabilization within the selected catchment management area, in areas irrigated by water conservation ponds and treatment of erosion or slope stability problems that directly threaten the beneficiary communities
- (iii) Construction of *drinking water storage tanks* for overnight storage of the source flow, to meet the peak demand for drinking water in the morning. As part of the storage facility a well drained area with a minimum of 3 stand-posts will be provided to allow multiple users draw water at the same time, thus reducing the waiting time at the spring source.
- (iv) Construction of *conservation ponds* for irrigation. Overflow from a drinking water storage tank could be collected, and by means of a transmission pipe line to water conservation pond or multiple ponds near suitable agriculture land.

14. The majority of the civil works under the project will be small-scale. Earthworks and trenching will generally be done manually and concrete and cement masonry structures erected using local skilled labor. Most aspects of the proposed works engage a limited number of workers to lay piping, construct forms for reinforced concrete structures and prepare ground for planting soil stabilizing grasses and shrubs. Bank protection, landslide stabilization and gully erosion control will utilize gabions and bio-engineering methods. Other features of subprojects could include river bank protection and intakes, off-take structures, sediment traps, lining of

canals, covered canal sections or pipes where the canal passes through areas of permeable soils or landslide zones, cross drainage works, drop structures, division structures, and outlets. Therefore, with an aim to manage and conserve watersheds, the environmental benefits of the project outweigh minor adverse impacts incurred during construction.

15. **Anticipated Environmental Impacts:** Minor impacts are possible on subprojects regardless of the environmental classification. Project staff responsible for development of subprojects will be trained to observe, recognize and avoid impacts, including DSCOs staff working as Environment Officers and consultants working in subproject development. Impacts – though minor – can accumulate and cause nuisance, and should be mitigated at each stage of the subproject development. Table 1 describes likely environmental impacts stemming from the mix of possible interventions applicable to the types of subprojects envisaged, proposes potential mitigation measures, and identifies the responsible party for initiating action and/or for monitoring.

**Table 1: Potential Impacts and Mitigation Measures**

| Potential Effect   | Mitigation measure   | Performance and Monitoring Duties  |
|--|--|--|
| <b>Design and Location</b>                                   |  |  |
| Inequitable access for household water and irrigation        | Develop prior understanding of water use agreeable to community  | FTTs including DSCO Environment Officers, monitored by PMU Sr Environment Specialist                   |
| Water conflicts with downstream communities                  | Investigate potential for impact and conduct stakeholder consultations with downstream communities to assure there is no conflict with existing uses |  |
| Disruption of hydrology                                      | Locate to intercept sufficient but not excess runoff; provide spillway as needed by ensuring prevention of erosion at the escape                     |  |
| Slope destabilization  | Slope and soil conditions evaluated to assure safety and stability   |  |
| Impact on forests  | Locate facility where trees are not required to be cleared or include replacement in cost estimate   |  |
| Unstable soils used in embankment results in failure         | Design embankment to assure stability, require treatment with grasses to prevent erosion   |  |
| 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     |  |
| Design of piping results in leakage and eventual failure     | Piping installation designed with proper bedding to prevent movement in surrounding soil and stress leading to failure                               |  |
| Location of structures                                       | Avoid loss of private and community land and property unless it is willingly donated by owner/s  | FTTs including DSCO environment officers   |
| <b>Construction:</b>   |  |  |
| Clearance of trees and undergrowth                           | Minimize removal of trees; coordinate with CFUGs/DFO for clearing and follow compensatory plantation policy of DOF (1:25)                            | Contractor, monitored by DSCO Environment Officer<br>Contractor, monitored by DSCO Environment Officer |

|  |   |                                |
|--|---|--------------------------------|
| Excess spoil and sediment loss   | Balance cut-and-fill, dispose of excess earth at approved location; trenches running down slope (against contour) to be compacted and sodded to prevent rilling |                                |
| Impacts due to quarry and borrow areas   | Use materials from immediate area in construction, obtain prior approval from DSCO and VDC for borrow, re-grade area after use                                  |                                |
| Damage to trees in area  | Prevent damage to trees and vegetation; no cutting of firewood  |                                |
| Soil loss in the event of heavy rainfall during installation                       | Stop work during heavy rains, and install silt protection measures at all work sites.   |                                |
| Movement of equipment and people through settled areas                             | Avoid disruption of village life and notify people in advance of work in their immediate area   |                                |
| Loss of topsoil  | Stockpile topsoil for final dressing at site  |                                |
| Excess erosion   | Seed and plant exposed slopes after construction  |                                |
| Disruption of village life   | Minimize impact on local community, enact safe work practices; barricade work site  |                                |
| Worker and community health and safety   | Assure safe work practice, and prevent access by local people   |                                |
| <b>Operations:</b>   |   |                                |
| Erosion above pond causes infilling and potential contamination                    | Catchments for water harvesting protected by limiting access and maintaining good vegetative cover  | DSCOs and CDGs, CFUG, VDC/AFEC |
| 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 accepted grazing areas             |                                |
| Animals contaminate surface supplies   | Prevent access to surface supplies; Project to provide alternative watering points  |                                |
| Surface contamination in recharge zones could affect water supply quality          | Set out criteria for land use in recharge zone and educate locals; restrict access  |                                |
| Effects on downstream water use  | Assure no disruption of existing water uses   |                                |

AFEC = Agriculture, Forest, Environment Committee; CDG = Community Development Group; CFUG = Community Forest User Group; DSCO = District Soil Conservation Office (DSCO); VDC = Village Development Committee

## **D. ENVIRONMENTAL ASSESSMENT OF SUBPROJECTS**

### **1. Environmental Criteria for Subproject Selection**

16. The following environmental criteria for subproject selection will apply during the implementation of the Project:

- (i) Activities that may be permitted within forest land, include catchment protection measures (i.e., fences and conservation plantation of native grass, shrub, tree species, treatment of gullies and small scale landslides), construction of water collection chambers, spring boxes, or infiltration galleries, conservation ponds and transmission lines (pipes). When approving such subprojects the Project shall ensure that subproject activities will not lead to encroachment of forest land by communities for settlement purposes, agricultural activities or grazing lands. The Project shall seek prior approval of the Ministry of Forests and Soil Conservation through relevant district forest office if there is a need to fell trees to construct water storage structures in some subprojects.
- (ii) Land needed for ponds or tanks will only be acquired from willing donors, without involuntary resettlement, using a process to ensure land donors are not coerced;
- (iii) Subprojects will have no negative impact on downstream or other water users;
- (iv) Subprojects will not be located in, or cause any direct or indirect threat to, ecologically sensitive areas such as national parks, wildlife sanctuaries, wetlands, conservation areas of international significance, or areas of high historical, archeological, cultural or aesthetic value;
- (v) Subprojects will not obstruct the main flow of perennial streams or watercourses;
- (vi) Subprojects will not disrupt the life and property of communities, or indigenous and tribal groups;
- (vii) Subprojects will not encroach on cultural features like places of worship, graves, cemeteries and historical monuments.

### **2. Rationale for Environmental Category of Subprojects**

17. Subprojects of the types proposed under the project have minor or insignificant environmental impacts and are classified as Environmental Category B or C under the ADB's system of classification as presented in the ADB Safeguard Policy Statement (2009). It is expected that most of the interventions will be classified as Category C with the exception of some of the newly constructed earthen ponds. Some of the earthen ponds (based on size, location, and number) may have the potential for causing minor environmental impact during construction, and subprojects of this type are best classified as Environmental Category B and their potential adverse effects assessed through preparation of an Initial Environmental Examination (IEE). The Rapid Environmental Assessment (REA) checklist will help determine which of the subprojects may be classified as category B. Other subprojects with the principal feature of rehabilitation of an existing earthen pond or construction or rehabilitation of a concrete tank are classified as Environmental Category C because environmental impacts associated with projects of this type are judged to be insignificant and can be assessed using a Due Diligence Report (DDR). Table 2 summarizes the principal types of schemes expected to be implemented, types of auxiliary activities associated with the subproject, and the environmental category anticipated for the overall activity.

**Table 2: Summary of Subproject Types**

| <b>Infrastructure Type</b>                 | <b>Catchment Interventions*</b>   | <b>Environmental Category</b>  |
|--|---|--|
| Some of the Earthen Ponds—New Construction | Upstream catchment management; re-vegetation/ tree and shrub planting; fencing and access control; landslide control; sheet/rill/ gully erosion control; inlet/outlet structures; piping/open slot drains; water taps; livestock access | Environmental Category B: minor environmental impact during construction |
| Rehabilitation of Earthen Pond             |   | Environmental Category C: Insignificant impact                           |
| Reinforced Concrete Tank—New Construction  |   | Environmental Category C: Insignificant impact                           |
| Rehabilitation of Masonry or Concrete Tank |   | Environmental Category C: Insignificant impact                           |

\* Auxiliary elements in general apply to all primary subproject types; the use of any element depends on actual conditions at the site.

18. Findings of the environmental assessments conducted for the three sample subprojects indicate that the proposed activities under the subprojects will have minor or insignificant impact on the environment which can easily be mitigated.

**a. GON's Environmental Assessment Requirement**

19. The environmental assessment requirement of GON does not require an EIA or IEE study for any of the types of activities listed in the above sections. Undertaking IEEs for subprojects incorporating these activities is not required under GON rules.

**b. ADB's Environmental Categorization**

20. Environmental Assessments (IEE and DDRs) carried out for the sample subprojects indicate that they are unlikely to have significant adverse environmental impacts in the subproject areas. Positive impacts of subprojects include storage of water for community use in upland areas, re-vegetation and stabilization of soils and embankments, and recharge of groundwater and soil moisture. These outweigh any adverse impacts, which in any case are temporary and minor.

21. Some of the newly constructed earthen ponds, based on location, size, and number, may have the potential to create minor environmental impacts that can be mitigated and hence are classified as Category B. IEEs will be prepared for the subproject types classified as B. Secondary activities that are incorporated into the subproject such as gully erosion control and degraded land rehabilitation will also be taken into account in the environmental assessment.

22. Most subprojects remain as Category C and DDRs will be prepared for these subprojects. The Project as a whole is classified as environment 'Category B'.

23. The environmental assessment reports of the sample subprojects are presented in separate documents under the following headings (see Supplemental Supporting Documents of the Project Final Report):

- (i) Pipal Khola Pond and Catchment Management Subproject, Kuldevmandu VDC, Bajura District (IEE)
- (ii) Thuldhara Tank and Catchment Management Subproject, Amargadi Municipality, Dadeldura District (DDR)

- (iii) Nagardaha Pond and Catchment Management Subproject, Kalikasthan VDC, Doti District (DDR)

### 3. Environmental Assessment Procedure

24. The environmental assessment procedure for the subprojects is described in the following sections.

#### a. Environmental Screening

25. Members of the FTTs, especially the DSCO officer designated as Environment Officer, will undertake environmental screening of the subprojects using a REA checklist (see Annex 1) during the initial identification of the proposed subproject. The findings of the environmental screening will conclude if an IEE is required or an environmental DDR will be adequate. If the DSCO environment officer is uncertain as to if the project should be classified as a B or C, the senior environment specialist attached to the PMU will visit the site and make a determination.

#### b. Process for Environmental Due Diligence Report (DDR)

26. The Environmental DDR is a brief statement regarding the subproject. The report is prepared using the following procedure:

- (i) **Collection of information:** members of the FTTs, supported by staff at the PMU, will collect information during the initial identification of the project and document any significant environmental concerns. Information from stakeholders will be collected, including community members and officials of the local VDC.
- (ii) **Preparation of Environmental DDR:** Background information on the physical, biological and socio-economic environment of the subproject area will be based on direct observation by the project identification team, primarily the DSCO Environment Officer (member of FTT) with support and guidance from the PMU's Senior Environment Specialist. A REA checklist shown in Annex I will be completed on the basis of field observations, during which any impacts are identified. The template for the Environmental DDR is presented in Table 3.

**Table 3: Template for Environmental DDR**

|  |
|--|
| <ol style="list-style-type: none"> <li>1. Introduction<br/>(Brief description of the subproject)</li> <li>2. Project Proponent and Address</li> <li>3. Description of the Subproject with Location Map</li> <li>4. Environmental Screening and Checklist</li> <li>5. Status of Public Consultation and Disclosure</li> <li>6. Conclusion and Recommendation</li> </ol> |
|--|

#### c. Process to Prepare IEE

27. As mentioned in paragraphs 18 and 22, few subprojects involving new construction of earthen ponds will be subjected to the IEE process. Some aspects of this procedure as it applies to the present Project include the following:

- (i) Scoping: The IEE scoping is a planning exercise to determine the requirements for the IEE study. Scoping lists the likely environmental impacts, methodology of assessment, extent of impacts and mitigation options, and the IEE study schedule.
- (ii) Assessment Methods: An outline of the activities for conducting IEE study is presented below:
  - Desk Study: Review of information such as maps, reports, and EARF for the Project. Checklist for collecting site information is also finalized.
  - Consultations: Villagers and local stakeholders (community groups and resource users) consulted through focus group discussions. Discussion with concerned government offices at local level (forestry; water supply) also undertaken.
  - Field Assessment: Assessment of significant environmental issues conducted.
  - Sampling and Testing: Geotechnical testing may be needed to confirm use of local materials for embankment and assure stability.
  - Identification of Environmental Impacts and Mitigation Measures: The impacts will be identified in terms of their likelihood and magnitude. Table 1 lists typical environmental impacts that may occur on the subproject type classified as Category B.

28. The Senior Environment Specialist at the PMU will be assisted by the DSCO Environment Officer in preparing any IEEs. S/he will have overall responsibility for preparation of IEEs and environmental due diligence reporting.

29. **Environmental Management Plan:** IEEs prepared under the project will include EMPs that specify monitoring requirements for potential environmental impacts. Monitoring is aimed at assuring performance of mitigation measures, and involves specifying the method of measurement, relevant indicators, frequency of monitoring, and cost and responsible party for undertaking the monitoring. The contents of the IEE report should conform to guidance provided in ADB's 2009 Safeguard Policy Statement. The EMP will form part of the contract documents and if required will be updated during the construction phase. All bid documents will include a requirement to incorporate necessary resources into the contractor's bid to implement mitigation measures specified in the EMP.

#### **E. CONSULTATION, INFORMATION DISCLOSURE, AND GRIEVANCE REDRESS MECHANISM**

30. The approach adopted for the project ensures that all subprojects are community-driven ensuring a high level of public awareness and involvement at each stage. A Consultation, Participation and Communications Plan (the CPC Plan) has been incorporated into project implementation guidelines. The CPC Plan addresses procedures for public consultation and disclosure, the main elements of which include (i) obtaining advice and concurrence among the local community on design and siting of subprojects during the planning phase; (ii) provisions for a grievance redress mechanism for any affected person; and (iii) project and institutional support for transferring ownership to the community for operation, maintenance and management of subproject works after construction.

31. Steps involved in public participation will include (i) initial confirmation of genuine subproject demand, (ii) participatory, comprehensive and accurate subproject preparation, (iii) strong community support for the subproject, (iv) committed participation of the Community Development Groups (CDGs) in implementation, and (v) effective and transparent communication between the FTTs and VDCs. Many of these elements are already in place for DSCO physical intervention activities at present, and will be extended and reinforced during project implementation.

32. Information related to the project including environmental information will be made available at a publicly accessible place in a form and language understandable to the general public. For projects which require IEEs, it will be necessary to provide a single page description in Nepali that reviews how key issues have been dealt with in the IEE. IEEs and DDRs will be made available to any member of the public, if requested. IEEs will be made available on ADB's web site.

33. **Grievance Redress Mechanism:** Public grievance among local stakeholders may be expressed due to inconvenience or loss of/damage to private property during the conduct of the work. Grievances from qualified complainants, those living in the vicinity of the subproject or otherwise affected by the subproject, will be addressed through a grievance redress mechanism. The District Implementation Coordination Committee (DICC) chaired by the Local Development Officer (LDO) will serve as the grievance redress committee (GRC) at each of the districts. The composition of the DICC is provided in the Project Administration Memorandum, and where necessary other parties (such as representatives of the affected party, contractor, or beneficiary group) may be brought into the committee to address specific grievances.

34. The office of the District Development Committee will appoint a person to accept complaints of affected persons (AP). The APs will register their grievances with either the VDC secretary or the appointed person at the DDC office, who will document the complaint in the "grievance register book". The DICC will be convened to review the complaint and determine corrective action, if need be. Since the DICC will have to be convened at short notice, at a minimum the LDO, a representative of DSCO, and a community representative should be present. If need be other members will be consulted to help respond within the given time frame. The DICC will prepare a formal, written assessment that describes the complaint and confirms whether the grievance is genuine. A response on the matter will be provided to the APs within 7 days by the DICC in consultation with necessary parties. The DICC will use the register to book to list (i) date of grievance registered, (ii) name / address of complainant, (iii) nature of grievance, and (iv) response. In case the DICC is unable to resolve the issue in 7 days, the matter will be forwarded to the office of chief district officer (CDO), who will investigate, assess and resolve the issue within 30 days of receiving the grievance. The corrective action will be carried out as agreed and documented in the grievance register book. The outcome will also form part of the progress reports to ADB. During the entire process, the alternative to appeal at court will remain open if the complainant wishes. The details and information on use of this grievance redress mechanism will be communicated to the local communities and beneficiaries by the FTTs working in the subproject area.

## **F. INSTITUTIONAL ARRANGEMENT AND RESPONSIBILITIES**

35. A full-time Project Director (Class 2 DSCWM staff) will head the PMU and will be responsible for all aspects of project implementation, including environmental management. The FTTs supported by the DSCO staff designated as environment officers will conduct environmental screening. The Environment Officer will prepare DDRs for Category C

subprojects and ensure they are included in the Subproject Preparation Report (SPPR). A Senior Environment Specialist will be engaged by the PMU as a consultant who will work on an intermittent basis. S/he will be responsible for training the DSCO Environment Officers and monitoring the quality of environmental screening and due diligence. S/he will check and clear each DDR before the SPPR is approved. The Senior Environment Specialist will also confirm the categorization of subprojects, and will be responsible for preparing IEEs, with the assistance of the DSCO environment officers, for any Category B subproject. S/he will also conduct environment safeguard monitoring for the project regularly.

36. The institutional responsibilities and authorities during the subproject implementation cycle are listed in Table 4.

**Table 4: Institutional Responsibilities for Environment Management**

| Subproject Stage   | Responsible Person and Organization                               | Responsibilities  |
|--------------------|---|---|
| Overall            | Senior Environment Specialist at the PMU                          | <ul style="list-style-type: none"> <li>• Support capacity development of environmental planning, monitoring, and management</li> <li>• Guidance for environmental planning, periodic monitoring and reporting</li> <li>• Biannual review and monitoring of environmental management activities of the project, and training on corrective actions, if any</li> <li>• Review the REAs prepared by DSCOs to ensure subprojects have been categorized accurately</li> <li>• Quality assurance of DDRs</li> <li>• Prepare IEEs</li> </ul> |
|                    | DSCO Environment Officer  | <ul style="list-style-type: none"> <li>• Clearance of REA screening</li> <li>• Preparation of DDRs</li> <li>• Assist in the preparation of IEEs</li> <li>• Monitoring of EMPs</li> </ul>  |
| Screening          | FTTs supported by the DSCO Environment Officer                    | <ul style="list-style-type: none"> <li>• Screen the subproject requests in light of environmental and social criteria</li> </ul>  |
| Planning           | DSCO Environment Officer  | <ul style="list-style-type: none"> <li>• Prepare DDRs for Category C subprojects</li> </ul>   |
|                    | Senior Environment Specialist                                     | <ul style="list-style-type: none"> <li>• Endorse DDRs for Category C subprojects</li> <li>• Prepare IEEs with EMPs for Category B subprojects; obtain approval from ADB</li> </ul>  |
| Detailed Design    | Water Resources Engineers of the FTTs, supported by PMU Engineers | <ul style="list-style-type: none"> <li>• Integrate environment issues of IEEs/ DDRs in design and contract documents</li> </ul>   |
| Construction       | Contractor  | <ul style="list-style-type: none"> <li>• Implement required environmental measures</li> </ul>   |
|                    | DSCO Environment Officer  | <ul style="list-style-type: none"> <li>• Supervise implementation of environmental measures</li> </ul>  |
| Community Outreach | FTTs supported by DSCO Environment Officers                       | <ul style="list-style-type: none"> <li>• Implement specific environmental mitigation measures incorporated in the community outreach programs</li> </ul>  |

DDR = Due Diligence Report, EMP = Environmental Management Plan, IEE = Initial Environmental Examination, DSCO = District Soil Conservation Office, FTT = Field Technical Team, PMU = Project Management Unit

## **G. MONITORING AND REPORTING**

37. During subproject implementation, the DSCO Environment Officer will monitor and document the status of environmental management in the subprojects in keeping with the

requirements of the EARF. The Senior Environment Specialist will conduct periodic reviews on the status of environmental assessment, due diligence, and EMP monitoring. S/he will submit to the PMU and ADB annual environmental monitoring reports<sup>1</sup>, and provide inputs to progress reports submitted ahead of ADB review missions. Issues will generally be solved at the local level when they arise, but any significant issues may be documented in the environmental monitoring reports and addressed during ADB review missions.

## **H. STAFFING REQUIREMENTS AND BUDGET**

38. The project staffing requirements are described in the Project Administration Manual (PAM). In brief, the PMU based at the DSCO in Dadeldhura will be staffed by a technical team comprising a Senior Environment Specialist (national consultant). The terms of reference for the Senior Environment Specialist is included in the PAM. Subproject preparation and implementation will be supported by multi-disciplinary FTTs. One of the DSCO staff included in the FTT will be designated as Environment Officer.

## **I. MITIGATION AND MONITORING COSTS**

39. Mitigation measures are generally part of the project design, are undertaken as part of design process, or are readily incorporated into the cost of construction and alongside other aspects of operations. Therefore costs of mitigation will be included in the bills of quantity. As such there are no clearly separable costs associated with mitigation measures identified in the EARF. The cost of government staffing at the DSCO offices will be provided in the GON budget for the project. Consulting services needed to staff the PMU and FTTs are described in the PAM.

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<sup>1</sup> The environmental monitoring reports will be disclosed on ADB's and DSWCM's websites.

**Annex I**  
**Environmental Assessment Checklist for Subprojects under ADB TA 7883-NEP**  
**Building Climate Resilience of Watersheds in Mountain Eco-Regions**  
**(The checklist will be attached to the subproject proposal)**

| Screening Questions   | Status |    | Remarks |
|---|--------|----|---------|
|   | Yes    | No |         |
| <b>A. Project Siting</b>  |        |    |         |
| Is the Project area near or within the following environmentally sensitive areas?   |        |    |         |
| ▪ Cultural heritage site  |        |    |         |
| ▪ Protected Area  |        |    |         |
| ▪ Wetland   |        |    |         |
| ▪ Buffer zone of protected area   |        |    |         |
| ▪ Special area for protecting biodiversity  |        |    |         |
| Will the Project obstruct the main flow of perennial streams or watercourses?   |        |    |         |
| Is the Project on government land or on land freely provided to the project?  |        |    |         |
| Does the Project require involuntary resettlement, or compensation other than in-kind negotiated within the community?  |        |    |         |
| <b>B. Potential Environmental Impacts during Construction</b>   |        |    |         |
| Will the Project cause construction impacts due to the movement of equipment through communities?   |        |    |         |
| Will the Project require the use of labor camps for housing construction workers?   |        |    |         |
| Will the Project cause excessive air emissions from equipment, or dust from construction activity?  |        |    |         |
| Will the Project release excess sediment to streams?  |        |    |         |
| Will the Project require removal of trees?  |        |    |         |
| Will access roads need to be constructed?   |        |    |         |
| Do hazardous conditions exist for workers performing the work?  |        |    |         |
| <b>C. Potential Environmental Impacts during Operations</b>   |        |    |         |
| Will the project have a negative impact on downstream water users?  |        |    |         |
| Will the project adversely affect ecology in the area, including species diversity?   |        |    |         |
| Will the project give rise to social conflicts regarding tenure and use of the land?  |        |    |         |
| Will the project cause in-migration with opening of roads to upland areas?  |        |    |         |
| Will the project adversely affect tourism and recreational opportunities in the area?   |        |    |         |
| Will the project create conflicts with established land management policies?  |        |    |         |
| Will the project cause ecological problems due to land clearance prior to restoration e.g., soil erosion, disruption of hydrological cycle, loss of nutrients and soil fertility? |        |    |         |
| Will the project cause other ecological problems e.g., pollution of water bodies from fertilizers, pesticides, and herbicides?  |        |    |         |
| <b>D. Potential Environmental Benefits</b>  |        |    |         |
| Reduction in deforestation  |        |    |         |
| Reduction in soil erosion   |        |    |         |
| Enhancement in water availability   |        |    |         |
| Increase in aesthetic environmental value   |        |    |         |
| Improved quality of life  |        |    |         |

Checklist is prepared by (name and designation)

Main impacts influencing environment category

- 1.
- 2.
- 3.

Project is categorized as B.....C.....or B/C (needs verification by environment specialist).....(please check the appropriate category)

Categorization approved by (name and signature of senior environment specialist of PMU)