



Concept Paper

Project Number: 44214
September 2011

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

I. THE PROJECT

A. Rationale

1. The Project will support the implementation of the Strategic Program for Climate Resilience (SPCR) which has recently been developed by the Government of Nepal in partnership with Asian Development Bank (ADB), International Finance Corporation (IFC) and the World Bank and was endorsed by the Pilot Program for Climate Resilience sub-committee of the Climate Investment Funds (CIF) on 28 June 2011.¹ Within the overall framework of the SPCR, the Project will enable communities in mountainous ecosystems that are significantly vulnerable to climate change impacts to have improved access to and reliability of watershed and water resources.

2. Nepal is one of the most climate vulnerable countries in the world.² To achieve the country's overriding goal of reducing poverty, Nepal will need to manage its substantial climate risks and chart a climate resilient growth path. Moreover, as a mountainous country belonging to the Himalaya region, also known as the '*third pole*' or the '*water tower of Asia*', Nepal faces unique challenges. Temperatures are rising fastest at the highest altitudes, affecting glaciers, snow and ice, and threatening the generally poor and isolated communities that depend upon them. Retreating glaciers and changes in seasonal snow fall and melt will lead to greater uncertainty about water discharge patterns and, in the long run, diminished water availability. This results either in floods that destroy agricultural crops, displace people, kill livestock, and cause sediment deposits on agricultural lands, or in droughts that also destroy crops and affect livestock, and result in insufficient water for drinking and sanitation. In both cases, women's vulnerability increases more than men's as their traditional roles of fetching water, firewood and fodder, and working on agricultural lands will be severely affected with floods and droughts. Furthermore, the coping and adaptive capacities of communities to climate change depends on their knowledge and awareness of climate change risks and appropriate mechanisms to address these risks, and their access to and control over resources, which, oftentimes, the disadvantaged groups do not have.

3. In recent years the Government has given a much stronger emphasis to issues related to the environment and now to climate resilience as well. The Government prepared the *National Adaptation Programme of Action* (NAPA, 2010) through a broad-based consultative process. The NAPA includes 43 adaptation options that have been clustered into 9 priority profiles, 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.

4. The Government's SPCR interventions aim to provide lessons on how best to approach building climate resilience in vulnerable mountain regions. The SPCR will support, strengthen, and facilitate the scaling up of interventions that will build long-term climate resilience in Nepal. In a country where the impacts to water resources constitute the principal climate change risk and the majority of the population derives considerable benefit and livelihood from such resources, SPCR support is a critical entry point to improve the resilience of water resources and associated mountain ecosystems. While different development partners have stepped in to support the Government to implement climate change adaptation measures that focus on short

¹ The Pilot Program for Climate Resilience (PPCR) Sub-Committee approved \$0.9 million in project preparation grant financing, also on 28 June 2011.

² Nepal ranks fourth on a recently published list of countries facing climate risks based on the Climate Change Vulnerability Index.

term (urgent and immediate) measures, the SPCR will focus on longer term interventions aimed at enhancing climate resilience in Nepal. Five SPCR components have been endorsed: Building Climate Resilience of Watersheds in Mountain Eco-Regions (the Project), Building Resilience to Climate-Related Hazards (to be administered by World Bank), Mainstreaming Climate Change Risk Management in Development (capacity building technical assistance to be administered by ADB), Building Climate Resilient Communities through Private Sector Participation (3 small projects implemented by IFC), and Enhancing Climate Resilience of Endangered Species (to be administered by World Bank).

5. Nepal has some experience in integrated water, forest and agriculture management. The Department of Soil Conservation and Watershed Management (DSCWM) under the Ministry of Forests and Soil Conservation (MOFSC) is the lead government institution for watershed management, and its field offices implement small projects to protect and improve water resources and their catchment areas. Water management in Nepal has traditionally been according to administrative rather than geographical boundaries, and Nepal is preparing an Integrated Water Resources Management Policy. DSCWM recognizes that an understanding of the link between the hydrologic cycle and land management at the watershed scale is necessary for effective water resources management, and is keen to boost its capacity in this regard. The 3-year interim development plan (2011-2013) calls for a watershed-based approach.

B. Impact, Outcome, and Outputs

6. The overall impact of the SPCR with its five component projects is to build long-term climate resilience in Nepal through an integrated water resource and ecosystem-based approach focusing on community-based management. The Project will assist in achieving this impact by enabling communities in vulnerable ecosystems to have improved access to and reliability of water resources.

7. The Project's expected outputs are: (i) Participatory watershed management planning to improve water security demonstrated, (ii) Watershed management plans (that address the specific vulnerabilities of women and disadvantaged groups) implemented in priority watersheds, (iii) productivity of water enhanced through effective and efficient use of water in farming systems, and (iv) lessons for improving access to and reliability of water resources in vulnerable mountain regions generated and incorporated into country programs. The watershed management plans will aim at (i) reducing erosion to minimize downstream sedimentation, (ii) enhancing soil moisture and groundwater recharge, and (iii) enhancing surface water conservation and storage.³ A sector project⁴ is envisaged to provide the required flexibility to address (sub)watershed specific interventions. A detailed assessment will be undertaken during project preparatory technical assistance (PPTA) implementation to prioritize watersheds for possible inclusion under the Project.⁵ A participatory planning process with communities and other stakeholders working at the field level will be conducted, and communities will determine appropriate interventions based on options presented to them.

³ Examples of interventions to achieve these outcomes are: rehabilitating degraded watershed lands, regenerating forests, implementing conservation farming, protecting water infrastructure from erosion and floods, constructing or improving small-scale water storage facilities and distribution systems, and applying on-farm water conservation.

⁴ The Project will be prepared based on feasibility studies from two sample watersheds.

⁵ The number of watersheds that could be covered under the Project/component would partly depend on the amount of financial resources allocated to the Project and the cost estimates of various interventions.

C. Investment and Financing Plans

8. The Project will finance the interventions needed to achieve the four outcomes described in the above and the TA needed for project management and technical design, and for assisting communities in implementing project-related interventions. A tentative allocation of \$40.1 million (\$25 million in loan and \$15.1 million in grant) from the Strategic Climate Fund of CIF is being considered at this stage,⁶ see Table 1.

Table 1: Tentative Financing Plan

Source	Amount (\$ million)	Share of Total (%)
Strategic Climate Fund ^a	40.1	Tbd
Government	Tbd	Tbd
Beneficiaries	Tbd	Tbd
Total	Tbd	100.00

^a Under the Pilot Program for Climate Resilience and administered by the Asian Development Bank. The credit terms are: 40-year maturity with 10-year grace period, principal repayments of 2% in years 11-20 and 4% in years 20-40, and semi-annual service charge on the disbursed and outstanding loan balance (0.10% for fiscal year 2010-2011).

Source: February 2011 Strategic Program for Climate Resilience Mission.

D. Indicative Implementation Arrangements

9. The DSCWM is the Project's executing agency (EA). The MOFSC will chair the Project Steering Committee. The Departments of Irrigation, Agriculture, Forests, and Water Supply and Sewerage, and the Ministry of Local Development are expected to be the Project's main collaborating agencies.⁷ Since the Project will follow a decentralized approach, District Development Committees, Village Development Committees, District Soil Conservation Offices, and District Forest Offices are expected to be the main government stakeholders at district, local and watershed level. Other important stakeholders will be nongovernmental organizations (NGOs) and civil society organizations, community forestry user groups, and irrigation and water supply users groups. Participation of the private sector will be sought, especially in promoting water saving technologies. NGOs are expected to play an important role in project implementation, especially in mobilizing and assisting communities in assuming their implementation role.

II. DUE DILIGENCE REQUIRED

10. The process of due diligence has been ongoing throughout SPCR preparation, especially in terms of government policies and strategies, existing development plans and programs, and overall institutional arrangements. The following summarizes the due diligence conducted and to be conducted during the PPTA stage.

⁶ This is Nepal's requested amount from Climate Investment Funds (CIF). However, there is currently a shortfall in the trust fund. Unless additional commitments are made to the fund, the Project's financial allocation will have to be decreased. This will be assessed during PPTA implementation.

⁷ The PPTA will confirm the relevant collaborating agencies and determine their roles and responsibilities. The Department of Water-Induced Disaster Prevention may also be involved for erosion and landslide control measures and reservoir construction. The Ministry of Environment will facilitate the linkage between this Project and the other SPCR projects. The PPTA will also propose institutional arrangements for inter-agency collaboration under the Project.

- (i) **Technical.** Proposed watershed-related interventions will be subjected to technical viability assessments taking into account the specific local conditions and the capacity of the local communities to construct and maintain them. The interventions will be developed in 10-15 sub-basins with participation of local government agencies and the watershed communities. Detailed feasibility studies for 2 watersheds or sub-basins will be conducted under the PPTA. Interventions under ongoing projects with watershed management interventions will be reviewed in terms of effectiveness and sustainability. Current design criteria will be reviewed and revisions proposed in view of projected effects of climate change. Watersheds will be selected where there is evidence that the watershed and water resources conditions have deteriorated due to climate changes during the recent decades affecting the livelihoods of the communities. Considering that a sector modality is envisaged, technical selection criteria will be developed for subproject selection and design during project implementation.
- (ii) **Economic and financial.** Proposed project interventions will be subjected to economic and financial viability assessments, and the impacts of climate change on environmental services will be quantified in the analyses, where possible. Beneficiary cost-sharing arrangements, e.g., payment for ecosystem services, will be proposed taking into account the private and public good nature of the interventions. An appropriate methodology will be developed to be used for subproject selection and the appraisal. A financial management and procurement capacity assessment of the EA will be conducted.
- (iii) **Implementation arrangements and governance.** Implementation arrangements will be assessed taking into account the strength and weaknesses of the various stakeholders, especially of the EA. The capacity of potential implementation partners (government and non-government) and their internal governance will be assessed, and capacity strengthening and governance improvement measures will be proposed.
- (iv) **Poverty and social.** A comprehensive poverty and social analysis will be carried out to identify the socio-economic profile of the communities in the sample watersheds, the expected benefits, competing needs and constraints, and the ability of the poor and vulnerable groups within the communities to participate and benefit from the Project. Poverty and social criteria will be developed for subproject selection. A project gender analysis will be undertaken and a gender action plan will be prepared which will address constraints to participation by women and other vulnerable and disadvantaged groups in the design and implementation of the watershed interventions. Considering that indigenous peoples may reside in the selected watersheds, the extent to which such groups are vulnerable in accordance with ADB Safeguard Policy Statement (2009) will be assessed and an indigenous peoples development framework will be prepared.
- (v) **Safeguards.** Considering the small-scale of the envisaged project interventions, the Project's interventions are not expected to require land acquisition. No resettlement is foreseen. The overall environmental impact of the Project is expected to be positive but individual interventions will be subjected to an environmental assessment under the PPTA. Initial categorization is (i) environment, B; (ii) involuntary resettlement, C; and (iii) indigenous peoples, B.

III. PROCESSING PLAN

A. Risk Categorization

11. The Project is categorized as complex because ADB has not had experience with the forestry sector in Nepal since 2000 and EA capacity to implement an externally-financed investment project needs to be assessed.

B. Resource Requirements

12. Three ADB staff will be involved in Project preparation for a total of 10 person-months (indicative). The proposed PPTA requires 18 person-months of international consultants and 60 person-months of national consultants (see Appendix 4). Staff consulting resources (using CIF funds) may also be needed to provide on-the-ground processing support.

C. Processing Schedule

13. Major milestones up to loan/grant effectiveness are listed in Table 2 below.

Table 2: Proposed Processing Schedule

Milestones	Expected Completion Date
Concept Paper Clearance	III September 2011
PPTA Implementation	November 2011 to Oct 2012
Loan/Grant Fact-Finding Mission	November 2012
Management Review Meeting	January 2013
Loan/Grant Negotiations	February 2013
Board Consideration	April 2013
Loan/Grant Effectiveness	August 2013

PPTA = project preparatory technical assistance
Source: ADB estimates.

IV. KEY ISSUES

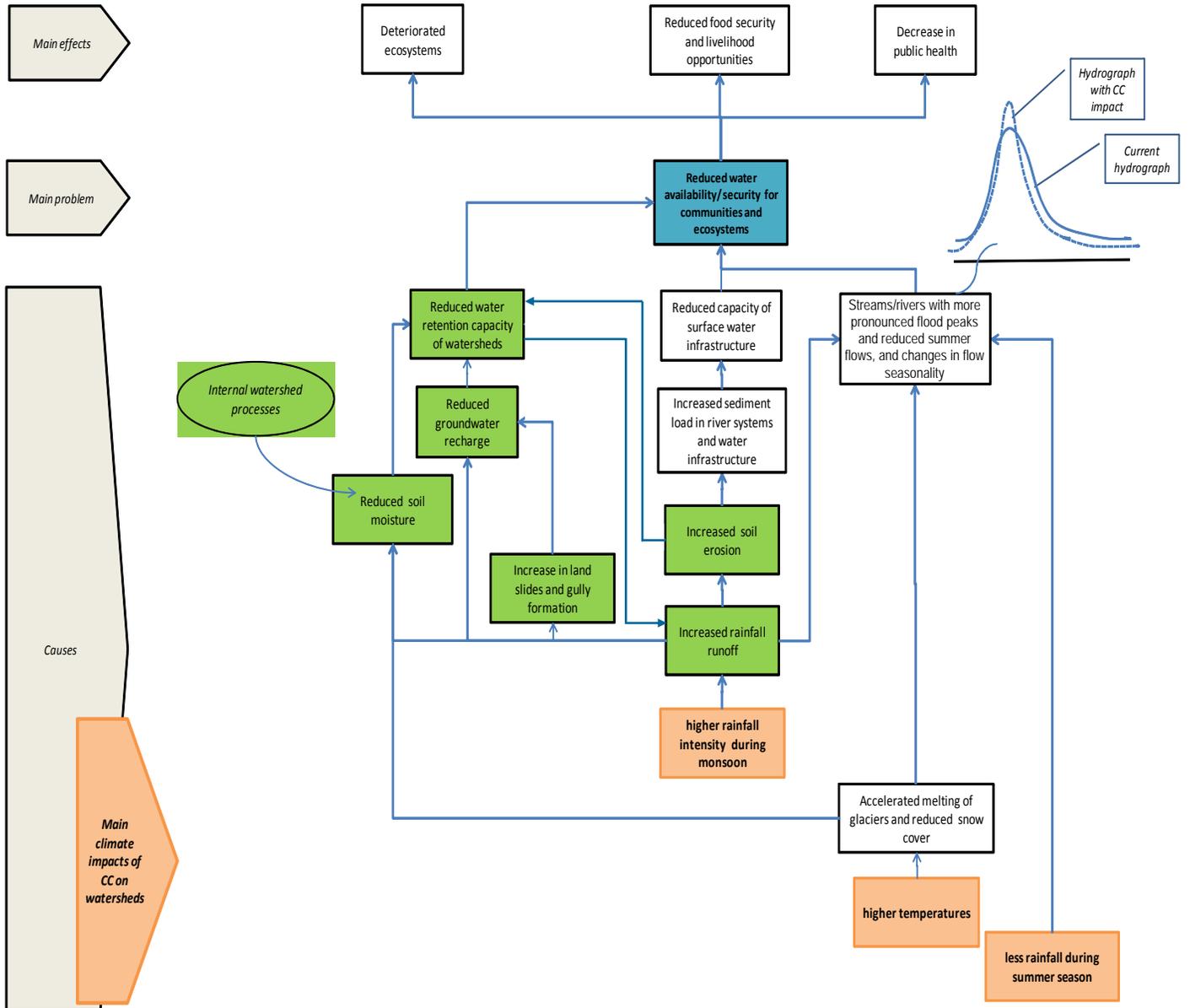
14. **EA Capacity.** Government's ownership in preparing the SPCR has been high, and MOFSC and its DSCWM are keen to work with ADB on watershed management. DSCWM has been deemed as the government agency mandated to cover watershed management, but does not currently examine how its soil and water conservation measures at the micro-scale affect the complex hydrologic cycle of the watershed. Significant capacity-building of DSCWM will need to be incorporated into Project design, building on its current strengths.

BASIC PROJECT INFORMATION

Aspects	Arrangements
Modality	Combination of project loan and grant.
Financing	ADB administered SCF under the PPCR \$40.1 million (loan \$25 million and grant \$15.1 million)
COBP/RCOBP	The SPCR is cited in the CPS and included in the COBP (ADB. 2010. Country Operations Business Plan 2011-2013: Nepal). The SPCR has been divided into five components, two of which will be administered by ADB: (i) the Project, and (ii) a TA entitled Mainstreaming Climate Risk Management into Development. These are named in COBP 2012-2014, as agreed with the Government during the country programming mission in March 2011.
Classification	Sector (subsectors): agriculture and natural resources (water-based natural resources management, land-based natural resources management) Themes (subthemes): Environmental sustainability (natural resources conservation), economic growth (widening access to markets and economic opportunities), and social development (disaster risk management) <i>Climate change: adaptation</i> Targeting classification: Targeted intervention: geographic dimension of inclusive growth (TI-G) Gender mainstreaming category: Effective gender mainstreaming Location impact: Rural (high), urban (medium). Safeguards: environment - B, involuntary resettlement - C, indigenous peoples - B.
Risk categorization	Complex
Partnership(s)	The Project and PPTA will be funded by PPCR, supported by ADB. Additional cofinancing may be sought during PPTA implementation, in accordance with PPCR recommendations to leverage additional resources and involve other development partners.
Use of a PBA	No
Parallel PIU	No
Department and division	SARD/SAER
Mission leader and members	Cindy Malvicini, Senior Water Resources Specialist, SAER/Mission Leader Deepak Bahadur Singh, Environment Officer, NRM Shanny Campbell, Social Development Specialist, SAER

ADB = Asian Development Bank, COBP = country operations business plan, CPS = country partnership strategy, NRM = Nepal Resident Mission, PBA = programmatic based approach, PIU = project implementation unit, PPCR = Pilot Program for Climate Resilience, PPTA = project preparatory technical assistance, RCOBP = regional cooperation operations business plan, SAER = Environment, Natural Resources and Agriculture Division, SARD = South Asia Department, SCF = strategic climate fund, SPCR = Strategic Program for Climate Resilience.

PROBLEM TREE



PRELIMINARY DESIGN AND MONITORING FRAMEWORK⁸

Design Summary	Performance Targets and Indicators	Data Sources and Reporting Mechanisms	Assumptions and Risks
Impact Climate resilience in Nepal mountain communities improved	By 2023: Poverty incidence in climate vulnerable watersheds decreased Outmigration from communities within climate vulnerable watersheds reduced by x%	Government statistics Government statistics	Assumptions DSCWM and communities continue to maintain watershed management investments
Outcome Communities in watersheds of river systems that are significantly vulnerable to CC have improved access to and enhanced reliability of water resources	By 2018: Dry season flows in selected watersheds increased by x% Productivity of lands and farming systems in the watersheds enhanced by x% xx% of watershed user group members are women and DAGs	Hydrologic monitoring program to be established under the Project Socio-economic monitoring program established under the Project Socio-economic monitoring program established under the Project	Assumptions Projected CC impacts are estimated with adequate level of accuracy
Outputs 1. Participatory watershed management planning to improve water security demonstrated 2. Watershed management plans (that address the specific vulnerabilities)	100% of DSCWM and DDCs in selected watersheds adopt on time the participatory planning approach developed through the PPTA xx% of women and those from DAGs regularly consulted in watershed management and planning Rainfall run-off decreased by xx% within selected watersheds	Socio-economic monitoring program established under the Project Socio-economic monitoring program to be established under the Project Hydrologic monitoring program to be established under the Project	Risks Other agencies are reluctant to adopt watershed management principles and approaches derived from Project

⁸ Targets and baselines for indicators will be defined during PPTA implementation.

Design Summary	Performance Targets and Indicators	Data Sources and Reporting Mechanisms	Assumptions and Risks
<p>of women and DAGs) implemented in priority watersheds</p> <p>3. Increased productivity of water enhanced through effective and efficient use of water in farming systems</p> <p>4. Lessons for improving access to and reliability of water resources in vulnerable mountain regions generated and incorporated into country programs</p>	<p>Soil erosion decreased by xx% within selected watersheds</p> <p>Surface water storage and use increased by xx% within selected watersheds</p> <p>Time spent by women waiting to collect water in dry season reduced by x% (baseline: 5 hrs/day)</p> <p>Communities adopt effective and enhanced water use practices for agriculture and other uses that are responsive to the specific needs of women and DAGs.</p> <p>Incidence of disputes linked to watershed stress reduced by 50% (intra- and inter-village)</p> <p>Lessons, including those derived from a gender and social inclusion perspective, fed into DSCWM and other agencies' guidelines</p>	<p>Socio-economic monitoring program established under the Project</p> <p>Hydrologic monitoring program established under the Project</p> <p>Socio-economic monitoring program established under the Project</p> <p>Socio-economic monitoring program established under the Project</p> <p>Review of how lessons have been adopted by DSCWM and other agencies⁹</p>	
Activities with Milestones			Inputs
<p>Following activities related to PPTA and processing of envisaged investment project:</p> <p>1. Participatory watershed management planning to improve water security demonstrated</p> <p>1.1 Organize communities and conduct awareness campaigns to enhance participation of watershed communities and other stakeholders (government and non-government) in watershed management (2014-2015)</p> <p>1.2 Develop/ revise watershed management plans for critical watersheds taking into account CC impacts and using state-of-the art planning methodologies</p>			<p>SCF under PPCR: \$40.1m Government: TBD Beneficiaries: TBD</p>

⁹ "Other agencies" will be delineated during the PPTA.

Design Summary	Performance Targets and Indicators	Data Sources and Reporting Mechanisms	Assumptions and Risks
<p>(2014-2015)</p> <p>1.3 Clarify the roles of watershed stakeholders and their rights in relation to watershed management, and improve watershed management governance (2015)</p> <p>1.4 Strengthen institutional arrangements for involvement of watershed communities and other stakeholders (government and non-government) in watershed management; provide capacity building where needed (2014-2015)</p> <p>1.5 Revise/ develop appropriate cost and benefit -sharing arrangements for watershed investments and their maintenance (by 2015)</p> <p>1.6 Strengthen DSCWM capacity to implement the Project in particular and watershed management initiatives in general (2014-2018)</p> <p>2. Watershed management plans (that address the specific vulnerabilities of women and DAGs) implemented in priority watersheds.</p> <p>2.1 Implement measures to control erosion to minimize downstream sedimentation (water quality) (2015-2019)</p> <p>2.2 Implement measures to enhance soil moisture and groundwater recharge (2015-2018)</p> <p>2.3 Implement measures to enhance surface water conservation and storage (2015-2018)</p> <p>3. Productivity of water enhanced through effective and efficient use of water in farming systems</p> <p>3.1 Design, implement and monitor watershed specific productivity enhancement interventions (2015-2018)</p> <p>4. Lessons for improving access to and reliability of water resources in vulnerable mountain regions generated and incorporated into country programs</p> <p>4.1 Monitor the impacts of project interventions, especially in terms of watershed hydrology and hydrological services (2016-2018)</p> <p>4.2 Document project implementation approaches and experiences (2014-2018)</p> <p>4.3 Share the project experiences, impact assessments and lessons learned within Nepal and globally as part of SPCR global learning support program (2014-2018)</p>			

CC = climate change, DAGs = disadvantaged groups, DDC = District Development Committee, DSCWM = Department of Soil Conservation and Watershed Management, PPCR = Pilot Program for Climate Resilience, PPTA = project preparatory technical assistance, SCF = Strategic Climate Fund, SPCR = Strategic Program for Climate Resilience

Source: ADB, 2011.

PROJECT PREPARATORY TECHNICAL ASSISTANCE

A. Justification

1. The project preparatory technical assistance (PPTA) is necessary to support analysis and preparation of the Project in accordance with the Government's and Asian Development Bank's (ADB) standards and expectations. Nepal's river sub-basins should be assessed for vulnerability to climate change, and economic and technical feasibility in sample sub-basins conducted in order to determine the scope, baselines, and targets for the ensuring Project.

B. Major Outputs and Activities

2. The PPTA key outputs are prioritization of sub-basins, development of a methodology for participatory watershed planning, preparation of feasibility studies including, technical, economic and safeguard due diligence for two watershed subprojects, and preparation of the Project appraisal documents including a capacity building program for watershed management. The major outputs and activities are summarized in Table A4.1.

Table A4.1: Summary of Major Outputs and Activities

Major Activities	Expected Completion Date	Major Outputs	Expected Completion Date
Identification and prioritization of river basins/subbasins	February 2012	Basins/ subbasins identified and prioritized	Total PPTA implementation period: 10 months
Development of the methodology for preparing watershed management plans	April 2012	Methodology developed	
Preparation of feasibility studies for two sample watershed subprojects	September 2012	Feasibility studies for two (2) watersheds	
Formulation of an investment project with associated due diligence	October 2012	Project design documents	

PPTA = project preparatory technical assistance
Source: Asian Development Bank.

C. Cost Estimate and Proposed Financing Arrangement

3. The PPTA is estimated to cost \$900,000 equivalent, to be financed on a grant basis by the Strategic Climate Fund (SCF). The Government will provide counterpart support in the form of office accommodation and remuneration and per diem of counterpart staff. The detailed cost estimate is presented in Table A4.2.

Table A4.2: Cost Estimates and Financing Plan
(\$'000)

Item	Total Cost
Strategic Climate Fund Financing^a	
1. Consultants	
a. Remuneration and per diem	
i. International consultants (18 person-months)	423.0
ii. National consultants (60 person-months)	213.4
b. International and local travel	42.0
c. Reports and communications	8.0
d. Hydrologic modeling and simulation	90.0
2. Equipment (computer, printer, etc.) ^b	12.0

3.	Workshops/ meetings ^c	24.0
4.	Vehicle rental ^d	18.0
5.	Field Surveys	12.0
6.	Miscellaneous administration and support costs	20.0
7.	Representative for contract negotiations	3.0
8.	Contingencies	24.0
9.	DSCWM Monitoring Program ^e	10.6

Total**900.0**

^a Under the Pilot Program for Climate Resilience. Administered by the Asian Development Bank.

^b The equipment will handed over to the Government at TA completion.

Type	Quantity	Cost (\$)
Photocopier	3	6,000
Computer	3	3,000
Printer	3	600
GPS	3	450
Clinometer	3	300
Digital Camera	3	1,350
^c Workshops and meetings		
6 Upstream/downstream community dialogues		14,000
9 local consultations for watershed planning		5,000
8 working group meetings		800
3 steering committee meetings		300
5 multi-stakeholder consultations		1,500
Knowledge management		2,000
Media briefings		400
^d Vehicle		
Vehicle is for field survey work in remote watersheds		Expected length of use
Counterpart agencies lacks transport facilities		Seven months

^e Allocated amount has been reserved for retroactive financing.

Source: Asian Development Bank.

D. Consulting Services

4. Two consulting packages will be required for the PPTA. For the main package comprising 78 person-months (p-m) of consulting services, a firm will be recruited by ADB using the quality- and cost-based selection method. In addition, river basin and watershed hydrologic modeling and simulations using the results of downscaled climate change (CC) models and data will be undertaken by the International Water Management Institute (IWMI) using the single-source selection method. The costs are reflected in Table A4.2 as a \$90,000 lump sum payment for hydrologic modeling and simulation.

1. International Water Management Institute (IWMI)

5. IWMI is a non-profit international research organization and one of 15 centers under the Consultative Group on International Agricultural Research. IWMI conducts research on water and land management challenges faced by poor communities in the developing world. Direct engagement of IWMI is considered in the PPTA for undertaking the river basin and watershed hydrologic modeling and simulations necessary for identifying and prioritizing the basins/subbasins on the basis of water scarcity and climate change impacts. IWMI will provide 2.5 person-months of services by international experts (hydrologist and modeler) and 2.5 person-months of services by national experts (GIS expert and hydrologist/modeler). Its regional experience in this area and its ongoing involvement in similar hydrologic modeling work under a project in the Koshi river basin in Nepal is the primary justification for considering IWMI. Furthermore, a direct selection of IWMI will ensure an early commencement of one of the critical analyses to be undertaken under the PPTA as these will determine the selection of the sample watersheds for which feasibility studies will be prepared.

6. IWMI is to identify and prioritize river basins/subbasins that are significantly vulnerable to CC.¹ This will be done based on available data and information produced while preparing the National Adaptation Programme of Action together with CC assessments derived from General Circulation Models (GCMs) for which CC information will be downscaled using Regional Climate Models (RCMs)². In addition, IWMI will develop a monitoring program that will allow further validation and adjustments of the hydrological and erosion models to be implemented under the Project. In performing its tasks, IWMI will seek to build the capacity of the Department of Soil Conservation and Watershed Management (DSCWM).

2. Main Consultants

7. The main consultants include 18 p-m of international experts and 60 p-m of national experts.

Table A4.3: Summary of Consulting Services Requirement

International		National	
Name of Positions	Person-months	Name of Positions	Person-months
Team Leader/ water resources expert	6.5	Deputy Team Leader/ watershed expert	8.5
Climate Change/ environment expert	3	Forestry expert	5.25
Watershed management expert	2	Hydro-geologist	4
Natural resources / CC economist	2.5	Soil scientist	2
Social development & safeguards expert	4	GIS expert	1.75
Subtotal	18	Design engineer	6
		Agriculturalist	5
		Gender/social development specialist	6
		CC/ Environment Expert	5
		Socio-economist	3
		Natural resources economist	3.5
		Financial management expert	2
		Institutional Expert	4
		Watershed Knowledge Management Expert	4
		Subtotal	60

cc = climate change, GIS = geographical information system.

Source: Asian Development Bank.

8. When the main consultants are fielded, the Government would have selected the sample watersheds for feasibility-level assessment, as well as the possible set of sub-basins to be included in the Project during the implementation phase. The main consultants will review watershed management strategies and approaches in water scarce watersheds in other countries to determine their effectiveness and suitability for Nepal's diverse watersheds. The methodology will consider expected CC impacts. Current design criteria for commonly used micro- and small-scale watershed infrastructure will be reviewed against the projected CC impacts and design revisions will be proposed. The feasibility-level designs will take into account the CC impacts, assess alternative approaches, and calculate the incremental cost for watershed interventions in light of CC, to the extent possible.

9. Feasibility-level watershed management plans will be developed for two watersheds chosen from the prioritized basin/subbasins. The method's participatory approach involving all

¹ Since the aim of the Project is to address water reliability, vulnerability to water scarcity due to CC will be given greatest priority. Vulnerability due to soil erosion and flooding will also be assessed.

² ADB is financing the dynamic downscaling of climate change projections for Nepal. A web portal of projections using 8 different GCM-RCM-emissions scenarios will be made publicly available by end 2011.

principal stakeholders will ensure a broad-based consensus on the watershed management plans. The plans will identify the appropriate mix of watershed interventions and essential supporting services to enhance the productivity of water within the watersheds. The PPTA team will hold key events and produce knowledge products to promote and facilitate the transfer of the new approaches and tools to watershed managers in addressing water stresses exacerbated by climate change.

10. Surveys will be undertaken to develop a socio-economic profile of the two watersheds. Feasibility-level designs and cost estimates will be prepared for proposed interventions. The principles for cost and benefit sharing for the different interventions will also be discussed and agreed. Upstream-downstream linkages will be assessed in terms of water, erosion, floods, nutrient transfer, and other services, and proposals for developing payment for environmental services schemes will be developed. Land acquisition requirements, where necessary, will be determined based on the feasibility-level designs, and compensation mechanisms will be discussed with the communities. The two watershed subprojects will be subjected to economic and financial analyses. The economic analyses will quantify on- and off-site (downstream) impacts. The economic analyses will illustrate the CC impact on each subproject.

11. The institutional arrangements and governance related to watershed management, as well as the capacity of DSCWM to implement the Project, will be assessed and appropriate measures proposed. Institutional strengthening and capacity building interventions will be incorporated where necessary for project design and implementation. Consulting and NGO services required for Project implementation will be determined. Project implementation procedures related to, among other things, project management, budget appropriation, flow of funds, procurement, project accounts, and disbursement will be detailed. Manuals to facilitate project implementation will be prepared.

12. The main consultants will produce the following documentation, in addition to progress reports: (i) project appraisal report with design and monitoring framework (and baseline indicators); (ii) project administration manual with detailed implementation arrangements, costing, fund flow, procurement plan, consultant terms of reference, and implementation procedures; (iii) social analysis, gender and social inclusion plan, involuntary resettlement framework, indigenous peoples development framework, and consultation, participation and communications plan; (iv) financial, anticorruption, and procurement risk assessment and risk management plan; (v) executing agency (EA) capacity assessment and detailed description for capacity development TA; (vi) assessment of the forestry and watershed management sector; (vii) financial and economic analysis; (viii) environmental assessment review framework and sample initial environmental examination and due diligence reports; (ix) watershed management plans and feasibility assessments for two sample watershed subprojects; and (x) knowledge management plan.

E. Implementation Arrangements

13. As EA, DSCWM will assign a Class 2 officer with a specialization in watershed management as the Project Director. DSCWM will make available adequate office space (with electricity,³ telephone, and internet connection⁴) for the main consultants during the PPTA period. The Government will cover the incremental costs of the participation of Government

³ DSCWM will provide a maximum monthly electricity allocation by the time of issuance of the request for proposals. The consulting firm will pay for electricity beyond the monthly allotment.

⁴ DSCWM will provide standard internet connection. If faster internet connection is required, the firm will provide.

personnel in field visits.⁵ Disbursement under the TA project will be done in accordance with *ADB's Technical Assistance Disbursement Handbook* (May 2010, as amended from time to time). ADB will engage the consultants in accordance with the *Guidelines on the Use of Consultants by ADB and its Borrowers* (2010, as amended from time to time).

14. The Ministry of Forest and Soil Conservation (MOFSC) will establish a PPTA Steering Committee with senior representatives of DSCWM, Department of Agriculture (DOA), Department of Irrigation (DOI), Department of Water Supply and Sanitation (DWSS), Ministry of Environment (MOE), Department of Forests (DOF), and Ministry of Local Development (MOLD) as members and with the Secretary, MOFSC as the chair and Director General (DG), DSCWM as member secretary. The DG, DSCWM will report progress and issues to the Secretary, MOFSC, copied to the SPCR Coordinator in the MOE. MOFSC will report progress to MOE in accordance with the results management and program coordination plan established by MOE.⁶

15. DSCWM will establish a technical working group comprised of representatives of the DOA, DOI, DWSS, DOF, and MOLD and the Association of District Development Committees (DDCs). The working group will meet at least once per month to discuss PPTA progress and dialogue on water resources conservation issues. DSCWM will create district cross-agency coordination committees in the sample watersheds, with representation of district agency staff from forestry, water supply, irrigation, and agriculture, the DDC, water users groups and local NGOs. The same arrangement may be retained during the implementation of the Project.

16. Through approval of the PPTA, ADB is approving retroactive financing of \$10,600 for DSCWM to monitor a selected number of water conservation interventions such as conservation ponds, source protection measures, and runoff harvesting dams. Such monitoring will inform Project planning by indicating the effect of conservation measures on subsurface / base flow and groundwater table depth. It will also serve to raise awareness among DSCWM staff about how to conduct a water budget. The \$10,600 will be provided to DSCWM on a reimbursable basis to finance Government incremental costs (materials and supplies, fuel, daily subsistence allowance for field visits, etc.) for monitoring the schemes. The retroactive financing will be applicable for expenditures incurred no earlier than 12 months prior to signing of the TA Agreement. The Government has been advised that disbursement can only be made upon effectiveness of the TA.

17. The proposed PPTA processing and implementation schedule is listed in Table A4.4.

Table A4.4: Proposed Technical Assistance Processing and Implementation Schedule

Major Milestones	Expected Completion Date
IWMI team mobilizes	1 November 2011
Main consultants start and produce inception report	15 March 2012
Main consultants produce Mid-Term Report	31 July 2012
Consultants' Draft Final Report	15 Nov 2012
Consultants' Final Report	30 Nov 2012
TA Financial Completion	31 May 2013

IWMI = International Water Management Institute, TA = technical assistance

Source: Asian Development Bank.

⁵ The Government will pay daily subsistence rates per Government norms. Any additional daily subsistence required for Government personnel to participate in field visits with the consultants will be borne by the consulting firm.

⁶ See the documentation for the TA entitled Mainstreaming Climate Change Risk Management in Development.

INITIAL POVERTY AND SOCIAL ANALYSIS

Country:	Nepal	Project Title:	Building Climate Resilience of Watersheds in Mountain Eco-Regions
Lending/Financing Modality:	Project loan and grant	Department/ Division:	South Asia Department (SARD), Environment, Natural Resources and Agriculture Division (SAER)

I. POVERTY ISSUES

A. Links to the National Poverty Reduction Strategy and Country Partnership Strategy

The priorities of the Three Year Interim Plan (FY2008–FY2010) and the draft National Development Strategy, FY2009–FY2011 include inclusive social development and targeted programs, and sustainable peace building. In particular, the Government’s strategy envisages tangible improvements in the living standards of the poor, disadvantaged and socially excluded sections of the population through: (i) employment-oriented and broad based high economic growth, (ii) improved governance and service delivery systems, (iii) inclusive social development, (iv) inclusive development and targeted programs, and (v) sustainable peace building. These are in line with the ADB Country Partnership Strategy (2010-2012) and ADB’s Strategy 2020. The Project also supports the emphasis on integrated water resources management (IWRM) articulated in the National Water Plan (2005) and the IWRM policy (draft under consultation). The Project will support inclusive social development and sustainable peace building by reducing the vulnerability of rural mountainous populations to water scarcity, land degradation, biodiversity loss and water-induced disasters. It will also reduce poverty by exploring water retention systems and methods for improve water productivity to make water for both agricultural as well as domestic use available in the dry season. The project therefore has the potential to contribute to increased agricultural productivity, improved food security, and increased incomes of poor households, as well as reducing conflicts over allocation of increasingly scarce water and other natural resources. Once water supply is made reliable, farmers are more willing to invest in improved production practices (and required inputs) since the climatic risk of crop failure due to water deficiency is reduced or alleviated. For low income households, increased production will increase household food security and cash incomes through the sale of small quantities of crops, and reducing time spent queuing for water and collecting fodder from afar.

B. Targeting Classification

General Intervention Individual or Household (TI-H) Geographic (TI-G) Non-Income MDGs (TI-M7)

Currently, water resources investments are designed and implemented according to administrative (district/ village) boundaries rather than watershed boundaries. The Government of Nepal (GON) has emphasized IWRM, particularly through the National Water Plan (2005) and the preparation of an IWRM policy. Nepal has seen recent success in multi-use water resources planning covering drinking water supply and sanitation, irrigation, and small hydropower; for example, the current efforts by local government to prepare water use master plans and the various bilateral-supported comprehensive water projects. However, these are still according to administrative boundaries and within the traditional water withdrawal rights. The competing needs of various water users should be looked at in a comprehensive and integrated fashion based on the water balance. Although the National Water Plan calls for IWRM on a basin-wide scale, water resource management is still undertaken on a fragmented basis, with responsibility shared amongst a number of agencies. In order to effectively manage the projected impacts of climate change and climate variability on the country’s water resources, *planning and management should be according to geographical/ topographical boundaries and consider the current and projected water balance for a river catchment basin.*

C. Poverty Analysis

1. If the project is classified as TI-H, or if it is policy-based, what type of poverty impact analysis is needed? N/a. Poverty incidence has decreased in the last decade from 42% in 1996 to 31% in 2004 mainly due to increased remittances, greater connectivity and urbanization (NLSS II, 2003/2004). Poverty reduced further to 24% in 2009 (Draft MDG Progress Report 2010). Lack of land, water and road access remain key causes of poverty, but a key issue is highlighted by poverty trends during this same period: disparities have remained equal or have even grown between rural and urban areas (35% vs. 10%), between the central and mid-/far-western areas (27-29% vs. 41-49%), and between dominant caste groups (14-18%) and socially excluded dalits (46%), indigenous people (35-44%) and Muslims (41%). Nepal’s GINI coefficient increased from 34% in 1996 to 41% in 2004. Both GON and ADB strategies therefore emphasize social inclusion and targeting poor areas as key to poverty reduction.

A lack of water accentuates the hardships of the poor. Crops of marginal farmers remain dependent on the increasingly uncertain monsoon. Drinking water becomes a luxury; only minimal quantities are purchased from water vendors or head-carried from distant sources. Sanitation remains an unnecessary indulgence; poor hygiene quickly translates into poor health and a human stock of limited productive value. In the remote hill areas of Nepal, many poor communities are compelled to fetch water from sources up to 15 kilometers away. Tradition requires that women and female children carry water on their heads or backs over long distances. Physical deformities are common.

Children are deprived of the opportunity to attend school and women's productive, rest and social time is diverted to waiting for water and foraging for livestock fodder. Marginal farmers farm marginal lands. They are often on the periphery of irrigation facilities. In many parts of Nepal they are at the tail end of the distribution systems and almost never able to reliably access water. Low productivity and crop failures create food insecurity. Uncertain incomes perpetuate indebtedness, and social misery is compounded. (Water for All: The Water Policy of ADB, 2001)

2. What resources are allocated in the PPTA/due diligence? The PPTA has allocated consulting inputs for social analysis and conduct social safeguard due diligence: 3.5 person-months international and 6 person-months national.

3. If GI, is there any opportunity for pro-poor design (e.g., social inclusion subcomponents, cross subsidy, pro-poor governance, and pro-poor growth)? Value chain analysis for current ADB-supported projects in the High Mountain districts¹ indicates that the poor and socially excluded are likely to participate particularly in value chains not requiring land and capital, such as livestock (meat, wool and handicrafts) and the collection and sale of non-timber forest and rangeland species for dyes, fiber, medicinal and aromatic products. These groups will benefit from watershed improvements through reduced vulnerability to climate change and reversal of land and water degradation trends. The terms of reference for the PPTA consultants will include preparation of social inclusion components and pro-poor governance.

II. SOCIAL DEVELOPMENT ISSUES

A. Initial Social Analysis

Who are the potential primary beneficiaries of the project? How do the poor and the socially excluded benefit from the project? Communities consulted during the preparation of the Strategic Program for Climate Resilience (SPCR) confirmed that they are at risk from availability, reliability, and degradation of freshwater resources and their watersheds. Evidence was collected of communities who were forced to migrate due to lack of drinking water – sometimes to river flood plains, displacing one risk with another. Other communities were forced to sell land and other productive assets to construct costly pumped drinking water schemes as natural springs increasingly dried up. SPCR interventions need to address critical watershed and water resource vulnerability issues relating to climate change impacts, such as water scarcity, water quality and/or deficiency, landslide/mass wasting, accelerated soil erosion, and biodiversity loss. This SPCR component addresses the integrated management of watershed and land ecosystems so that communities in mountain regions have sustainable watershed and water resources for their domestic and agricultural needs.

What are the potential needs of beneficiaries in relation to the proposed project? Social analysis will be carried out through the PPTA to identify the socio-economic profile of the population in the selected project watersheds, expected benefits, competing needs and constraints, and the ability of the poor and vulnerable groups to benefit from the Project. Specific baselines and indicators for social impacts will be incorporated for project design and monitoring.

What are the potential constraints in accessing the proposed benefits and services, and how will the project address them? Efforts will be made to address potential constraints if identified during the PPTA study.

B. Consultation and Participation

1. Indicate the potential initial stakeholders. Government: Ministry of Forests and Soil Conservation/ Department of Soil Conservation and Watershed Management, Ministry of Irrigation/Department of Irrigation/Department of Water-Induced Disaster Prevention, Ministry of Agriculture and Cooperative/Agriculture, Ministry of Local Development/Department of Local Infrastructure Development and Agricultural Roads, Ministry of Physical Planning and Works/Department of Water Supply and Sanitation, Water and Energy Commission Secretariat, District Development Committees and Village Development Committees. Non-government: NGOs and civil society organizations, private sector, agricultural banks, community forest groups, networks of water users, irrigation users, etc.

2. What type of consultation and participation (C&P) is required during the PPTA or project processing? Stakeholder workshops, community mobilization, involvement of nongovernment organizations and community-based organizations.

3. What level of participation is envisaged for project design?

Information sharing Consultation Collaborative decision making Empowerment

4. Will a C&P plan be prepared during the project design for project implementation? Yes No

¹ RRP NEP-37292 Summary Poverty Reduction and Social Strategy for the High Mountain Agribusiness and Livelihood Improvement Project

C. Gender and Development		Proposed Gender Mainstreaming Category: EGM	
<p>1. What are the key gender issues in the sector/subsector that are likely to be relevant to this project/program? Key gender issues are time spent by women collecting, queuing for, and transporting water, under-representation of women in decision making on systems that impact their lives and livelihoods, potential increase of workloads in connection with watershed management, and feminization of agriculture in mountainous districts due to male labor migration. Constraints to equitable participation include high workloads, gender discrimination, lack of education and awareness, and consequently low absorption capacities regarding new development opportunities. Water stress has a direct impact on women's incomes and productivity, since degraded watersheds cause conflict over water allocation and management of livestock. Less water and scarcer fodder means less productive livestock and lower potential for vegetable gardening and collection of non-timber forest products – both of which are sources of women's income.</p> <p>2. Does the proposed project/program have the potential to promote gender equality and/or women's empowerment by improving women's access to and use of opportunities, services, resources, assets, and participation in decision making? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No A project gender analysis will be undertaken and a gender equality and social inclusion (GESI) plan will be prepared during the PPTA with reference to the ADB Gender checklist for water projects.</p> <p>3. Could the proposed project have an adverse impact on women and/or girls or to widen gender inequality? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>			
III. SOCIAL SAFEGUARD ISSUES AND OTHER SOCIAL RISKS			
Issue	Nature of Social Issue	Significant/ Limited/ No Impact/ Not Known	Plan or Other Action Required
Involuntary Resettlement	The PPTA will propose policies for land acquisition by direct negotiation from a single owner, and for restrictions over land use. There will be no relocation.	Limited. LA, if required at all, will be for small ponds or check dams, mostly within public river courses/ community forests.	<input type="checkbox"/> Resettlement Plan <input checked="" type="checkbox"/> Resettlement Framework <input type="checkbox"/> None <input type="checkbox"/> Uncertain
Indigenous Peoples	Nepal's many indigenous peoples are likely to be predominant in project areas. The PPTA will analyze the extent to which such groups are vulnerable in accordance with ADB SPS (2009) and determine the need for an IPP.	Not known	<input type="checkbox"/> Indigenous Peoples Plan <input checked="" type="checkbox"/> Indigenous Peoples Planning Framework <input type="checkbox"/> Environmental and Social Management System Arrangement <input type="checkbox"/> None <input type="checkbox"/> Uncertain
Labor <input type="checkbox"/> Employment Opportunities <input type="checkbox"/> Labor Retrenchment <input type="checkbox"/> Core Labor Standards	Not applicable. Communities will provide in kind contribution through provision of local resources (stone, sand) and labor for planting and construction of small ponds, gabion baskets etc.	No impact	<input type="checkbox"/> Plan <input type="checkbox"/> Other Action <input checked="" type="checkbox"/> No Action <input type="checkbox"/> Uncertain
Affordability	If pumped water is proposed, affordability analysis will be done.	Not known	<input type="checkbox"/> Action <input type="checkbox"/> No Action <input checked="" type="checkbox"/> Uncertain
Other Risks and/or Vulnerabilities <input type="checkbox"/> HIV/AIDS <input type="checkbox"/> Human Trafficking <input type="checkbox"/> Others (conflict, political instability, etc.), please specify	The project has potential to decrease inter- and intra village disagreement through better management of water and other natural resources.	No negative impact	<input type="checkbox"/> Plan <input type="checkbox"/> Other Action <input checked="" type="checkbox"/> No Action <input type="checkbox"/> Uncertain
IV. PPTA/DUE DILIGENCE RESOURCE REQUIREMENT			
<p>1. Do the TOR for the PPTA (or other due diligence) include poverty, social and gender analysis and the relevant specialist/s? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>2. Are resources (consultants, survey budget, and workshop) allocated for conducting poverty, social and/or gender analysis, and C&P during the PPTA/due diligence? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Survey budget \$6,000 pc sum.</p>			