



Concept Paper

Project Number: 43448
January 2012

Nepal: Bagmati River Basin Improvement Project

I. THE PROJECT

A. Rationale

1. The Bagmati River Basin Improvement Project aims to improve water security and resilience to potential climate change impact in the Bagmati River Basin. It will build on the general public's desire to restore the river environment in the Kathmandu Valley and the Government's efforts to improve irrigation development and mitigate the impact of water-induced disasters in the middle and lower reaches of the basin. The Project adopts the principles of integrated water resources management (IWRM) and provides Nepal with its first opportunity to apply this policy element since its adoption under the 2005 national water plan..

2. The Bagmati River holds a special place in the national culture. It is considered as a holy river and counts many cremation ghats and temples of great cultural value along its bank that attracts scores of Hindu devotees from all over the world who traditionally purify themselves in the holy Bagmati waters. The Bagmati River Basin also has great economic importance as it plays a crucial role in meeting the water supply requirement of the country's capital city and downstream communities,¹ as well as in sustaining irrigated agriculture in the Kathmandu Valley and along the basin.

3. The rapid and unplanned expansion of Kathmandu City has put tremendous pressure on the water resources of the Bagmati River Basin. In the absence of appropriate sewage collection and waste water treatment plants, the river has become the main collector drain. Solid waste deposited on the river banks also further deteriorates the river environment. Rapid urbanization has put tremendous pressure on the valley water supply distribution. During dry season, around 80% of the Bagmati River flow is diverted for domestic use leaving very little flow for irrigation and other sectors including environment. As demand could not be met from surface water, a large part is supplied from the groundwater table. The quantity extracted is estimated to be 4 to 5 times higher than the natural recharge and has caused the water table to retreat by 35 meters (m) in only 20 years. The situation is further aggravated by (i) the conversion of the recharge areas into residential areas, (ii) lowering river stream and sand mining leading to riverbed deepening, and (iii) upstream catchment degradation. As it exits the city, the river is biologically dead and made of heavily polluted sewage water that potentially endangers the downstream water users' health.

4. Aside from the problems inherited from Kathmandu, the middle reach of the basin with steep slopes and degraded watersheds is prone to severe landslides and floods which threaten both infrastructure and settlements, cause increased rural poverty² and are the source of heavy sedimentation for the lower reach. In the lower reach, where the river enters the Terai plain, frequent floods³ and river bank erosion become the main threat to people's livelihoods. The 1993 flood alone claimed 789 lives, affected 30,200 people and caused tremendous damage to houses and public infrastructure. Similarly, potential exists to improve irrigation through the development of conjunctive groundwater use and more efficient irrigation technologies.

5. Competing and uncontrolled use of water in the basin has an increasing negative impact on its overall sustainable development. The Kathmandu valley, which is both the economic and cultural heart of the country, is particularly affected. The extreme water insecurity and river

¹ In 2010 the water supplied by the main operator of the basin to the Kathmandu Valley is estimated at an average of 100 MLD (from surface and registered deep tube wells) against a demand of 286 MLD. The balance is met by unregulated ground water abstraction. The Melamchi water supply will bring an additional 170 MLD in 2015 for a demand that would have increased to 396 MLD.

² In this part of the Basin, several irrigation schemes hit by past floods are still to be rehabilitated and farmers are forced to migrate abroad to sustain their families' livelihoods.

³ Over the past 3 decades harmful floods return frequency as increase to about one every 5 years.

environment degradation not only endanger the existing industries and services but also discourage further investments from private sector. Plans to improve Kathmandu's water supply from the Bagmati River Basin water sources were developed without consideration for downstream users and environmental flow.⁴ Flood protection works and irrigation development are also planned in isolation of other sector requirements. Similarly, discharge of urban waste water effluent, groundwater extraction, sand mining, and solid waste disposal in the river are not regulated. The strong civil society movement and the public's general interest in the restoration of the Bagmati River is potentially a strong asset for improving many of these fundamental problems. Strangely however, they were little considered in the planning and design of past projects intending to address the Bagmati River problems and consequently the expected beneficiaries had little ownership in their successful implementation.⁵

6. To assist the Government in applying the participatory IWRM approach, the Asian Development Bank (ADB) approved in 2010 TA7547-REG: Supporting Investments in Water Security in River Basins, the objective of which is to (i) build consensus of the basin stakeholders on the possible mandate and structure of a river basin organization (RBO), (ii) build the capacity of stakeholders, (iii) support the formation of a RBO, and (iv) review and expand the Bagmati Action Plan, approved by the Government of Nepal in 2002. The regional technical assistance is being undertaken to prepare the ground for the Bagmati River Basin Improvement Project (BRBIP) and the Kathmandu Valley Urban Environmental Improvement Project (KVUEIP) that are for approval in 2013.

7. BRBIP together with KVUEIP, which will focus on waste water management, will build on investments that already contribute to improving water security in the basin. These include (i) two ongoing ADB/Japan International Cooperation Agency (JICA) -financed projects: Loan 1820-NEP: Melamchi Water Supply Project and Loans 2058/2059-NEP: Kathmandu Valley Water Services Sector Development Project amounting to \$331 million, and (ii) the ADB-financed \$130 million Kathmandu Valley Water Supply Project for approval in 2011. Yet, while these projects focus on water supply and waste water management, BRBIP takes a broader integrated approach that aims to resolve the overall basin water governance issue and ensure more equitable water management and development between upstream/downstream communities, rural/urban communities or between sectors. It will not only introduce IWRM and basin planning but will also address core rural water development issues and complement efforts to improve the river environment.

8. The Project is consistent with ADB's Nepal country partnership strategy,⁶ which aims to support Nepal's peace and development aspirations by promoting the four pillars: (i) broad-based and inclusive economic growth, (ii) inclusive social development, (iii) governance and capacity building, and (iv) climate change adaptation and environmental sustainability. The project is included in the Nepal country operations business plan (COBP) 2012-2014.⁷

B. Impact, Outcome, and Outputs

9. The Project's expected impact is to improve sustainable economic development and poverty reduction in the Bagmati River Basin. The Project outcome will focus on improving water security in the Bagmati River Basin. The expected outputs may include (i) effective

⁴ These do not include ADB-financed Loan 1820-NEP: Melamchi Water Supply Project and Loans 2058/2059-NEP: Kathmandu Valley Water Services Sector Development Project which are diverting water from the Kochi River Basin which is adjacent to Bagmati River Basin.

⁵ Such was the case of the 1994 World Bank -funded Bagmati Water Management Strategy and Investment Program preparation which failed to build a consensus between the basin stakeholders and was never implemented.

⁶ ADB. 2009. *Nepal: Country Partnership Strategy 2010–2012*. Manila.

⁷ ADB. 2011. *Nepal: Country Operations Business Plan (COBP) 2012–14*. Manila.

integrated and participatory river basin management, (ii) an improved riparian river environment in the Kathmandu Valley, (iii) increased water availability in the basin during the dry season, and (iv) reduced water-induced disaster impact on the basin communities.

C. Investment and Financing Plans

10. The major investment components may include (i) stakeholder mobilization, awareness raising and integrated planning; (ii) IWRM focused institutional reform and capacity building; (iii) riparian river environment improvement that may include community/civil society based (a) awareness and education, (b) river training works, (c) river cleaning, (d) river side beautification including cultural heritage sites restoration; (iii) increased surface water availability (rain water harvesting and storage, catchment regeneration, irrigation rehabilitation and efficiency and natural wetland enhancement); and (iv) water-induced disaster mitigation that may include (a) river training works, (b) watershed regeneration, (c) *sabo* works,⁸ and (d) community-based flood early warning systems and adaptation programs. A project preparatory technical assistance (PPTA) will assess the detailed cost per component for the Project. The Nepal COBP 2011-2013 indicates that ADB may provide financing of \$30 million from ADB's Special Funds resources. Co-financing is under discussion with JICA and the Export-Import Bank of Korea.

Table 1: Tentative Financing Plan

Source	Amount (\$ million)	Share of Total (%)
Asian Development Bank	30.0	50.0
Cofinanciers	22.5	37.5
Government	7.5	12.5
Total	60.0	100.0

Source: Asian Development Bank estimates. 2011.

D. Indicative Implementation Arrangements

11. The Project executing agency (EA) will be either the Ministry of Irrigation (MOI) or the Water and Energy Commission Secretariat (WECS). Implementing agencies (IAs) may be selected among the High Powered Committee for Integrated Development of the Bagmati Civilization, the Department of Water Induced Disaster Prevention, the Department of Irrigation, the Ministry of Forest and Soil Conservation, the Municipalities and Ward of Kathmandu Valley and the Village Development Committees. The selection of the EA and IAs will depend on the final project components and the institutional capacity assessment produced by the PPTA. The EA may have a program coordination unit and coordinate the IAs work within an integrated water management framework. Project management consultants will be required but the amount and type as well as procurement methods will be assessed during the PPTA. Advance contracting and retroactive financing will be considered to ensure early project start-up.

II. TECHNICAL ASSISTANCE

12. A capacity development technical assistance will be required to support capacity building and institutional reform for IWRM during project implementation.

III. DUE DILIGENCE REQUIRED

⁸ Sabo works is a Japanese technology similar to check dams for controlling the sediment flow and erosion caused by natural disasters.

13. Due diligence will include the following:
- (i) **Technical economic and financial.** To be undertaken as part of the feasibility studies of the proposed subprojects.
 - (ii) **Governance.** Financial management, procurement, anticorruption, policy and legal, technical and implementation capacity.
 - (iii) **Poverty and social.** Poverty reduction and social impacts need to be assessed. Gender analysis will be undertaken.
 - (iv) **Safeguards.** Environment, involuntary resettlement, and indigenous peoples framework and plans may be required if the project is processed as a sector loan.
 - (v) **Stakeholder's participation.** Consultation and participation will be key to the project success and sustainability. A participation strategy will be prepared.

IV. PROCESSING PLAN

A. Risk Categorization

14. As per ADB guidelines, the Project is considered as low risk. It is financially small and is categorized B from a safeguard point of view. ADB projects in water resource management and development have been successfully implemented in Nepal. However, past successful engagement in water resources may not be fully applicable to this new project which follows a potentially complex integrated approach involving numerous stakeholders. The risk that this new approach in Nepal represents may be mitigated by the strong commitment from both the government and the civil society in addressing the Bagmati River Basin degradation, the already existing pro-IWRM policy and institutional arrangements, and number of positive pilot initiatives developed locally to improve water security in the Kathmandu Valley.

B. Resource Requirements

15. The estimated requirement includes 65.0 person-days of field inputs of ADB staff and 25.0 person-days of staff consultants. A PPTA is required to (i) prepare an institutional and capacity building program, (ii) ensure stakeholder participation during the project design process, (iii) finalize subproject selection, and (iv) undertake subproject feasibility studies.

C. Processing Schedule

16. Major milestones up to loan effectiveness are listed in Table 2 below:

Table 2: Proposed Processing Schedule

Milestones	Expected Completion Date
Loan Fact-Finding Mission	September 2012
Staff Review Meeting	October 2012
Loan negotiations	December 2012
Board consideration	February 2013
Loan effectivity	October 2013

Source: Asian Development Bank. 2011.

V. KEY ISSUES

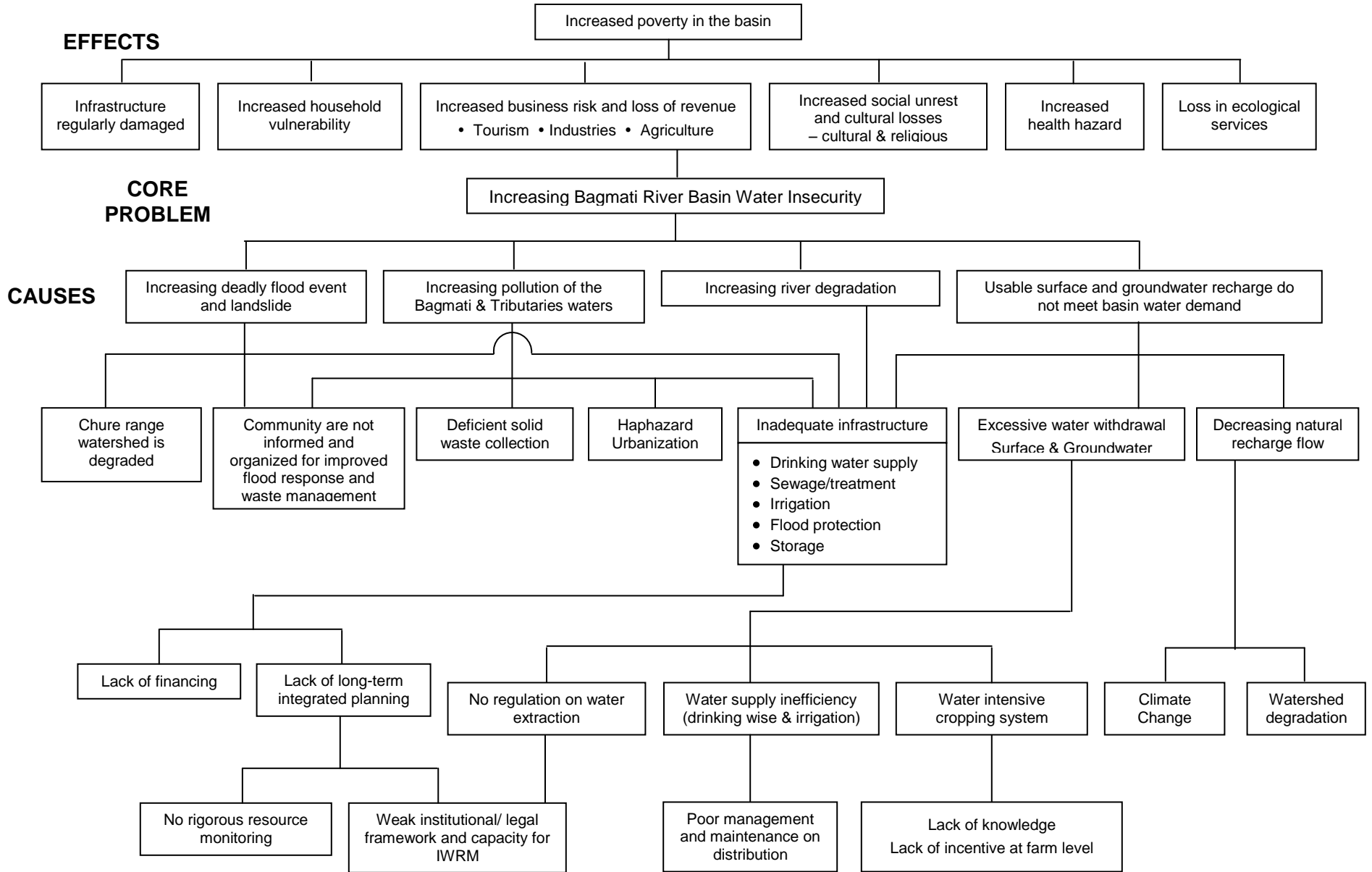
17. Key issues include (i) the weak governance and procurement capacity that will require the Central Operations Services Office support for identifying risk prevention measures, and (ii) the small size of the loan compared to the scope of work in the basin for which support from the Office of Cofinancing Operations in securing cofinancing will be required.

BASIC PROJECT INFORMATION

Aspects	Arrangements
Modality	Project loan/grant or sector loan/grant
Financing	As per the Nepal COBP 2011-2013, ADB will provide a \$30 million financing from the ADF. Government contribution is also expected to be at a minimum of \$7.5 million. In addition, other co-financiers are to be identified.
COBP/RCOBP	The project appears as a 2013 firm ADF loan/grant in the Nepal COBP 2012-2014.
Classification	<p>Sector (subsectors): Agriculture and natural resources (water-based natural resources management; irrigation, drainage and flood protection, forestry)</p> <p>Themes (subthemes): Environmental sustainability (natural resource conservation and urban environmental improvement); Economic growth (promoting economic efficiency and enabling business environment and, widening access to markets and economic opportunities); Social development (disaster risk management); capacity development (institutional and organizational development)</p> <p><i>Gender mainstreaming: Effective gender mainstreaming</i></p> <p><i>Climate change: adaptation (through improved water resource management and development)</i></p> <p>Targeting classification: general intervention</p> <p>Location impact: Rural (high) and Urban (medium)</p> <p>Safeguards: Environment – B, Involuntary Resettlement – B, Indigenous Peoples – B</p>
Risk categorization	Low
Partnership(s)	Cofinancing partner may be secured as we progress into the project processing.
Use of a PBA	Not applicable.
Parallel PIU	To be determined.
Department and division	South Asia Department / Environment, Natural Resources and Agriculture Division
Mission leader and members	Arnaud Cauchois, Senior Water Resources Specialist/Mission Leader, SAER Shanny Campbell, Social Development Specialist Deepak Bahadur Singh, Environment Officer, NRM

ADB = Asian Development Bank, ADF = Asian Development Fund, COBP = country operations business plan, NRM = Nepal Resident Mission, PBA = programmatic based approach, PIU = project implementation unit, RCOBP = regional cooperation operations business plan.

PROBLEM TREE



PRELIMINARY DESIGN AND MONITORING FRAMEWORK

Design Summary	Performance Targets and Indicators	Data Sources and Reporting Mechanisms	Assumptions and Risks
<p>Impact Economic development sustained and poverty reduced in the Bagmati River Basin</p>	<p>By 2023</p> <ul style="list-style-type: none"> Increased private sector investments and employment by x% and y% respectively from yyyy in the Kathmandu Valley Incidence of poverty in the basin decreased by xx% from yyyy 	<ul style="list-style-type: none"> Nepal Central Bureau of Statistics and Federation of Nepalese Chambers of Commerce & Industry Nepal Central Bureau of Statistics living standard survey from yyyy 	<p>Assumptions Government economic policies are conducive to private sector investment and poverty reduction</p> <p>Risks Political situation adversely affects economic growth and reduces economic opportunities in the basin</p>
<p>Outcome Bagmati River Basin water security is improved</p>	<p>By 2019</p> <ul style="list-style-type: none"> Improved surface and ground water availability in the basin by xx% from their levels in yyyy Improved water quality in the basin by xx%¹ from their levels in yyyy Enhanced access to irrigation by xx ha from xx ha baseline in yyyy Reduced flood impact on infrastructure and people with focus on women and DAGs by xx% from their average levels from 1990 to yyyy 	<ul style="list-style-type: none"> DHM and GWRDB surface flow and water table annual measurements HPCIDBC water quality assessment reports DOI annual reports DWIDP annual reports 	<p>Assumptions Related ADB projects addressing problems in drinking water supply and sewage collection/ treatment to Kathmandu are successfully completed on time.</p> <p>Risks Climate change impact exceed model projections</p>
<p>Outputs</p> <ol style="list-style-type: none"> Effective integrated and participatory river basin management made operational Improved riparian river environment in the Kathmandu Valley 	<p>By 2018</p> <ul style="list-style-type: none"> A competent RBO is established with participation from women and DAGs in leadership and non-leadership positions Water resources real time data and decision support systems are in place Bagmati River Basin integrated 2015-2040 master plan and action plan approved by all basin stakeholders xx km river cleaned by 2016, using xx% or more women and DAG workers 	<ul style="list-style-type: none"> WECS annual reports HPCIDBC annual reports 	<p>Assumptions Frequent turnover in high ranking officials do not affect commitment for IWRM</p> <p>Strong civil society Municipalities and local government support is maintained throughout project implementation</p> <p>Inter-sectoral coordination is well managed with competent leadership</p>

¹ Improved water quality linked to increased water availability (dilution).

Design Summary	Performance Targets and Indicators	Data Sources and Reporting Mechanisms	Assumptions and Risks
<p>3. Increased water availability in the basin during dry season</p> <p>4. Reduced water-induced disaster impact on basin communities</p> <p>5. Efficient project management and stakeholders coordination is achieved</p>	<ul style="list-style-type: none"> • xx km river bank rehabilitated/greened by 2017, using xx% or more women and DAG workers • River Administration Act approved by parliament by 2017 <p>By 2018</p> <ul style="list-style-type: none"> • xx m³/year rain water harvested to support drinking water supply and irrigation supply in Bakhtapur area • xx ha of community forest replanted and xx ha of wet lands rehabilitated • XX ha of irrigated area rehabilitated in Marin Khola • XX m³/year rooftop water harvested by households to increase ground water recharge <p>By 2017</p> <ul style="list-style-type: none"> • XX m river training works executed • XX m³ of <i>sabo</i> works completed • XX ha catchment regenerated <p>By 2015</p> <ul style="list-style-type: none"> • Early warning flood system in place and community-based flood adaption programs with protocols that consider needs of women, children, disabled and elderly during disasters implemented in XX riverine villages <ul style="list-style-type: none"> • PCU successfully established by 2012 • Sector PIUs established by 2013 • Annual project implementation targets met 	<ul style="list-style-type: none"> • Nepal Gazette <ul style="list-style-type: none"> • MPPW annual and quarterly progress reports • MFSC annual and quarterly progress reports • DOI annual and quarterly progress reports • MPPW annual and quarterly progress reports <ul style="list-style-type: none"> • PCU and PIUs annual and quarterly progress reports • DWIDP annual reports • MFSC annual and quarterly progress reports • DWIDP annual reports <ul style="list-style-type: none"> • PCU and PIUs annual and quarterly progress reports 	

Activities with Milestones	Inputs
<p>1. Effective Integrated and Participatory River Basin Management</p> <p>1.1 Basin stakeholders mobilization and awareness raising (2011–2014)</p> <p>1.2 Legal and institutional strengthening for IWRM and RBO formation (2012-2015)</p> <p>1.3 Capacity building and technical training for RBO competence (2012-2018)</p> <p>1.4 Participatory integrated river basin master plan 2040 development and sector action plans (2018)</p> <p>2. Improved River Environment in the Kathmandu Valley</p> <p>2.1 Riparian communities and institution awareness and capacity building (2012-2014)</p> <p>2.2 Legal and institutional strengthening for river administration (2015–2017)</p> <p>2.3 Identify and design works for river environment beautification (2012-2014)</p> <p>2.4 Works tendering and construction supervision (2013-2017)</p> <p>3. Increased Water Availability in the Basin in Dry Season</p> <p>3.1 Appraisal and construction of water harvesting storage and irrigation rehabilitation works (2013–2016)</p> <p>3.2 Implementation of individual households rooftop water harvesting programs (2014–2018)</p> <p>3.3 Appraisal and development of irrigation water saving technologies (2013–2014)</p> <p>3.4 Community forest plantation and management program (2014–2018)</p> <p>3.5 Community management of upper watershed and wetlands (2014–2018)</p> <p>4. Reduced Water-Induced Disaster Impact on Basin Communities</p> <p>4.1 Awareness mobilization of community and design of participatory community-based flood early warning system and flood adaptation (2014 2015)</p> <p>4.2 Identify and design of flood protection works (2012–2014)</p> <p>4.3 Works tendering and construction supervision (2013-2017)</p> <p>5. Efficient project management and stakeholders coordination</p> <p>5.1 Assessment of implementation set-up and arrangement (February-August 2012)</p> <p>5.2 Establishment of PCU (November 2012)</p> <p>5.3 Initiation of advance actions by November 2012 and engaging and mobilizing consultants before loan signing in 2013</p>	<p>PPTA</p> <p>JFPR: \$ 0.8 million</p> <p>Project</p> <p>ADB: \$30 million</p> <p>Government: \$7.5 million</p> <p>Cofinancing: 22.5 million</p> <p>Beneficiaries: TBD</p> <p>Private sector: TBD</p>

ADB = Asian Development Bank, DAG = disadvantaged group, DHM= Department of Hydrology and Meteorology, DOI= Department of Irrigation, DWIDP= Department of Water Induced Disasters, GWRDB= Ground Water Resources Development Board, HPCIDBC= High Power Committee for Integrated Development of the Bagmati Civilization, IWRM = integrated water resources management, MFSC= Ministry of forestry and Soil Conservation, MPPW= Ministry of physical Planning and Works, PCU= Project Coordination unit, PIU= Project Implementation Unit, RBO = river basin organization, TBD = to be determined, WECS= Water and Energy Commission Secretariat, JFPR = Japan Fund for Poverty Reduction.

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 the Asian Development Bank's (ADB) standards and expectations. Substantial inputs will be required for stakeholder's participation and consultation during the project design to ensure maximum ownership.

B. Major Outputs and Activities

2. The PPTA key outputs will include (i) no-regret subprojects prioritization¹ further refined to ensure maximum relevance to the project outcome and ownership; (ii) feasibility studies including, technical, economic and safeguard due diligence completed for selected subprojects on river environment improvement, rain water harvesting including bulk water supply dams, wetland enhancement and rooftop rain harvesting programs, flood and erosion control as well as irrigation rehabilitation; (iii) flood early warning system and community-based flood disaster adaptation program developed; (iv) community forest and watershed management programs; and (v) institutional, legal and capacity building program for integrated water resources management (IWRM) as agreed upon with stakeholders and Government.² The major outputs and activities are summarized in Table A4.1.

Table A4.1: Summary of Major Outputs and Activities

Major Activities	ECD	Major Outputs	ECD
(i) Review available bibliography and no-regret subproject proposals;	Feb 2012	Inception report including	Feb 2012
(ii) Undertake subprojects field visits;		(i) subproject prioritization list completed and agreed upon by all stakeholders; and	
(iii) Study overall relevance and alternative options;		(ii) revised PPTA work plan and staff mobilization schedule	
(iv) Undertake validation stakeholders workshops			
(i) Undertake technical surveys and social and gender assessment;	Apr 2012	Priority subprojects are appraised including technical, financial, economic and safeguard due diligence as per ADB standards and necessary social/gender assessments/participation strategy and safeguards frameworks and/or plans produced.	Mar-Jun 2012
(ii) Produce feasibility study level engineering design;	May 2012		
(iii) Undertake safeguard assessments;	Jun 2012		
(iv) Prepare cost estimate, and economic and financial analysis	Jun 2012		
(i) Undertake thorough assessment of institutional, policy, legal, and capacity strengths and weaknesses for IWRM;	Feb 2012	(i) IWRM institutional reform and capacity building project component finalized and agreed by all stakeholders	
(ii) Undertake stakeholders consultation on possible RBO setup and mandate and policy, legal and capacity improvement;	Mar-Jul 2012	(ii) Project investment and financing plan, DMF, governance and safeguards framework, implementation plan, assessment of project	Aug 2012

¹ A number of urgent no-regret water security interventions (subprojects) have been identified by the basin stakeholders and reviewed by the ADB missions. If a subproject is considered high-priority, it will be financed under the ensuing project together with the Basin Master Plan preparation that will study longer-term investment options.

² With support from TA 7547-REG: Supporting Investments in Water Security in River Basins.

Major Activities	ECD	Major Outputs	ECD
(iii) Finalize the project design aspects including budget based on agreement reached;	Jul 2012	implementation consultant requirement prepared	
(iv) Assess requirement for project consultant and prepare TOR and tender documents	Jul-Aug 2012		

ADB = Asian Development Bank, DMF = design and monitoring framework, ECD = estimated completion date, IWRM = integrated water resource management, PPTA = project preparatory technical assistance, RBO = river basin organization, TOR = terms of reference.

Source: ADB. 2011.

C. Cost Estimate and Proposed Financing Arrangement

3. The Government has requested ADB financing for \$800,000 equivalent. The TA will be financed on a grant basis by the Japan Fund for Poverty Reduction, and administered by ADB. The Government will provide support in terms of counterpart staff including expenses to cover their logistics, office accommodation for the TA team, provision of data and facilitation of survey works.

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

Item	Total Cost
Japan Fund for Poverty Reduction ^a	
1. Consultants	
a. Remuneration and per diem	
i. International consultants (18.5 person-months)	457.0
ii. National consultants (32 person-months)	192.0
b. International and local travel	50.0
c. Reports and communications	1.6
2. Equipment (computer, printer, etc.) ^b	9.0
3. Workshops, training, seminars, and conferences ^c	7.0
4. Surveys	20.0
5. Miscellaneous administration and support costs	23.0
6. Representative for contract negotiations	4.5
7. Contingencies	35.9
Total	800.0

ADB = Asian Development Bank, HPCIDBC = High Powered Committee for Integrated Development of the Bagmati Civilization.

^a Administered by the Asian Development Bank . Excludes government counterpart contribution in kind.

^b Computers and ancillaries.

^c Workshops for stakeholders participation in project design.

Source: ADB staff estimates.

D. Consulting Services

4. The PPTA will be implemented over a period of 8 months from the fielding of consultants, which is anticipated in January 2012. ADB will recruit a team of national and international consultants through a firm using simplified technical proposal for the quality- and cost-based selection method. The consultants will be engaged by ADB in accordance with its *Guidelines on the Use of Consultants* (2010, as amended from time to time). The summary of consultant requirements is shown in Table A4.3 below, which is followed by the outline of the terms of reference (TOR) for consultants.

Table A4.3: Summary of Consulting Services Requirement

International		National	
Name of Positions	p.m.	Name of Positions	p.m.
Team Leader / IWRM Specialist	6.0	Deputy Team Leader/ Institution/communication Specialist	7.0
River Improvement, Hydraulics, Flood Management Specialist	2.0	Project Economist	3.0
Dam Specialist	1.0	River Hydraulics, Modeling Flood Management Engineer	3.0
Decision Support System / River Modelling and Water Quality Specialist	2.0	Watershed Management / Wetland Specialist	3.0
Hydrologist	1.5	Hydrologist	3.0
Institution and Community and Participation Specialist	2.0	Irrigation Specialist	2.0
Project Economist	2.0	Social Development (Resettlement) Specialist	3.0
Financial Management / Procurement Specialist	1.0	Environment Specialist	2.5
Environment Specialist	1.0	Urban Planner / Cultural Heritage Specialist	2.0
		Social Development (Gender) Specialist	2.5
Total	19.0		31.0

IWRM = integrated water resources management, p.m = person months.

Source: ADB. 2011.

5. The **Team Leader** will be responsible for the overall direction of the TA team and delivery of all the outputs. As IWRM and Institutional Specialist, and with the support of the Institution and Community and Participation Specialist, the Team Leader will lead the institutional, legal, capacity assessment and stakeholders' consultation and prepare (i) a project component summarizing agreement reached with Government and stakeholders on IWRM-oriented institutional and legal reforms, and (ii) a preliminary framework outlining the needs for developing the Bagmati River Basin IWRM Master Plan, Strategic Roadmap, and Investment Plan as well as terms of reference for the consulting services required to undertake such exercises.

6. The **River Improvement, Flood, Dam, Irrigation Specialists and Hydrologist** will (i) lead the no-regret subproject identification in their respective specialty; (ii) supervise the required technical surveys for feasibility study level design preparation and quantity estimates; and (iii) produce the subprojects' technical appraisal studies.

7. The **Decision Support System (DSS) / River Modeling Specialist** will provide support for (i) developing the DSS concept, and (ii) providing expertise in hydrological and hydraulic modeling for subprojects feasibility development in river restoration and training and flood management.

8. The **Watershed / Wetlands Management Specialist** will: (i) consult with local community groups with ongoing watershed and wetland management to identify how the Bagmati River Basin Improvement Project can support, improve and expand on their work; (ii) provide an implementation framework and program with associated costs; (iii) review ongoing household rooftop rain harvesting programs in the Kathmandu Valley and identify how these programs can be enhanced with ADB's and Government's support including: (a) reviewing the technical aspects of the household roof rain harvesting systems currently being offered and implemented and recommend improvements; and (b) preparing associated costs and implementation framework for supporting this program.

9. The **Project Economists** will (i) prepare the project's detailed budget and investment plan based on subproject(s) design and cost estimates; (ii) undertake a detailed economic and financial analysis of the subprojects in accordance with ADB's *Guidelines for the Economic Analysis of Projects* (1997); (iii) identify the economic and financial risks associated with the project's subproject(s) and conduct a sensitivity and risk analysis as per ADB guidelines.

10. The **Financial Management Specialist, Social Consultation, Environment, Gender and Resettlement Specialists** will be responsible for addressing social, environmental and financial due diligence assessments of the subprojects and the overall project as per ADB requirement. Key outputs will include production of the required safeguards frameworks and/or plans as well as production of a social and poverty assessment, gender and social inclusion action plan and financial assessment and related capacity building and improved financial management guidelines. The Social Specialists will also (i) support all other specialists where community consultations and engagement is required, (ii) undertake a comprehensive stakeholder analysis, and (iii) prepare a consultation and participation plan for the investment project to ensure ongoing engagement and participation. The Financial Management Specialist will also support the National Hydrologist by considering modalities for incentivizing homeowners to participate in the Household Roof Rain Harvesting Program.

11. The **Urban Planner and Cultural Heritage Specialist** will be responsible for (i) assessing the requirement for urban planning in the upper Bagmati River, (ii) review river beautifications/restoration projects by Government or civil society initiatives and draw lessons learned to be incorporated in the project design, (iii) provide contributions on the selection approach and costing of cultural heritage restoration works that may be included in the riverfront improvement subprojects, and (iv) propose suitable implementation modalities.

E. Implementation Arrangements

12. It is proposed that the Water and Energy Commission Secretariat (WECS) will be the PPTA executing agency while the Department of Water Induced Disaster Prevention (DWIDP), Department of Irrigation (DOI), HPCIDBC and Kathmandu Valley Water Supply Management Board will be the associated implementing agencies and will provide (i) counterpart staff with adequate logistical support; (ii) consulting and technical surveys support;³ (iii) office space and utilities, including telephone, electricity, heating, cooling, and water for the TA team in Kathmandu and in the field offices;⁴ (iv) support with planning and implementing field trips, meetings, consultations and workshops; and (v) provide any necessary and available data. A PPTA Steering Committee will be formed to monitor the TA progress, resolve implementation issues and validate findings/recommendations. It will be chaired by WECS with participation from HPCIDBC, Ministry of Irrigation, DOI, DWIDP, other relevant government agencies as well as private sector and civil society representatives. Disbursements will be made in accordance with ADB's Technical Assistance Disbursement Handbook (May 2010, as amended from time to time

³ To be provided by the High Powered Committee for Integrated Development of the Bagmati (HPCIDBC).

⁴ Main office will be located in HPCIDBC office.

INITIAL POVERTY AND SOCIAL ANALYSIS

Country:	Nepal	Project Title:	Bagmati River Basin Improvement Project
Lending/Financing Modality:	Project or Sector Project	Department/ Division:	SARD/SAER

I. POVERTY ISSUES

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

Nepal has achieved significant gains in poverty reduction – from a poverty incidence of 42% in 1996 to 31% in 2004 – and is on track to achieve its Millennium Development Goal of reducing the poverty incidence to 21% by 2015. However, the past achievements mask the still widespread poverty and socioeconomic disparities as reflected by the Gini coefficient of 41.1% in 2004 up from 34.2% in 1996. The Government's Three-Year Interim Plan (TYIP) FY2008-FY2010 aimed to reduce poverty to 24% by FY2010, and achieved to attain 25.4%. In the TYIP, the annual average economic growth rate was targeted at 5.5%, and attained 4.4%.

The Bagmati River Basin with Kathmandu at its heart combines urban and rural poverty issues. In both dimensions, the basin water insecurity is a significant aggravating factor. The current level of water scarcity in the Kathmandu Valley not only affects the business environment and potential employment generation but also every single household who have to spend substantial time, energy and money in securing their domestic water supply needs. The average duration of water supply in Kathmandu Valley is 0.4 hours per day and the availability of water is approximately 20 liters per capita per day (lpcd). Most people, particularly the poor, rely on secondary sources often paying high prices or using contaminated sources such as shallow groundwater and women have to devote significant time as predominant carriers and managers of water. Household sewage is collected by a leaking sewerage system that discharges directly into the Bagmati and its tributaries converting them in to open sewers. Lack of availability of sufficient water and sanitation facilities is a prime cause of the high incidence of disease and mortality amongst the urban poor.

Competition over scarce water resources and lack of integrated planning between sector, upstream and downstream communities and urban and rural also affect significantly communities downstream of Kathmandu. It impacts on the economic opportunities of the rural communities as water becomes the most limiting factor to increase agricultural productivity. In the absence of better opportunities, migration of male family members becomes the most secure way to sustain the family especially for landless and vulnerable households. However resilient the downstream communities may be, they must also endure regular extreme water-induced disasters. The worst example occurred in 1993 when a cloud burst caused heavy damage to crucial infrastructure (Bagmati Barrage and Kulekhani Hydropower Plant) in the Bagmati Basin. Many villages and several bridges were washed away and the disaster claimed the lives of about 1,336 persons with 163 injured. Property loss was tentatively estimated to be NRs 4.9 billion.

The Government approach paper for the next three-year plan (2010/11–2012/13) recognizes the importance of adopting the principle of Integrated Water Resource Management (IWRM) to fulfill the requirements of water security and disaster risk prevention. Such development of water resources in the special watershed areas is recommended to be done by adopting a River Basin Approach.

The objective of the Nepal poverty reduction strategy is to reduce poverty through broad-based economic growth, inclusive social development, good governance, targeted programs, and rural infrastructure development. These objectives have been maintained in the 2010 budget and are supported by ADB's Country Partnership Strategy 2010-2012 for Nepal which proposes to support broad-based inclusive economic growth through key sectors which include agriculture and rural development with investments in rural roads, irrigation, and agricultural research, income generation for marginalized rural areas, information technology, market support, and extension services.

B. Targeting Classification

1. Select the targeting classification of the project:

General Intervention Individual or Household (TI-H) Geographic (TI-G) Non-Income MDGs (TI-M1, M2, etc.)

Explain the basis for the targeting classification:

The Project targets a river basin which has a core strategic importance for the country as it hosts the capital city. This river basin may count a large number of poor and vulnerable households but is certainly not the poorest river basin of the country. However, improving the water availability and quality in the basin and particularly in the Kathmandu Valley will have an important multiplier effect to the entire nation.

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? Not applicable.
2. What resources are allocated to the project preparatory TA and due diligence? To be determined.
2. If GI, is there any opportunity for pro-poor design (e.g., social inclusion subcomponents, cross subsidy, pro-poor governance, and pro-poor growth)? To be determined.

II. SOCIAL DEVELOPMENT ISSUES**A. Initial Social Analysis**

Based on existing information:

1. Who are the potential primary beneficiaries of the project? How do the poor and the socially excluded benefit from the project?

The people living in the Bagmati River Basin are the primary beneficiaries of the Project. In the upper reach of the basin, the people of Kathmandu Valley who have been suffering from a serious water deficit, worsening sanitation and continuous degradation of their holy river will be the primary beneficiaries of the project. This includes the urban and peri-urban poor people who use the Bagmati waters for bathing and other purposes. The middle reach of the river basin is inhabited by generally poor and vulnerable communities who suffer from both water scarcity and pollution originating from Kathmandu. They are also regularly affected by frequent landslides which are the consequence of a degraded watershed. In the lower reach, people also suffer from water scarcity and pollution. However, the main threat to their livelihoods is the frequent and extremely violent floods. Investment activities for improved water security, conservation of watershed and augmentation of water in the river, improved sanitation due to a better river environment, reduction of flood hazard, good governance through establishing a dedicated river basin organization (RBO), and capacity development of local people will directly benefit all, including the poor and the socially excluded sections.

2. What are the potential needs of beneficiaries in relation to the proposed project?

Due to abysmally poor delivery of water supply and wastewater services in Kathmandu Valley, adequate supply of safe drinking water and access to sanitation services have become critical needs of the beneficiaries. Kathmandu Valley, also known as the Bagmati Civilization, has been suffering for a long time from pollution in the Bagmati and its tributaries, which have become open sewers. Augmentation of water in the river to enhance the river environment, and make it free of pollution has been the priority demand of all stakeholders. In the middle reach, the demand of stakeholders is to provide irrigation to enhance productivity, and conservation of the watershed to protect from landslides and erosion. The demand of stakeholders for the lower reach of the river basin is to protect it from floods particularly at the areas upstream of the national highway, and increase the command area of the Bagmati irrigation system through conjunctive use of surface and groundwater.

3. What are the potential constraints in accessing the proposed benefits and services, and how will the project address them?

The institutional capacity of the agencies responsible for providing the intended benefits and services will be a constraint. Establishing a new RBO to look after the entire river basin will only succeed if a consensus can be found amongst all basin stakeholders. Coordination with multiple agencies and generating synergy will also be quite challenging. Furthermore, the success of other ongoing projects, such as the Melamchi Water Supply Project and collaboration with other future projects, which are directly or indirectly related to the Bagmati River Basin, will be critical. The Project will also aim to strengthen institutional capacity and improve governance for IWRM in the river basin.

B. Consultation and Participation

1. Indicate the potential initial stakeholders.

Potential stakeholders of the Bagmati River Basin Improvement Project (BRBIP) include the government agencies involved in water resource development and management such as the Ministry of Physical Planning and Works (MPPW), Kathmandu Upatyaka Khanepani Limited (KUKL), Kathmandu Valley Water Supply Management Board (KVWSMB), municipalities, Ministry of Irrigation, High Powered Committee on Integrated Development of Bagmati Civilization (HPCIDBC), Department of Water Induced Disaster Prevention (DWIDP), Department of Irrigation; the direct water users (both men and women) such as the water users associations, the households and the other interest groups such as private sector (Federation of Nepalese Chamber of Commerce and Industries), nongovernment organizations (NGOs), public representatives, academia, and religious groups.

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

The Project is developed based on the IWRM principle in which the ultimate goal is to bring stakeholders together to share a common "vision" of water resource management and development. The achievement of such a goal for the Bagmati River Basin requires intensive consultation with all the relevant stakeholders (government, nongovernment, academicians, religious groups, private sector and women) in the form of workshops, focus group discussions; technical task force meetings and meetings, which have been initiated since October 2010 by RETA 7547: Supporting Investments in Water Security in River Basins and will be continued during the PPTA and later in the project.

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? Yes No Please explain.

The key objective of the consultation process is to build a consensus among stakeholders on how to improve water management in the Bagmati River. This includes collaborative decision on river basin planning and formation of an action plan. This consensus will have to be regularly maintained through continuous feedback and stakeholders' information. Similarly, IWRM also expects stakeholders' involvement in implementing the common vision which in case of riverine communities will require community mobilization.

C. Gender and Development Proposed Gender Mainstreaming Category: Effective Gender Mainstreaming

1. What are the key gender issues in the sector and subsector that are likely to be relevant to this project or program?

In the Kathmandu Valley, especially in low income areas, women tend to suffer more due to lack of water, sanitation and other basic urban services as they are the main collectors, carriers, users and managers of domestic water. Generally, poor or low meaningful participation in decision-making leads to lack of incorporation of their needs and interests in many programs. Women are forced to spend their time in burdensome activities of managing water for the household, working in both household work and on farms, which adversely affect their quality of life. Washing of clothes and utensils in the polluted water of the river, and the related hardships faced by women squatters leads to an unhygienic and unhealthy environment. Burden of care of sick household members due to poor sanitation and water-borne disease always rests on women. Conservation of water will augment water availability in the river and improve the river environment. Hazard risk management will save the squatters living on river banks and communities living in landslide or flood-prone areas from disaster in which women and children are often primary victims.

2. Does the proposed project or 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? Yes No Please explain

The Project will help improve women's access to basic services such as water supply. Access to irrigation water will improve productivity, which will enhance income to meet costs for education of girls, and improve nutrition. Protection against landslides through watershed conservation, and flood hazard protection works will save precious lives and money. Integrated river basin planning will also address capacity strengthening of women and vulnerable communities for better contribution in environment protection, watershed conservation, improved sanitation, and a healthy environment.

3. Could the proposed project have an adverse impact on women and/or girls or widen gender inequality?

Yes No Please explain.

III. SOCIAL SAFEGUARD ISSUES AND OTHER SOCIAL RISKS			
Issue	Nature of Social Issue	Significant/Limited/ No Impact/Not Known	Plan or Other Action Required
<u>Involuntary Resettlement</u>	The Project may include construction of flood protection infrastructure, small water harvesting and groundwater recharge which may involve some land acquisition.	Limited to No impact.	<input type="checkbox"/> Resettlement Plan <input type="checkbox"/> Resettlement Framework <input type="checkbox"/> Environmental and Social Management System <input type="checkbox"/> None <input checked="" type="checkbox"/> Uncertain
<u>Indigenous Peoples</u>	There are many IPs living in the river basin area. It is unlikely project activities will impact IPs in any different way than non-IPs. However, the PPTA will screen the project area for vulnerable IPs who may trigger ADB's SPS 2009, and prepare the required documentation.	Not known.	<input type="checkbox"/> Indigenous Peoples Plan <input type="checkbox"/> Indigenous Peoples Framework <input type="checkbox"/> Environmental Management System Arrangement <input type="checkbox"/> None <input checked="" type="checkbox"/> Uncertain
Labor <input type="checkbox"/> Employment Opportunities <input type="checkbox"/> Labor Retrenchment <input type="checkbox"/> Core Labor Standards	No impact anticipated.	No adverse impact expected. Proper assessment will be undertaken to ensure compliance with labor standards.	<input type="checkbox"/> Plan <input type="checkbox"/> Other Action <input type="checkbox"/> No Action <input checked="" type="checkbox"/> Uncertain
Affordability	No impact anticipated.		<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	No impact anticipated.		<input type="checkbox"/> Plan <input type="checkbox"/> Other Action <input type="checkbox"/> No Action <input type="checkbox"/> Uncertain
IV. PROJECT PREPARATORY TECHNICAL ASSISTANCE/DUE DILIGENCE RESOURCE REQUIREMENT			
1. Do the terms of reference for the project preparatory TA (or other due diligence) include poverty, social, and gender analysis and the relevant specialist(s)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If no, please explain why.			
2. Are resources (consultants, survey budget, and workshop) allocated for conducting poverty, social, and/or gender analysis, and C&P during the project preparatory TA or due diligence? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If no, please explain why.			