



Technical Assistance Report

Project Number: 45065
Capacity Development Technical Assistance (CDTA)
August 2011

**People's Republic of Bangladesh: Climate Change
Capacity Building and Knowledge Management
(Financed by the Strategic Climate Fund)**

Asian Development Bank

CURRENCY EQUIVALENTS

(as of 1 August 2011)

Currency Unit	–	taka (Tk)
Tk1.00	=	\$0.0134
\$1.00	=	Tk74.70

ABBREVIATIONS

ADB	–	Asian Development Bank
BCCSAP	–	Bangladesh Climate Change Strategy and Action Plan
CBKMP	–	capacity building and knowledge management program
CCU	–	Climate Change Unit
IKM	–	information and knowledge management
LGED	–	Local Government Engineering Department
MOEF	–	Ministry of Environment and Forests
PPCR	–	Pilot Program for Climate Resilience
SPCR	–	Strategic Program for Climate Resilience
TA	–	technical assistance

TECHNICAL ASSISTANCE CLASSIFICATION

Type	–	Capacity development technical assistance (CDTA)
Targeting classification	–	General intervention
Sector (subsectors)	–	Multisector (agriculture and rural sector development, urban sector development)
Themes (subthemes)	–	Environmental sustainability (natural resources conservation, urban environmental improvement), capacity development (institutional development), gender equity (human capabilities)
Climate change	–	Adaptation
Location (impact)	–	Rural (high), urban (medium), national (medium), regional (low)
Partnership	–	Pilot Program for Climate Resilience

NOTE

In this report, "\$" refers to US dollars.

Vice-President	X. Zhao, Operations 1
Director General	S.H. Rahman, South Asia Department (SARD)
Director	T. Matsuo, Environment, Natural Resources and Agriculture Division, SARD
Team leader	J. Zhang, Senior Natural Resources and Agriculture Economist, SARD
Team members	A.M. Faisal, Project Officer (Environment), SARD D. Ponzi, Lead Environment Specialist, Regional and Sustainable Development Department

In preparing any country program or strategy, financing any project, or by making any designation of or reference to a particular territory or geographic area in this document, the Asian Development Bank does not intend to make any judgments as to the legal or other status of any territory or area.

I. INTRODUCTION

1. This technical assistance (TA) is the outcome of wide-ranging stakeholder consultation process¹ that led to the development of the Government of Bangladesh's Strategic Program for Climate Resilience (SPCR)² under the Pilot Program for Climate Resilience (PPCR). The PPCR is part of the Strategic Climate Fund³ within the Climate Investment Funds,⁴ and seeks to pilot and demonstrate ways to mainstream climate resilience in development planning and management. Bangladesh was the first country to have its SPCR approved by the PPCR subcommittee on 10 November 2010. The Bangladesh SPCR includes three investment projects and two TA projects to (i) improve coastal embankments, rural connectivity, and water supply and sanitation, and promote public-private financing; and (ii) institutionalize climate change adaptation information and knowledge management (IKM) and raise government capacity (these are the aim of this TA). A TA fact-finding mission was fielded during 28 March–7 April 2011, during which the nature and scope of the TA were presented to the stakeholders and development partners, and the government concurred with the TA impact, outcome, outputs, cost, implementation and financing arrangements, and terms of reference. The PPCR subcommittee approved the TA grant on 2 June 2011. The design and monitoring framework is in Appendix 1.⁵

II. ISSUES

2. Climate change is a pressing development concern for Bangladesh, which is highly vulnerable to the impacts of climate change as a result of its geographic location, low deltaic floodplain, and the hydro-meteorological influence of erratic monsoon rainfall and other extreme climate events. Elements of climate change scenarios—such as sea level rise, increased air and sea surface temperatures, enhanced monsoon precipitation and runoff, reduced dry season precipitation, heat waves and increased intensity of tropical cyclones and storm surges, floods, and prolonged droughts—have all been experienced in the recent past, and have significantly affected the country's development processes. As projected, the impacts of climate change will force millions of people to migrate, squeeze settlements and resource-use patterns, and have serious implications for the physical and natural environment. Given a business-as-usual scenario, climate change will threaten the significant gains made in poverty reduction over the past two decades and disproportionately impact the life and wellbeing of vulnerable groups—including women, children, the elderly, and ethnic minorities—and constrain progress toward achieving the Millennium Development Goals.

3. **Climate change information and knowledge management architecture.** In Bangladesh a significant amount of information has been generated and experience gained that are relevant to climate change adaptation. Coastal communities have adopted community-based indigenous coping techniques, such as raising the plinths of their homes, making structural adjustments and developing specific forms of housing for long-term adaptation, and developing *baira* (floating gardens) for growing vegetables. The dissemination of cyclone warnings using the community radio service and cellphone broadcasts has enhanced the ability of vulnerable communities to

¹ The process included a multi-stakeholder consultation workshop; participants included representatives from ministries, line agencies, nongovernment organizations, civil society organizations, community-based organizations, research and academic institutes, the private sector, and development partners.

² Government of Bangladesh. 2010. *Bangladesh: Strategic Program for Climate Resilience*. <http://www.climateinvestmentfunds.org/cif/sites/climateinvestmentfunds.org/files/PPCR%205%20SPCR%20Bangladesh%20nov2010.pdf>

³ The Strategic Climate Fund provides targeted programs with dedicated funding to pilot new approaches that have the potential to be scaled up. It includes the PPCR, the Forest Investment Program, and the Scaling Up Renewable Energy Program in Low-Income Countries.

⁴ The Climate Investment Funds are a unique pair of financing instruments designed to support low-carbon and climate-resilient development through scaled-up financing channeled through ADB, the African Development Bank, the European Bank for Reconstruction and Development, the Inter-American Development Bank, and the World Bank Group.

⁵ The TA first appeared in the business opportunities section of ADB's website on 6 May 2011.

survive a cyclone strike. Indigenous knowledge of how to survive a cyclone—though actions taken before, during, and after the cyclone—has enhanced the resilience of communities.

4. While generating information is an important element of knowledge management, the information will not have an impact unless it is processed, analyzed, and disseminated to those in need in a format that is easily understood. Moreover, climate change science is continuously being updated, and new information and knowledge products in the form of coping strategies, technologies, and monitoring mechanisms are continuously being developed at national, regional, and global levels. These knowledge products do not necessarily find their way to potential beneficiaries, especially those at the forefront of climate change impacts—farmers, fisherfolk, and coastal communities. The 2010 assessment for the Asia Regional Center of Excellence on Climate Change and Development (funded by the United States Agency for International Development) has identified several technical gaps that affect the region’s ability to effectively address climate change. These include (i) disconnect between climate science and policy applications; (ii) data and modeling needed to answer fundamental questions, and specific tools needed to make more informed decisions when developing climate action plans; and (iii) knowledge management. The latter is constrained by the absence of an appropriate institutional architecture. These constraints must be addressed as part of a climate change adaptation IKM network that encompasses the development and dissemination of easily understandable and implementable knowledge products for the intended beneficiaries within an enabling policy environment and using an appropriate institutional architecture.

5. **Inadequate institutional capacity.** The effectiveness of institutions and agencies in addressing the impacts of climate change across sectors, communities, and vulnerable groups (and especially women) is constrained by inadequate awareness; this is further exacerbated by information gaps, and limited capacity for information generation, analysis, and knowledge management. These are manifested in the absence of processes and procedures needed for capturing and sharing information and knowledge that meets the needs and priorities of stakeholders. Strengthening of key institutions through an appropriate capacity-building program and establishment of appropriate mechanisms for an IKM network are necessary to ensure effective delivery of climate change adaptation and related guidance and services. The climate change adaptation IKM network would provide needed IKM products, which would in turn enhance the government’s position with respect to global climate change adaptation funding requirements, and effective participation in climate change negotiations and diplomacy at global forums.

6. **Climate change adaptation strategies and development planning.** The National Adaptation Program of Action and the Bangladesh Climate Change Strategy and Action Plan provide an adequate basis for establishing cross-sector linkages and prompting inter-sector planning, thus facilitating climate change mainstreaming in development planning. Integration of climate change funding in development planning reinforces mainstream thinking in climate change adaptation. For meaningful transformational change to occur, IKM-specific capacity-building programs are needed that (i) recognize the need for enhanced awareness of climate change; (ii) provide the requisite tools, guidance and knowledge products; and (iii) influence changes in the mindset of decision makers with regard to mainstreaming climate change in policies and practices.

III. THE TECHNICAL ASSISTANCE

A. Impact and Outcome

7. The TA impact will be climate change adaptation effectively mainstreamed in development planning and management. The TA outcome will be climate change adaptation IKM system institutionalized and linked to development planning and management.

B. Methodology and Key Activities

8. The TA will support generation, dissemination, and application of information and knowledge products as the means to influence policies and address the potentially disastrous impacts of climate change. The TA outputs include (i) a well-defined and operational climate change adaptation IKM network, (ii) enhanced institutional capacity with respect to climate change adaptation IKM, and (iii) quality climate change adaptation information and knowledge products generated and disseminated. Consequently, the TA will contribute to development effectiveness on climate change adaptation in Bangladesh.

9. **Climate change adaptation information and knowledge management network and institutional architecture.** The TA will establish an IKM network to collect, generate, and analyze climate change adaptation-relevant products, and disseminate these to potential beneficiaries, especially women and other vulnerable groups. First, the TA will review and analyze the Bangladesh SPCR, the Bangladesh Climate Change Strategy and Action Plan, the Asian Development Bank (ADB) reports for the TA for Supporting Implementation of Bangladesh Climate Change Strategy and Action Plan,⁶ and available information on institutional responses to climate change adaptation, including coordination mechanisms and decision-making protocols, to determine how appropriate these are to deal with current and future challenges. The analysis will also include (i) the current system of adaptation-specific IKM, (ii) sources and availability of climate change-adaptation information and its gender sensitivity, and (iii) information and knowledge gaps that constrain climate-resilient development planning and compromise appropriate and timely delivery of solutions to address climate change impacts when they occur. Secondly, based on these analyses, an appropriate IKM network will be developed, with several nodes: a central node housed in the Climate Change Unit (CCU) of the Ministry of Environment and Forests (MOEF), satellite nodes in key line ministries and agencies, and collaborative partnerships with national and regional climate change adaptation institutions and networks. The institutional architecture will (i) clearly define the network's functions, operational and administrative responsibilities, and protocols; (ii) clearly set forth the mission, organization, and implementation mechanisms to enable effective coordination, administration, and management of the climate change adaptation program; and (iii) include cost estimates and a phased implementation plan.

10. Agreement by key stakeholders regarding the structuring of a climate change adaptation IKM network is needed, given its significance and the need for long-term sustainability. Several wide-ranging consultations (expert consultations, group discussions, workshops, and meetings) will be undertaken on the proposed IKM network and its overall institutional architecture with key stakeholders, including selected nongovernment organizations and community-based organizations, research and academic institutes, and private sector and development partners. Based on this input, the IKM network, its institutional architecture, and the phased implementation plan will be refined and presented to the government for consideration, endorsement, and adoption.

11. **Capacity building.** A capacity-building and knowledge-management program (CBKMP) will be developed and implemented to enhance the capacity of the IKM network-related institutions, taking into account other climate change capacity-building programs and projects.⁷ The CBKMP will also enhance the capacity of relevant government institutions to engage in international climate change negotiations.

12. Once the overall institutional architecture is endorsed, the central node of the IKM network will be established at the CCU, and the first satellite node established at the Local Government

⁶ ADB. 2009. *Technical Assistance to the People's Republic of Bangladesh for Supporting Implementation of the Bangladesh Climate Change Strategy and Action Plan*. Manila (TA 7273-BAN).

⁷ Such as (i) Comprehensive Disaster Management Programme Phase II and (ii) Poverty, Environment, and Climate Mainstreaming, both supported by the United Nations Development Programme (UNDP).

Engineering Department (LGED);⁸ the latter has already established a Geographic Information Systems Unit for geospatial information, and a database for its operations. The unit is fairly well established with equipment, facilities, and professional staff and supports a databank with a wealth of information, some of which would be relevant to climate change adaptation. The unit will be further strengthened to become an effective climate change adaptation-IKM satellite, with the capacity to assist in the design of climate-resilient infrastructure.

13. **Generation and dissemination of information and knowledge products.** The IKM network will be the main online repository of information and knowledge products relevant to climate change adaptation, and will disseminate this information and knowledge—including information on the differential impacts of climate change—across genders, classes, ages, abilities, and ethnic groups. Appropriate linkages will be established with the multidonor Asia Pacific Adaptation Network⁹ and the ongoing TA for Regional Economics of Climate Change in South Asia Part II: Adaptation and Impact Assessment¹⁰ for information sharing and modeling of climate change impacts. The IKM system will include communities as generators of knowledge, and promote peer-to-peer and lateral knowledge sharing. To promote both dissemination and interaction, mass media and social media will be used to facilitate broad knowledge sharing across significant portions of the communities that are (and will likely continue to be) affected by climate change.

14. Country-specific analytical studies will be commissioned on priority topics to address information and knowledge gaps and identify innovative mechanisms to adapt to potentially adverse climate change impacts in highly vulnerable sectors and locations, and on highly vulnerable people (and especially women), using available and standard vulnerability assessments, modeling, and projections. These may include (i) climate change adaptation and disaster risk-reduction strategies; (ii) the economic and financial implications of climate-resilient development; (iii) community-based adaptation measures, indigenous coping mechanisms, and implementation bottlenecks; (iv) information and communication systems; (v) market-based instruments to promote and enhance climate change adaptation; and (vi) other relevant topics. On the basis of these analytical studies, appropriate climate change adaptation proposals will be drawn up and submitted for financing under national, bilateral, and multilateral climate change funds.

15. **Assumptions and risks.** Major assumptions are (i) the government sustains its commitment to mainstream climate change in development planning; (ii) the line ministries, agencies, and institutions are willing to forge and maintain multisector and inter-agency collaborative partnerships; and (iii) there is an enabling policy for effective TA implementation. Risks include (i) the slow pace of necessary institutional, legal, and regulatory adjustments and programming to mainstream climate change; (ii) delays in assignment of qualified personnel to manage the IKM network; and (iii) frequent transfers of government personnel and loss of institutional memory.

C. Cost and Financing

16. The total cost of the TA is estimated at \$600,000 equivalent. The TA will be financed by a \$500,000 grant from the Strategic Climate Fund.¹¹ The government will provide in-kind support in the form of office accommodation, administrative support including secretarial services to the

⁸ LGED is the executing agency for PPCR-funded investment projects administered by ADB. Similar satellite nodes will be established in Bangladesh Water Development Board by the World Bank and the Ministry of Agriculture by the International Finance Corporation, as these are the executing agencies for their administered PPCR-funded investment projects respectively.

⁹ The Asia Pacific Adaptation Network is a regional knowledge-sharing and capacity-building mechanism facilitated by ADB, the United Nations Environment Programme, and others, and provides a web-portal for knowledge management (<http://www.asiapacificadapt.net/>).

¹⁰ ADB. 2009. *Technical Assistance for Regional Economics of Climate Change in South Asia Part II: Adaptation and Impact Assessment*. Manila (TA 7423-REG).

¹¹ Under the Pilot Program for Climate Resilience, and administered by ADB.

steering committee, counterpart staff salaries and allowances, and assistance in organizing seminars and workshops (together estimated at \$100,000 equivalent). The cost estimates and financing plan are in Appendix 2.

D. Implementation Arrangements

17. The TA will be implemented over a period of 18 months (January 2012–June 2013). MOEF will be the executing agency and appoint a project director not below the rank of deputy secretary to coordinate the TA activities. MOEF will assign two fulltime counterpart staff, working under the director of the CCU (one each for adaptation and knowledge management) to work with the consultant team, help establish and maintain the IKM network, and ensure its continuity beyond the implementation period. MOEF will also constitute a TA steering committee to guide and oversee implementation.¹² ADB will supervise and undertake reviews to monitor progress and ensure effective implementation.

18. The TA inception report, first quarterly progress report, midterm report, and final report will be presented to the steering committee. To ensure outputs are of high quality, ADB and MOEF will set up a technical working group that includes at least three experts (in climate change adaptation; economics and finance; and policy, legal, and institutional analysis). The experts will be selected from a panel of experts to be developed during implementation, and will follow clear terms of reference in reviewing the proposed IKM institutional architecture and the associated CBKMP and selected analytical studies. All reports, including proceedings of workshops, will be posted on the IKM network.

19. The TA proceeds will be disbursed in accordance with ADB's *Technical Assistance Disbursement Handbook* (2010, as amended from time to time). ADB will be responsible for the procurement of all goods and related services in accordance with ADB's Procurement Guidelines (2010, as amended from time to time).¹³ The consultants will be engaged by ADB in accordance with ADB's Guidelines on the Use of Consultants (2010, as amended from time to time) and other arrangements satisfactory to ADB for engaging international and national consultants. A team of consultants comprising one international (team leader for 10 person-months) and three national experts (12 person-months each) will be engaged through a firm using simplified technical proposals and quality- and cost-based selection with quality-cost ratio of 90:10;¹⁴ terms of reference are in Appendix 3. Commissioned studies and surveys will be outsourced to qualified individuals or organizations in accordance with ADB's Guidelines on the Use of Consultants.

IV. THE PRESIDENT'S DECISION

20. The President, acting under the authority delegated by the Board, has approved ADB administering technical assistance not exceeding the equivalent of \$500,000 to the Government of Bangladesh to be financed on a grant basis by the Strategic Climate Fund for Climate Change Capacity Building and Knowledge Management, and hereby reports this action to the Board.

¹² The steering committee will be chaired by the secretary of MOEF with representation from the Planning Commission, the Finance Division, the Economic Relation Division, the Ministry of Agriculture, the Ministry of Food and Disaster Management, the Ministry of Local Government, the Rural Development and Cooperatives, the Ministry of Water Resources, the Bangladesh Water Development Board, the Department of Environment, LGED, the Forest Department, and the Bangladesh Agriculture Research Institute. MOEF will provide secretarial support to the steering committee and coordinate with ministries and agencies concerned.

¹³ The procured equipment and furniture will remain in the government agencies after completion of the technical assistance.

¹⁴ A higher weight for the quality of the technical proposal is warranted because of the complex and highly technical nature of the consulting services.

DESIGN AND MONITORING FRAMEWORK

Design Summary	Performance Targets and Indicators with Baselines	Data Sources and Reporting Mechanisms	Assumptions and Risks
Impact Climate change adaptation effectively mainstreamed in development planning and management	Climate change included as a key pillar in the government's 2016-2020 5-year development plan Increased national and global financing in support of climate change adaptation (proportional to BCCSAP estimates)	Bangladesh Seventh Five Year Plan: 2016-2020 (Planning Commission) Government annual budgeting documents (MOF)	Assumption The government sustains its commitment to mainstream climate change in development planning.
Outcome Climate change adaptation IKM system institutionalized and linked to development planning and management	Climate change knowledge management protocols and monitoring mechanisms, including gender and socially sensitive indicators on adaptation, adopted and applied by MOEF on coordinating climate change budgeting and planning with line ministries, MOF, and Planning Commission (by June 2013)	Government annual planning and budgeting documents (Planning Commission, MOF, line ministries)	Assumption The line ministries, agencies, and institutions are willing to forge and maintain multisector and inter-agency collaborative partnerships. Risk The slow pace of necessary institutional, legal, and regulatory adjustments and programming to mainstream climate change
Outputs 1. A well-defined and operational climate change adaptation IKM network 2. Enhanced institutional capacity with respect to climate change adaptation IKM	1.1 IKM network and its institutional architecture developed (by March 2012) 1.2. IKM network and its institutional architecture endorsed by MOEF (by April 2012) 1.3 IKM network central node in the Climate Change Unit of MOEF functional with requisite facilities and qualified and trained personnel (by June 2012) 1.4 The LGED IKM network satellite node functional and linked with the central node (by June 2012) 2.1 CBKMP prepared and implementation started (by July 2012) 2.2 Sector-specific, gender and socially inclusive capacity-building programs on climate change IKM developed (by June 2013) 2.3 Staff of IKM network institutions trained on climate change IKM and mainstreaming of climate change in development planning, programming and management (by June 2013) 2.4 Monthly climate IKM briefings to	Project progress report (MOEF) MOEF meeting minutes MOEF operating documents LGED newsletter Project progress report (MOEF) Training program manual and reports (MOEF) Project progress report (MOEF) IKM briefings (MOEF)	Assumption There is an enabling policy for effective TA implementation. Risks Delays in assignment of qualified personnel to manage the IKM network Frequent transfers of government personnel and loss of institutional memory

Design Summary	Performance Targets and Indicators with Baselines	Data Sources and Reporting Mechanisms	Assumptions and Risks
3. Quality climate change adaptation information and knowledge products generated and disseminated	<p>keep global climate negotiation staff abreast of most updated information and knowledge (by June 2013)</p> <p>3.1 Updated and relevant information and knowledge products, including web-based information, networking, blogging, and knowledge management (by June 2013)</p> <p>3.2 Commissioned analytical studies to strengthen the IKM database undertaken and disseminated (by June 2013)</p> <p>3.3 Bangladesh climate change IKM website linked to regional and international database network (by June 2013)</p>	<p>IKM website (MOEF)</p> <p>Reports and publications on commissioned analytical studies, and proceedings of seminars and stakeholder workshops (MOEF)</p> <p>ADB climate change website</p>	

Activities with Milestones	Inputs																										
<p>1. Project management</p> <p>1.1 Consultants recruited (by December 2011)</p> <p>1.2 Project director and staff appointed (by January 2012)</p> <p>1.3 Project steering committee established (by January 2012)</p> <p>1.4 Draft final report prepared documenting the outputs and the outcome of the TA, including the IKM network and institutional architecture and recommendations regarding future course of action and investment options, cost estimates, and other details for consideration by the government (by May 2013)</p> <p>1.5 Draft final report presented, feedback obtained, and report finalized incorporating comments as appropriate (by June 2013)</p> <p>2. A well well-defined and operational climate change adaptation IKM network</p> <p>2.1 Review and analysis of available information in the Bangladesh Strategic Program for Climate Resilience, reports for TA for Supporting Implementation of the Bangladesh Climate Change Strategy and Action Plan,^a BCCSAP, and other relevant documents on institutional responses to climate change adaptation, including coordination mechanisms and decision-making protocols to determine their comparative advantage to deal with current and future challenges (by January 2012).</p> <p>2.2 Development of an appropriate IKM network (comprising a central node and satellite nodes in key sector institutions, beginning with the LGED satellite node) and the institutional architecture needed for effective climate change program management and operation (by March 2012)</p> <p>2.3 First quarterly report prepared summarizing the methodology and implementation plan for the IKM network, and presentation of the report in a stakeholder workshop (by March 2012)</p> <p>2.4 Wide-ranging consultations and workshops held with key government and nongovernment stakeholders to obtain feedback on the proposed IKM network and institutional architecture, IKM network and institutional architecture refined and phased implementation plan developed based on the feedback, and architecture and implementation plan presented to the Government of Bangladesh for consideration (by April 2012)</p> <p>2.5 Following agreement on the institutional architecture, (i) the central</p>	<p>Technical Assistance: ADB Administered Strategic Climate Fund: \$500,000^b</p> <table border="1"> <thead> <tr> <th>Item</th> <th>Amount (\$)</th> </tr> </thead> <tbody> <tr> <td>Consulting services</td> <td>\$378,000</td> </tr> <tr> <td>International (10 person-months), National (36 person-months)</td> <td></td> </tr> <tr> <td>Equipment and furniture</td> <td>\$15,000</td> </tr> <tr> <td>Training, seminars, and workshops</td> <td>\$25,000</td> </tr> <tr> <td>Commissioned analytical studies and surveys</td> <td>\$50,000</td> </tr> <tr> <td>Miscellaneous administration and support costs</td> <td>\$5,000</td> </tr> <tr> <td>Representative for contract negotiations</td> <td>\$5,000</td> </tr> <tr> <td>Contingencies</td> <td>\$22,000</td> </tr> </tbody> </table> <p>Government: \$100,000 (in-kind)</p> <table border="1"> <thead> <tr> <th>Item</th> <th>Amount (\$)</th> </tr> </thead> <tbody> <tr> <td>Office accommodation and transport</td> <td>\$35,000</td> </tr> <tr> <td>Remuneration and per diem of counterpart staff</td> <td>\$45,000</td> </tr> <tr> <td>Others</td> <td>\$20,000</td> </tr> </tbody> </table>	Item	Amount (\$)	Consulting services	\$378,000	International (10 person-months), National (36 person-months)		Equipment and furniture	\$15,000	Training, seminars, and workshops	\$25,000	Commissioned analytical studies and surveys	\$50,000	Miscellaneous administration and support costs	\$5,000	Representative for contract negotiations	\$5,000	Contingencies	\$22,000	Item	Amount (\$)	Office accommodation and transport	\$35,000	Remuneration and per diem of counterpart staff	\$45,000	Others	\$20,000
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Activities with Milestones	
<p>node of the IKM network established and equipped with facilities and appropriately qualified personnel assigned by the government; and (ii) the first satellite node simultaneously established at LGED, with requisite equipment, facilities and counterpart staff (by June 2012).</p> <p>2.6 Operationalization of the IKM network begun, with (i) a central node and satellite node; (ii) a clear structure, functions, and operational and administrative responsibilities; and (iii) information and knowledge management protocols (by June 2012)</p> <p>3. Enhanced institutional capacity with respect to climate change adaptation IKM</p> <p>3.1 Development and approval of an IKM-specific CBKMP to enhance the capacity of institutions and organizations and improve their operational capacity, with an estimate of funding requirements and phased implementation plan (by July 2012)</p> <p>3.2 Training of counterpart staff at the central and satellite nodes (in accordance with the CBKMP) begun, as part of the first phase implementation (by July 2012)</p> <p>4. Climate change adaptation information and knowledge products generated and disseminated</p> <p>4.1 Analytical studies commissioned to address information and knowledge gaps, identify innovative mechanisms to adapt to potentially adverse impacts of climate change in highly vulnerable sectors and locations using available and standard vulnerability assessments, modeling and projections; studies will include assessment of vulnerable locations and sectors and estimate funding requirements for adaptation to climate change, and identify potential sources for funding for climate change adaptation (by June 2013).</p> <p>4.2 Seminars and workshops organized and held for key stakeholders, including the private sector, to present progress reports, findings and conclusions of various commissioned analytical studies and surveys, and the capacity-building and knowledge management program to seek stakeholder feedback and monitor progress (by June 2013)</p>	

ADB = Asian Development Bank, BCCSAP = Bangladesh Climate Change Strategy and Action Plan, CBKMP = capacity building and knowledge management plan, IKM = information and knowledge management, LGED = Local Government Engineering Department, MOEF = Ministry of Environment and Forests, MOF = Ministry of Finance, TA = technical assistance.

^a ADB. 2009. *Technical Assistance to the People's Republic of Bangladesh for Supporting Implementation of the Bangladesh Climate Change Strategy and Action Plan*. Manila (TA 7273-BAN).

^b Under the Pilot Program for Climate Resilience.

Source: Asian Development Bank.

COST ESTIMATES AND FINANCING PLAN
(\$'000)

Item	Total Cost
A. Strategic Climate Fund^a	
1. Consultants	
a. Remuneration and per diem	
i. International consultants (10 person-months)	200.00
ii. National consultants (36 person-months)	160.00
b. International and local travel	16.00
c. Reports and communications	2.00
2. Equipment and furniture ^b	15.00
3. Training, seminars, and workshops	25.00
4. Commissioned analytical studies and surveys	50.00
5. Miscellaneous administration and support costs	5.00
6. Representative for contract negotiations	5.00
7. Contingencies	22.00
Subtotal (A)	500.00
B. Government of Bangladesh (in kind)	
1. Office accommodation and transport	35.00
2. Remuneration and per diem of counterpart staff	45.00
3. Others ^c	20.00
Subtotal (B)	100.00
Total	600.00

^a Under the Pilot Program for Climate Resilience, and administered by the Asian Development Bank.

^b Including computer, printer, accessories, software, modem, digital projector, photocopier, scanner, and air cooler.
After completion of the technical assistance, equipment and furniture will remain with the government agencies.

^c Including telephones and connections, internet services, and secretariat support to the steering committee.

Source: Asian Development Bank estimates.

OUTLINE TERMS OF REFERENCE FOR CONSULTANTS

A. Terms of Reference

1. **Climate change adaptation and knowledge management** (team leader, international, 10 person-months). Qualifications include advanced degrees in natural resources management or environmental sciences, at least 10 years experience in climate change-related issues, with minimum of 2 years in Bangladesh. The team leader will supervise overall implementation, other consultants, and delivery of all outputs. In the context of the current situation; institutional capacities, policies and programs; and the status of knowledge and knowledge management, including dissemination needs, the consultant will:

- (i) Examine the Bangladesh Climate Change Strategy and Action Plan (BCCSAP); National Adaptation Program of Action (NAPA); Bangladesh Strategic Program for Climate Resilience (SPCR); the Asian Development Bank (ADB) report for the technical assistance (TA) for Supporting Implementation of Bangladesh Climate Change Strategy and Action Plan;¹ economic and financial policy frameworks, including the 5-year development plans; and existing information on climate change vulnerabilities and impacts and possible adaptation options for addressing such impacts in the short, medium, and long term.
- (ii) Analyze the current climate change information and knowledge management (IKM) system, relevant data, sources and availability of information, and research and studies relevant to development and dissemination of knowledge products; and identify information and knowledge gaps regarding climate change impacts on vulnerable communities—particularly women and children—constraining adoption of climate-resilient development planning and compromising appropriate and timely delivery of solutions to address climate change impacts as and when they occur.
- (iii) Identify climate change-IKM institutions at the national, regional and global levels, and analyze opportunities from existing programs, strategies, and projects of other development partners to mainstream climate change adaptation. Informed by this analysis, explore establishment of information-sharing links and collaborative partnerships with selected national, regional, and international institutions based on their comparative advantage and unique qualifications, and supported by agreements with the Ministry of Environment and Forests (MOEF), as appropriate.
- (iv) Aiming for effective management and operation of a climate change program, and based on the above, develop a suitable climate change-IKM network and associated institutional architecture that includes (a) a central node in the Climate Change Unit (CCU) of MOEF; and (b) satellite nodes in key government institutions, with the first established in the Local Government Engineering Department (LGED). The IKM network will collect, generate, and analyze climate change-relevant IKM products and their dissemination to potential beneficiaries to enhance awareness, provide guidance, and influence climate change mainstreaming in development planning. The institutional architecture will (a) define the network's functions, operational and administrative responsibilities, and appropriate IKM protocols, as part of its design; and (b) set forth the vision, mission, organization, and implementation mechanisms for effective coordination, administration, and management of the climate change program, with the IKM network as its integral component.
- (v) Develop cost estimates and a time frame for implementing the overall institutional infrastructure for the IKM network, including an exit strategy that will elaborate how

¹ ADB. 2009. *Technical Assistance to the People's Republic of Bangladesh for Supporting Implementation of the Bangladesh Climate Change Strategy and Action Plan*. Manila (TA 7273-BAN).

- CCU will update and maintain the website upon completion of consultants' work, including resource requirements.
- (vi) Present the proposed IKM network and institutional architecture to various government and nongovernment stakeholders, including development partners. Based on stakeholder feedback, finalize the proposal for consideration, endorsement, and adoption by the government.
 - (vii) Develop terms of reference for priority analytical studies, commissioned on climate change-relevant topics to address information gaps; identify and engage resource persons or institutions as per ADB guidelines; and guide the studies. Commissioned topics may include (a) location- and sector-specific climate change impacts, including gender dimensions of climate change, particularly the impacts on women and children; (b) innovative mechanisms to adapt to potentially adverse impacts of climate change in highly vulnerable sectors and locations using available and standard vulnerability assessments, modeling and projections; (c) climate change adaptation and disaster risk-reduction strategies; (d) economic and financial implications of climate-resilient development; (e) indigenous coping mechanisms; (f) analysis of communities' typical bottlenecks in implementing adaptation measures and how these can be overcome; (g) information and communication systems; and (h) market-based instruments to promote and enhance climate change adaptation. Studies will be selected according to relevance, urgency, linkage with ongoing or programmed investment projects, and availability of funds.
 - (viii) In consultation with MOEF and ADB, develop a panel of national experts, and select three experts (in climate change adaptation; economics and finance; and policy, legal, and institutional analysis) to review the proposed institutional architecture and the associated capacity-building and knowledge management program and selected analytical studies. Of the commissioned analytical studies, draft appropriate and high-priority climate change adaptation proposals for financing under national, bilateral and multilateral climate change funds. Ensure that IKM products generated are accessible to potential beneficiaries in vulnerable locations, including vulnerable communities (especially women); sector institutions; development partners; and the global community, including the Global Support Program of Climate Investment Funds—through the IKM network and via appropriate means for each group.
 - (ix) In consultation with other team members, provide guidance in organizing workshops, seminars, and focus group discussions with key stakeholders, including women and other vulnerable groups, to enhance their understanding of the IKM network, the institutional architecture, and its operations.
 - (x) Provide guidance to other consultants in ensuring development of high-quality reports, especially the IKM-specific capacity building and knowledge management plan and the proposed IKM network.

2. **Institutional analysis and capacity building** (deputy team leader, national, 12 person-months). Qualifications include advanced degrees in natural resources management, natural resources and environmental economics, development economics, environmental policy, or institutional analysis, at least 10 years experience in institutional analysis and capacity building, and 5 years in climate change-related issues in Bangladesh. The deputy team leader will assist the team leader in overall TA implementation. Guided by the team leader, the deputy team leader will:

- (i) Examine the BCCSAP; NAPA; Bangladesh SPCR; ADB reports for the TA for Supporting Implementation of Bangladesh Climate Change Strategy and Action Plan; economic and financial policy frameworks, including the 5-year development plans; strategies and existing information on climate change vulnerabilities and impacts; and possible adaptation options for addressing such impacts in the short, medium, and long term.

- (ii) Review available information on the current capacity of various climate change-relevant institutions to determine their preparedness for IKM, including information generation, analysis, and dissemination.
- (iii) Assess the implementation capacity of national-level institutions regarding climate change, their level of coordination, and information exchange. Review and properly use the needs assessments from the TA for Supporting Implementation of Bangladesh Climate Change Strategy and Action Plan, and other relevant reports.
- (iv) Based on the above, and in consultation with the information technology and knowledge management infrastructure specialist, develop an IKM-specific capacity building and knowledge management plan (CBKMP) to enhance the capacity of IKM network-related institutions to manage, coordinate, monitor and evaluate a climate change program. The CBKMP, will include (a) activities enhancing the institutional capacity of IKM-related institutions (i.e., CCU and LGED) for effective delivery of programs, investment projects, and associated services, eventually leading to climate change mainstreaming; (b) capacity to review and analyze technical and nontechnical information, and knowledge products relevant to enhancing climate change resilience in various sectors (agriculture, water and sanitation, health and social services, infrastructure), and appropriate dissemination mechanisms to potential beneficiaries; and (c) capacity to monitor, report, and verify.
- (v) Develop a phased plan to implement the institutional infrastructure. Estimate each phase's funding requirements, given other climate change capacity-building programs and projects. Design the first phase to be implemented during the TA.
- (vi) Present to key stakeholders, appropriateness of earlier assessments and the proposed CBKMP in terms of addressing capacity constraints in climate change program management. Incorporate feedback and finalize the report for consideration, endorsement, and adoption by the government.
- (vii) Provide guidance to other consultants in ensuring high-quality reports, especially the IKM-specific CBKMP and the proposed IKM network.
- (viii) In consultation with other team members, assist in organizing training workshops, seminars, and focus group discussions with key stakeholders, especially vulnerable groups and women, to enhance their understanding of climate change and its relevance to the IKM network, the institutional architecture, and its operations.
- (ix) Prepare reports as advised by the team leader and assist the team leader in various tasks to accomplish anticipated TA outputs.

3. Information technology and knowledge management infrastructure specialist (national, 12 person-months). Qualifications include an advanced degree in information technology and knowledge management, electronics and communication engineering, with applications including development of multilevel websites for data storage and retrieval, with at least 5 years experience in a relevant field. In consultation with other members, the consultant will:

- (i) Examine the BCCSAP, NAPA, Bangladesh SPCR, ADB reports for the TA for Supporting Implementation of Bangladesh Climate Change Strategy and Action Plan, and existing information on climate change vulnerabilities and impacts, and possible adaptation options for addressing such impacts.
- (ii) Review current documentation and classification systems of available climate change adaptation-related data, and determine data gaps. In this context, review the current database management system in the Geographic Information Systems Unit of LGED aiming to understand its strengths and weaknesses with respect to climate change IKM. Determine measures to (a) further strengthen the unit and expand its operational scope on LGED-specific climate change-relevant IKM, (b) enhance its capacity for dissemination of climate change-relevant IKM across sectors and

- institutions, and (c) administer and operate the climate change-IKM system for effective networking.
- (iii) Based on the above, and in consultation with other consultants, design a climate change-IKM network as an integral part of the institutional infrastructure. Provide guidance and inputs in developing the overall institutional architecture, with the IKM network at its core and satellites in various sector institutions, together with implementation arrangements and an implementation plan (timeline).
 - (iv) The IKM network will host and disseminate updated climate change-relevant information and knowledge products, in appropriate formats (e.g., web- and paper-based, leaflets, and brochures) with inputs that include (a) climate change-relevant information available from national, regional, and global sources, including the differential impacts of climate change across genders, classes, ages, abilities, and ethnic groups; (b) the results of commissioned analytical studies to address climate change knowledge and information gaps; and (c) proceedings of seminars, stakeholder workshops, focus group discussions, progress reports, and other climate change-relevant information and knowledge products.
 - (v) With endorsement of the overall institutional architecture and design of the IKM network, recommend materials, equipment (hardware and software), and facilities needed to set up the IKM network. Assist the team leader in procuring the materials and equipment, and establish the CCU central node and LGED satellite node.
 - (vi) Design and develop a website to disseminate IKM products—including progress reports produced by consultants, findings and conclusions of various commissioned analytical studies and surveys, and capacity-building and knowledge management programs—with links to satellite nodes in various sectors, and national, regional, and global climate change adaptation-relevant institutions (including the Asia Pacific Adaptation Network, Climate Action Network South Asia, Climate Change Knowledge Network, and the Climate Investment Funds, especially its Global Support Program).
 - (vii) In consultation with other team members, undertake training workshops, seminars, and focus group discussions to build counterpart staff capacity at the central and satellite nodes, to enhance their understanding of the network and its operations. In addition, provide on-the-job training to counterpart staff in operating the IKM network.
 - (viii) Prepare reports as advised by the team leader and assist the team leader in various tasks to accomplish anticipated TA outputs.
 - (ix) Maintain website backup and promptly troubleshoot technical problems.

4. Public participation, gender and social development, workshop organization, and training specialist (national, 12 person-months). Qualifications include an advanced degree in social sciences or relevant field, and at least 5 years of experience in facilitating public participation and gender dimensions of development relevant to climate change and associated risks on vulnerable groups. The consultant will:

- (i) Review and document available information and secondary data for assessing social dimensions relevant to climate change in vulnerable locations in Bangladesh. Identify information gaps for analytical studies with specific reference to gender and development as affected by climate change.
- (ii) Identify climate change adaptation-relevant government and nongovernment stakeholders at national and subnational levels, and assess their current capacity to address potential impacts of climate change on vulnerable groups (e.g., women, children, the elderly, and ethnic minorities).
- (iii) Organize stakeholder workshops and group discussions to better understand the needs of vulnerable groups and identify interventions to enhance their access to information and knowledge products. Provide feedback to the team leader and the

- information technology and knowledge management infrastructure specialist on the design of the IKM network and associated institutional architecture, and ensure its gender sensitivity, particularly in generating climate change-relevant information and the commissioned analytical studies.
- (iv) Assess challenges constraining participation of vulnerable groups in climate change adaptation programs, and identify the need for IKM products that will enhance their understanding of climate change and improve their participation. Ensure that the IKM network systematically and effectively addresses gender-specific impacts of climate change, especially those that have direct bearing on the life and well being of vulnerable groups.
 - (v) In consultation with the team leader, organize regular wide-ranging consultations such as group discussions, workshops, and meetings, with key stakeholders (including the private sector and development partners) and seek their feedback regarding the various climate change knowledge products as these are developed, including regarding the proposed IKM network and institutional architecture (including protocols and implementation mechanisms). The IKM network, institutional architecture and phased implementation plan will be refined based on input received and presented to the government for consideration.
 - (vi) With endorsement of the IKM network and institutional architecture, and in consultation with other team members, organize and hold workshops, seminars, and group discussions at regular intervals, aiming to disseminate information and knowledge products, and enhance awareness of key stakeholders.
 - (vii) Based on the approved CBKMP and in consultation with other team members, design, organize, and undertake training workshops and seminars to enhance the capacity of counterpart staff and other staff of key institutions involved with the IKM network's central and satellite nodes.
 - (viii) Prepare reports as advised by the team leader and assist the team leader in various tasks to accomplish the anticipated TA outputs.

B. Reporting Requirements

5. Inception report will be submitted within 2 weeks of fielding the consultant team and will include preliminary findings, approach and methodology, workplan, and implementation timeline for anticipated outputs. The first quarterly report will document progress and include the draft IKM network and institutional architecture, and the draft CBKMP. Follow-up quarterly reports will document implementation progress.

6. The midterm report will document progress in establishing and operationalizing the IKM network, status of progress in capacity building, information and knowledge products developed by various consultants, the results of commissioned analytical studies presented at various seminars and stakeholder workshops, and the proceedings of any seminars and workshops.

7. The draft final and final reports will document the outputs and the outcome of the TA, including the status of the IKM network and institutional architecture and its operations with recommendations regarding the future course of action and investment options for further strengthening of the IKM network, cost estimates, and other details for consideration of the government. Present the draft final report 2 weeks prior to the closing date of the TA, seek feedback, and finalize the report incorporating the comments as appropriate.