TERMS OF REFERENCE FOR CONSULTANTS

A. Background

1. Economic growth and prosperity of Greater Mekong Subregion (GMS) countries are largely anchored in intensive use of the subregion's abundant natural resources.[1] However, the subregion is experiencing a rapid depletion of natural assets such as land, forest, water, and wetlands, and a decline in ecosystem services and environmental quality. Such environmental degradation and destruction of infrastructure result in capital losses and erodes development gains achieved in terms of production, market linkages, employment generation, livelihoods, and social and gender equity.

2. **Increase in climate change vulnerability and greenhouse gas emissions**. Cambodia, Myanmar, Thailand, and Viet Nam were identified amongst the ten most vulnerable countries to climate change.[2] Adverse impacts of climate change and transboundary climate risks in the GMS on rural infrastructure, communities, and ecosystems are projected to be severe. In Thailand and Viet Nam, for example, ADB has projected climate change to reduce rice yields by 50% and gross domestic product by 7% by 2050 if no concerted actions are taken.[3] Greenhouse gas emissions per capita in the GMS have more than doubled since 2001 and are increasing at a faster rate than any other region, because of growing dependence on fossil fuels to meet energy and transport demands and continuing deforestation and land use changes. Indeed, GMS countries identified that deforestation and land-use change coupled with increasing energy use in agriculture, industry, and transportation, are the main factors for rise in greenhouse gas emissions in the subregion.

3. **Degradation of natural landscapes and growing pollution.** Natural asset losses in the GMS are valued at 10%–12% of annual gross domestic product.[4] Fragmentation and degradation of habitats and landscapes, exacerbated by climate change, increase such losses. Habitat fragmentation can reduce biodiversity by 13 to 75% and impairs essential ecosystem functions and services by decreasing biomass and altering nutrient cycles.[5] Likewise, the push for industrial development and agricultural intensification has significantly increased air, water and soil pollution. Exposure to air and water pollution costs at least 9 million lives annually, mostly in developing Asia.[6] Fertilizers, pesticides, and sediment are the main sources of agricultural pollutants that degrade and contaminate soil, groundwater aquifers, and surface water; and directly impact the food chain. Recently, adverse impacts of marine plastic pollution are also becoming well known. Deterioration of natural resources and environmental quality has constrained the capacity of GMS economies to be resilient to climate risks.

4. **Low adoption of innovative technologies and financing deficits.** Low technical know-how, limited adoption of climate-resilient and low carbon technologies, and funding barriers have led to resource use inefficiencies and vulnerabilities across GMS value chains. The GMS, more than other regions, lacks consistent and comprehensive information on using innovative technologies to address climate change and environmental sustainability and institutions that can

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[1] ADB. 2018. *Greater Mekong Subregion Core Environment Program Environmental Performance Assessment*, *2006-2016.* Manila.

[2] D. Eckstein, S. Kreft, and I. Melchior. 2016. Global Climate Risk Index: *Who Suffers Most from Extreme Weather Events? Weather Related Loss Events in 2015 and 1996-2015.* Bonn.

[3] ADB. 2017. *A Region at Risk: The Human Dimensions of Climate Change in Asia and the Pacific.* Manila.

[4] GMS CEP. 2015. *Investing in Natural Capital for a Sustainable Future in the Greater Mekong Subregion,* Bangkok.

[5] N. M. Haddard. 2015. *Habitat fragmentation and its lasting impact on Earth's ecosystems.* Science Advances. USA.

[6] UN Environment. 2019. *Global Environment Outlook 6.* Nairobi.

facilitate technology transfer. Furthermore, current levels of investments in green infrastructure and technologies in GMS are well below the needs, and available financing to address climate and disaster risks is also extremely limited. The Association of Southeast Asian Nations Catalytic Green Financing Facility, established in April 2019, aims to mobilize $1 billion to provide loans and necessary technical assistance for sovereign green infrastructure projects such as sustainable transport, clean energy, and resilient water systems.

5.   Regional cooperation is critical to address above challenges in terms of (i) promoting enabling policies and regulatory frameworks, (ii) strengthening capacities of diverse stakeholders, including the private sector, and (iii) demonstrating advanced technologies and financing instruments in the GMS. Effective management of climate change and environmental risks to communities, assets and supply chains will require innovative partnerships, focusing on project incubation and scaling up, strategic planning and policy advisories, and knowledge support.

6.   The GMS Working Group on Environment (WGE), at its 24th Annual Meeting held in April 2019 in Kunming, People's Republic of China, prioritized six themes and sought ADB support.[7] They include: (i) building climate and disaster resilience; (ii) facilitating low carbon transitions; (iii) promoting climate-smart landscapes; (iv) enhancing environmental quality through pollution control and sustainable waste management; (v) deploying digital technologies for climate actions and environmental sustainability, and (vi) financing low-carbon and climate-resilient infrastructure and technologies, including demonstrating climate and disaster risk financing instruments.

7.   Building on the key achievements of the two phases of the GMS Core Environment Program (CEP), a knowledge and support technical assistance (TA) on the GMS Climate Change and Environment Sustainability Program is expected for approval by the ADB President in December 2019. The KSTA will support the implementation of the GMS Core Environment Program Strategic Framework and Action Plan. It will support countries in achieving biodiversity and climate action-related Sustainable Development Goals, and the Nationally Determined Contributions under the Paris Agreement on Climate Change. The proposed KSTA will assist GMS towards becoming a more integrated, inclusive, resilient, prosperous, and sustainable subregion by contributing to the development of a higher number of "green and climate-friendly" projects in the GMS Regional Investment Framework.

8.   The KSTA has three outputs: (i) climate and disaster resilience enhanced, and low carbon transitions facilitated, (ii) climate-smart landscapes promoted and environmental quality enhanced, and (iii) green technologies and financing instruments demonstrated. It is strongly aligned with Strategy 2030 operational priorities of the Asian Development Bank (ADB), including (i) tackling climate change, building climate and disaster resilience and enhancing environmental sustainability, and (ii) fostering regional cooperation and integration.[8]

9.   The TA requires two types of consulting services: (i) an international consulting firm, and (ii) individual consultants for assistance with coordination of overall TA activities. The consulting firms will be hired in accordance with ADB Procurement Policy (2017, as amended from time to time) using full technical proposal, and quality- and cost-based (QCBS 90:10) selection method. The inputs specified in the table below are indicative and the firm is encouraged to propose

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[7] GMS CEP. 2019. Record of Discussion of the 24th Annual Meeting of the GMS Working Group on Environment. Kunming.

[8] GMS CEP. 2018. *Greater Mekong Subregion Core Environment Program Strategic Framework and Action Plan, 2018-2022.* Bangkok; and ADB. 2018. *Strategy 2030: Achieving a Prosperous, Inclusive, Resilient, and Sustainable Asia and the Pacific.* Manila.

additional inputs required to complete the assignment within the time scheduled and proposed maximum budgets.

Table: Summary of Consulting Services Requirement

Expertise/Position	International (person-months)	National (person-months)
A. Consulting firm:		
Climate Change Adaptation and Disaster Risk Management Specialist and Team Leader	6	24
Climate Change Adaptation Economist	3	6
Ecosystem-based CCA and DRM specialist	3	6
Community-based CCA and DRM specialist	3	6
National Adaptation Planning (NAP) Specialist	2	6
Knowledge Management Specialist (CCA and DRM)	2	6
Capacity Building Specialist (CCA and DRM)	2	6
Landscape Management and REDD+ Specialist	9	24
REDD+/ PES Economist	4	12
Land Use Planning and Spatial Analysis Specialist	4	12
Knowledge Management, and Monitoring and Reporting Specialist	4	12
Gender Specialist	4	16
Climate Change Mitigation Specialist	5	16
Environmental Quality Specialist	5	16
Digital Technology Specialist	5	16
Disaster Risk Financing Specialist	5	16
Subtotal (A)	**66**	**200**
B. Individual consultants:		
Thematic coordinator	20	---
Administrative and accounting assistant	---	30
Subtotal (B)	**20**	**30**
Grand Total (A+B)	**86**	**230**

B.   Consulting Service Packages (66 person-months of international inputs, 200 person-months of national inputs)

10.   **Climate Change Adaptation and Disaster Risk Management Specialist/Team Leader (international, intermittent, 6 person-months).** The consultant ideally will have at least a master's degree in economics, environmental science, or a related field, and 10 years of experience related to the environment, adaptation planning, and DRM. Knowledge of ADB and extensive experience in the GMS are highly desirable. The consultant will support the preparation of subregional policy assessments for CCA and DRM, and review of national adaptation plans, and the formulation of climate investment plans, focusing on agriculture, water resources, transport, and energy sectors, which are aligned with country nationally determined contributions and other climate and development plans. The consultant will be responsible for the following tasks:

i)   be responsible for overall coordination, supervision, and management of TA sub-output implementation, including coordination of inputs by other consultants;

ii)   assess target countries' sector climate change commitments, policies, strategies, regulations, and climate investment opportunities;

iii)   lead the preparation of climate risk and vulnerability assessments, identify disaster risk based on existing information;

iv)   in consultation with GMS stakeholders, including the private sector, assess CCA and DRM actions by (i) identifying the risks the option addresses and by how much the option will likely reduce the risks, (ii) considering the time frame to implement the option and when it shall become effective, reflecting identified risks and the range of urgency to act, (iii) supporting the identification of direct and indirect effects of the option in economic, environmental and social terms (including effects on climate change mitigation) with an emphasis on potential benefits; (iv) supporting the assessment of costs and benefits; (v) identifying the barriers to implementation of adaptation actions including budget required;

v)   in consultation with GMS stakeholders, support the prioritization of adaptation options; develop climate investment plans in close consultation with GMS government officials; and oversee the development of project pre-concepts, aligned with the countries' national adaptation plans;

vi)   develop a road map and project pipelines for accessing climate finance in GMS countries, and coordinate the development of funding proposals;

vii)   help identify private sector opportunities and build a pipeline of investments;

viii)   oversee the drafting of annual and/or quarterly work plans and budgets and their revisions, and quarterly and annual progress reports; and

ix)   coordinate the development and dissemination of knowledge products, and feed information into GMS-wide policy platform for CCA and DRM WGE.

11.   **Climate Change Economist (international, intermittent, 3 person-months).** The consultant ideally will have at least a master's degree in a relevant branch of economics (environmental, international, development, public or regulatory economics), and at least 10 years of relevant work experience in conducting economic analysis, and in policy-oriented economic research on environment and development issues and preferably on climate change. Experience of working in Southeast Asia and ADB is highly desirable. Excellent research skills accompanied by excellent written and oral English. The consultant will apply economic analysis to climate change issues to support decision-making and action at national and sub-regional levels. The consultant will be responsible for the following tasks:

i)   in close collaboration with other team members, conduct economic analysis of adaptation options, including estimating the economic costs and benefits, sensitivity and risk analyses, and distribution analysis. The analysis should consider, but not be limited to: (a) different socio-economic projections, (b) increasing the resilience of livelihoods and infrastructure; (c) early warning systems, and (d) governance arrangements;

ii)   assess costs and benefits to predict whether the benefits (e.g. avoided damage) of an option outweigh its costs, and by how much in relation to other alternatives (i.e. one can rank alternate options in terms of the cost-benefit ratio). All costs and benefits should be quantified where this is possible and meaningful, otherwise a qualitative assessment shall be delivered;

iii)   based on the outcome of the analysis, make recommendations pertaining to the adoption of adaptation measures in the context of the project;

iv)   help identify private sector opportunities and build a pipeline of investments;

v)   prepare costing of potential adaptation strategies to inform national budgeting processes; and

vi)   review and edit reports as submitted by other consultants and knowledge products produced under the TA sub-output.

12. **Ecosystem-based CCA and DRM specialist (international, intermittent, 3 person-months).** The consultant ideally will have at least a master's degree in natural resource management, water resources, or related field. He/she shall have minimum of 10 years of experience in the design of nature-based approaches for CCA and DRM, and at least 5 years of managerial experience in projects of a similar nature and magnitude (preferably with financing by international financing institutions). The consultant will be responsible for the following tasks:

    i)   be responsible for overall coordination, supervision, and management of activities related to the implementation of studies on innovative ecosystem-based adaptation and disaster risk reduction solutions and technologies;

    ii)   assess options for use of nature-based approaches to climate change adaptation and disaster risk management, including options such as ecosystem protection and restoration, and bioengineering;

    iii)   assess the effectiveness of gender-responsive studies for scaling up, proposing pathways for using good practices in CCA and DRM to develop investments;

    iv)   provide technical backstopping (with support of other specialists) to local, regional and international organizations, including CSOs, government agencies, universities, research organizations, and community-based organizations in mainstreaming ecosystem-based adaptation and DRM into their operations; and

    v)   synthesize key findings and lessons learned into knowledge products and policy briefs, through ensuring the accuracy and quality of reports prepared by the team.

13. **Community-based CCA and DRM specialist (international, intermittent, 3 person-months).** The consultant ideally will have at least a master's degree in natural resource management, water resources, or related field. He/she shall have minimum of 10 years of experience in the design of nature-based approaches for CCA and DRM, and at least 5 years of managerial experience in projects of a similar nature and magnitude (preferably with financing by international financing institutions). The consultant will be responsible for the following tasks:

    i)   be responsible for overall coordination, supervision, and management of activities related to the implementation of studies on innovative community-based adaptation and disaster risk reduction solutions and technologies;

    ii)   assess options for use of nature-based approaches to community-based adaptation and disaster risk management, including options such as ecosystem protection and restoration, and bioengineering;

    iii)   assess the effectiveness of studies for scaling up, proposing pathways for using good practices in CCA and DRM to develop investments;

    iv)   provide technical backstopping (with support of other specialists) to CSOs/NGOs in mainstreaming CCA and DRR into their operations; and

    v)   synthesize key findings and lessons learned into knowledge products and policy briefs, through ensuring the accuracy and quality of reports prepared by the team.

14. **National Adaptation Planning (NAP) Specialist (international, intermittent, 2 person-months).** The consultant ideally will have 8 years of experience in CCA and DRM with a master's degree or higher in environmental management, climate change, or a related area. Experience in successful partnership building and resource mobilization is critical. The consultant will:

    i)   work closely with the international and national technical experts to review and select priority CCA and DRM projects in various sectors;

    ii)   develop work plans to review project documents, conduct site investigations, and organize meetings with relevant government staff and other stakeholders;

    iii)   prepare project concepts for financing in line with requirements of the particular funding source;

    iv)   facilitate the application of these project concepts to particular funding sources; and

    v)   collect project submissions and recommend priorities based on an agreed set of criteria.

15. **Knowledge Management Specialist (CCA and DRM) (international, intermittent, 2 person-months).** The consultant ideally will have at least a master's degree in environmental education, climate change, natural resources, economics, social sciences, or a related discipline, and at least 10 years of experience in knowledge management, and development and implementation of communications strategies related to CCA and DRM issues. The consultant will:

    i)   develop and implement a knowledge management system, stakeholder consultation and communications plan for the TA sub-output;

    ii)   collect sex-disaggregated data, wherever relevant;

    iii)   lead the development of a series of knowledge products (e.g. brochures, flyers, audio-visual products, technical reports, blogs etc.) on CCA and DRM;

    iv)   lead the development of a series of outreach materials (e.g., technical reports, short information brochures, audio-visual products, etc.), and events related to the program (e.g., conferences, workshops, meetings, etc.), also through ADB's knowledge dissemination platforms;

    v)   lead knowledge management activities related to various events (e.g. conferences, workshops, meetings etc.) to effectively communicate objectives and ensure representation of target audiences and to disseminate results and impacts through proceedings, minutes, etc.;

    vi)   maintain close contact with key partners through regular updates of events and activities; and

    vii)   provide updates on major climate change and disaster risk management-related events.

16. **Capacity Building Specialist (CCA and DRM) (international, intermittent, 2 person-months).** The consultant ideally will have at least a Master's degree in environmental education, climate change, natural resources, economics, social sciences, or a related discipline, and at least 10 years of extensive experience in capacity building, facilitating stakeholder consultations, and development and implementation of communications strategies related to CCA and DRM issues. The consultant will:

    i)   identify capacity needs and gaps of policy makers and relevant stakeholders for CCA and DRM, and key priority activities/actions for strengthening capacity of relevant ministries and stakeholders;

    ii)   prepare a comprehensive capacity building plan, training materials, and coordinate, organize, and facilitate training workshops on mainstreaming climate risk into development planning for GMS stakeholders; and

    iii)   lead the organization and facilitation of stakeholder consultation workshops to gather information and participate in the evaluation and selection of technically and feasible options for scaling up nature-based approaches.

17.   **Landscape Management and REDD+ Specialist (international, intermittent, 9 person-months).** The consultant ideally will have (i) an advanced university degree in disciplines related to environmental/ natural resources management; (ii) at least 10 years of relevant work experience in natural resource management and ecosystem services; (iii) extensive working experience in the GMS region and a thorough understanding of stakeholders and the planning context in the GMS are required; (iv) strong project management skills; and (vi) strong communication and workshop facilitation skills. The consultant will lead the implementation of demonstration activities and the development of investments. The consultant will be responsible for (i) designing demonstration projects including selection criteria (ii), implementing, monitoring, and evaluating the demonstration projects, iii) managing all consultants and coordinating the Team's work, and iv) ensuring quality assurance of all reports and documentation. The consultant will:

i)   identify policy, planning and investment entry points and a clear demarcation of the boundary conditions for prompting climate-smart landscape;
ii)   design an appropriate conceptual framework, demonstrations and implementation plan;
iii)   lead multi-stakeholder consultations required for the assignment, incorporating processes such as participatory data collection, scenario-based land-use planning workshops, etc.;
iv)   identify opportunities to formulate conditional payment scheme arrangements;
v)   synthesize outcomes of the assessment, translating key findings and lesson learned into knowledge products;
vi)   identify critical stakeholders for the project, scope each stakeholders' role and responsibilities and establish the method of communication during the project implementation;
vii)   prepare project documents according to ADB format requirements in conjunction with other team members, and revise if necessary; and
viii) lead in-country training activities and organization of regional forums.

18.   **REDD+/ PES Economist (international, intermittent, 4 person-months)**. The technical specialist ideally will have (i) an advanced university degree in disciplines related to environmental/ natural resources economics; (ii) at least 5 years of relevant experience; (iii) working experience in the GMS region is preferred; and (iv) strong communication and workshop facilitation skills. The consultant will perform the following tasks:

i)   identify priority 'ecological assets' and corresponding 'ecosystem services' for the valuation;
ii)   conduct the economic value of natural capital assets assessment and valuation of ecosystem services;
iii)   identify revenue-generating opportunities from land use and associated environmental services, including through involvement of the private sector;
iv)   help identify private sector opportunities and build a pipeline of investments;
v)   recommend pricing structure for various ecosystem services, and recommend revenue collection mechanisms;
vi)   conduct economic analysis of proposed livelihoods and resilience activities;
vii)   conduct project costing including budgeting for the proposed investment;
viii) assist in conducting in-country training activities and organization of regional forums; and
ix)   assist in synthesizing outcomes of the exercises and developing knowledge products.

19. **Land Use Planning and Spatial Analysis Specialist (international, intermittent, 4 person-months).** The technical specialist ideally will have (i) an advanced university degree in spatial planning or related scientific discipline; (ii) at least 5 years of relevant experience; (iii) working experience in the GMS region is preferred; and (iv) strong communication and workshop facilitation skills. The consultant will perform the following tasks:

    i)   develop or tailor an existing land-use simulation model/tool to assess the impact of combinations of factors on the dynamics of land use in the select landscapes;

    ii)   supervise collection of ground-level data collection, including sex-disaggregated data, as inputs for the simulation models;

    iii)   apply the model results to support the scenario-based assessment and land-use planning exercises with participation from stakeholders from key sectors;

    iv)   assist in conducting in-country training activities and organization of regional forums; and

    v)   assist in synthesizing outcomes of the exercises and developing knowledge products.

20. **Knowledge Management, and Monitoring and Reporting Specialist (Climate-Smart Landscapes) (international, intermittent, 4 person-months).** The specialist ideally will have (i) an advanced university degree in environmental/ natural resources management or related discipline; (ii) at least 5 years of relevant experience; (iii) working experience in the GMS region is preferred; and (iv) strong communication and outreach skills. The consultant will perform the following tasks:

    i)   develop and maintain program knowledge management and monitoring and evaluation system, including a web-based platform;

    ii)   document and report program's progress to relevant stakeholders and raise awareness of achievements in applicable national and international fora;

    iii)   lead the development of a series of outreach materials (e.g., technical reports, short information brochures, audio-visual products, etc.), and events related to the program (e.g., conferences, workshops, meetings, etc.), also through ADB's knowledge dissemination platforms;

    iv)   manage media relations, arrange press coverage at key events, and prepare press releases; and

    v)   maintain close contact with key partners (including within ADB).

21. **Gender Specialist (international, intermittent, 4 person-months).** The consultant ideally will have a master's degree or equivalent in gender studies, sociology, or related areas with at least 7 years relevant professional experience in gender-specific policies of climate change, environment, and natural resources management, preferably in GMS context. The specialist will:

    i)   provide advice on gender inclusion in climate actions, and natural resources management policies and investments;

    ii)   develop a plan for implementation of gender mainstreaming activities;

    iii)   review various innovative mechanisms for gender inclusion and identify opportunities for creating jobs for women, especially in climate actions and natural resources management in the GMS;

    iv)   identify job opportunities for women in climate actions and natural resources management and develop an approach to recruit, train and optimize livelihoods;

> v) assist in designing climate finance service focused on women and women entrepreneurs; and
>
> vi) prepare knowledge products related to effective gender mainstreaming of gender concerns in design and implementation of climate actions and natural resources management interventions.

22. **Climate Change Mitigation Specialist (international, intermittent, 5 person-months).** The consultant ideally will have a master's degree in transport, or engineering specializing in transport planning, green freight transportation and logistics. He/she should have at least 10 years of experience in the transport sector, in assessing mitigation potential of transport projects, and in transport policy work. Work experience in developing countries, particularly in the GMS, is highly desirable. Excellent written and oral communication skills are essential. The consultant will perform the following tasks:

> (i) assess policy barriers and identify measures for effective implementation of sectoral climate investment plans aligned with nationally determined contributions in at least 3 GMS countries;
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> (ii) design an appropriate results framework to monitor progress in commitments of nationally determined contributions;
>
> (iii) conduct demonstrations on green freight options, including preparation of national green freight road maps, and assess the potential for scaling up;
>
> (iv) help identify private sector opportunities and build a pipeline of investments;
>
> (v) conduct demonstrations on low carbon agriculture options in partnership with the private sector;
>
> (vi) lead biannual GMS forums on MRV of low carbon transitions; and
>
> (vii) lead trainings on MRV options to the national and local governments, private sector and other stakeholder groups.

23. **Environmental Quality Specialist (international, intermittent, 5 person-months).** The consultant ideally will have a master's degree in environmental science and management, civil or environmental engineering, environmental health, or other relevant fields. He/she should have at least 10 years of experience in the areas of environmental quality data management, monitoring and modeling. Work experience in developing countries, particularly in the GMS, is highly desirable. Excellent written and oral communication skills are essential. The consultant will:

> (i) provide advisory and strategic planning support on strategic environment assessment, environmental quality standards, and economic instruments;
>
> (ii) prepare subregion-wide guidelines on air, water, and soil pollution control and remediation;
>
> (iii) conduct two detailed studies on rural land and water-based waste management, including plastics;
>
> (iv) prepare sub-regional investment projects on pollution control;
>
> (v) oversee training workshops on environmental quality data management, monitoring and modeling for WGE and their key government staff; and
>
> (vi) organize training workshops on circular economy and sustainable waste management.

24. **Digital Technology Specialist (for monitoring of climate actions and pollution monitoring) (international, intermittent, 5 person-months).** The consultant ideally will have a Master's degree in environmental sciences, engineering or other relevant disciplines relevant for pollution monitoring and particularly environmental management planning. He/she should have

at least 7 years of experience in mitigation and adaptation, pollution monitoring, and sustainable forest management using advanced technologies. Work experience in developing countries, particularly in the Asia-Pacific region, is highly desirable. Excellent written and oral communication skills are essential. The consultant will perform the following tasks:

     i)   conduct green technology needs assessments;
     ii)   identify best practices for technology policy leapfrogging, and identify private sector opportunities;
     iii)   implement priority demonstrations on: (a) block chain-enabled climate action monitoring, (b) AI-enabled pollution monitoring and management, (c) drone-enabled sustainable forest management, and (d) mobile phone-based early warning systems;
     iv)   conduct training workshops public institutions, communities, and private sector to facilitate uptake of digital technologies; and
     iv)   conduct training of trainers in selected universities.

25.   **Disaster Risk Financing Specialist (for designing and implementing disaster risk financing instruments) (international, intermittent, 5 person-months).** The consultant ideally will have a Master's degree in economics, finance, environmental science, or related field. He/she should have at least 10 years of relevant work experience in financial risk management or disaster risk management (DRM), disaster risk reduction, disaster risk financing, and a good understanding of climate change adaptation (CCA) which should include five years' experience in managing/leading projects related to disaster risk financing, and/or financial risk management. Experience in implementing DRM and CCA-related projects, and in the design of methodology and instruments related to Disaster Risk Finance, Insurance and Risk Transfer Mechanisms are essential. He/she should have advanced analytical skills, and strong written and communication skills in English. Work experience in developing countries, particularly in the Asia- Pacific region, is highly desirable. The consultant will perform the following tasks:

     i)   analyze policies and measures to access climate finance and deploy new financing instruments within and outside each GMS country, by paying particular attention to support for public-private partnerships, incentive structures, and harmonization standards;
     ii)   recommend measures to overcome barriers for accessing climate finance;
     iii)   demonstrate innovative climate financing options (e.g. vehicles to catalyze private capital, blended finance) for sustainable infrastructure and uptake of green technologies in at least two GMS countries;
     iv)   demonstrate disaster risk financing instruments (e.g., community credit lines, weather index-based insurance) in at least two countries, in close collaboration with the private sector; and
     v)   lead subregional trainings (learning-by-doing) to mobilize climate and environmental finance.

C.   National Consultants

26.   **Climate Change Adaptation and Disaster Risk Management Expert/Deputy Team Leader (national, intermittent, 24 person-months).** The consultant ideally will have at least a master's degree in economics, environment, natural resource management, or a related field and 6 years of experience in climate change adaptation and disaster risk management. Experience with ADB is highly desirable. The consultant will be responsible for the following tasks:

i) support the team leader in coordinating implementation of the TA sub-output;
ii) support assessment of target countries' sector climate change commitments, policies, strategies, regulations, and climate investment opportunities;
iii) support the mapping of existing human and financial resources on CCA and DRM by sector, and by investment needs and options;
iv) support the preparation of climate risk and vulnerability assessments, identify disaster risk based on existing information;
v) support the assessment and prioritization of CCA and DRM options, and development of climate investment plans in close consultation with GMS stakeholders;
vi) help identify private sector opportunities and build a pipeline of investments;
vii) coordinate in-country training, workshops, forums, and other knowledge events; and
viii) coordinate the preparation of reports, publications, and knowledge products.

27. **Climate Change Economist (national, intermittent, 6 person-months).** The consultant ideally will have at least a master's degree in a relevant branch of economics (environmental, international, development, public or regulatory), and at least 5 years of work experience in conducting economic analysis, and in policy-oriented economic research on environment and development issues and preferably on climate change. Excellent research skills accompanied by excellent written and oral English. The consultant will be responsible for the following tasks:

i) assist in conducting economic analysis of adaptation options, including estimating the economic costs and benefits, sensitivity and risk analyses, and distribution analysis. The analysis should take into account, but not be limited to: (a) different socio-economic projections, (b) increasing the resilience of livelihoods and infrastructure; (c) early warning systems, and (d) governance arrangements;
ii) assist in assessing costs and benefits to predict whether the benefits (e.g. avoided damage) of an option outweigh its costs, and by how much in relation to other alternatives (i.e. one can rank alternate options in terms of the cost-benefit ratio). All costs and benefits should be quantified where this is possible and meaningful, otherwise a qualitative assessment shall be delivered;
iii) help identify private sector opportunities and build a pipeline of investments;
iv) assist in preparing the costs of potential adaptation strategies to inform national budgeting processes; and
v) review and edit reports as submitted by other consultants and knowledge products produced under the TA sub-output.

28. **Ecosystem-based CCA and DRM specialist (national, intermittent, 6 person-months).** The consultant ideally will have at least a master's degree in natural resource management, water resources, or related field. He/she shall have minimum of 5 years of experience in the design and implementation of nature-based approaches for climate change adaptation and DRM, and at least 5 years of managerial experience in projects of a similar nature and magnitude (preferably with financing by international financing institutions). The consultant will be responsible for the following tasks:

i) assist in the coordination and management of activities related to the implementation of studies on innovative ecosystem-based adaptation and disaster risk reduction solutions and technologies;
ii) coordinate the implementation of capacity building approaches relevant to the assignment;

iii) review and provide technical inputs in the design of proposals, particularly in enabling the scaling up of demonstrations;

iv) provide technical backstopping (with support of other specialists) to local, regional and international organizations, including CSOs, government agencies, universities/research organizations, and community-based organizations in mainstreaming ecosystem-based CCA and DRR into their operations; and

v) synthesize key findings and lessons learned into knowledge products and policy briefs.

29. **Community-based CCA and DRM specialist (national, intermittent, 6 person-months).** The consultant ideally will have at least a master's degree in natural resource management, water resources, or related field. He/she shall have minimum of 5 years of experience in the design and implementation of nature-based approaches for community-based adaptation and DRM, and at least 5 years of managerial experience in projects of a similar nature and magnitude (preferably with financing by international financing institutions). The consultant will be responsible for the following tasks:

i) assist in the coordination and management of activities of activities related to the implementation of studies on innovative community-based adaptation and disaster risk reduction solutions and technologies;

ii) coordinate the implementation of capacity building approaches relevant to the assignment;

iii) review and provide technical inputs in the design of proposals, particularly in enabling the scaling up of demonstrations;

iv) provide technical backstopping (with support of other specialists) to CSOs/NGOs in mainstreaming CCA and DRR into their operations; and

v) synthesize key findings and lessons learned into knowledge products and policy briefs, through ensuring the accuracy and quality of reports prepared by the team.

30. **National Adaptation Planning (NAP) Specialist (national, intermittent, 6 person-months).** The consultant ideally will have at least 5 years of experience in CCA and DRM with a master's degree or higher in environmental management, climate change, or a related area. Experience in successful partnership building and resource mobilization is critical. The consultant will:

(i) work closely with the international and national technical experts to review and select priority CCA and DRM projects in various sectors;

(ii) assist in developing work plans to review project documents, conduct site investigations, and organize meetings with relevant government staff and other stakeholders;

(iii) assist in preparing project concepts for financing in line with requirements of the specific funding source;

(iv) facilitate the application of these project concepts to funding sources; and

(v) collect project submissions and recommend priorities based on an agreed set of criteria

31. **Knowledge Management Specialist (CCA and DRM) (national, intermittent, 6 person-months).** The consultant ideally will have at least a master's degree in environmental education, climate change, natural resources, economics, social sciences, or a related discipline, and at least 5 years of experience in knowledge management, and development and

implementation of communications strategies related to CCA and DRM issues. The consultant will:

i)   support the development and implementation of a knowledge management system, stakeholder consultation and communications plan for the TA sub-output;

ii)   collect sex-disaggregated data, wherever relevant;

iii)   support the development of a series of knowledge products (e.g. brochures, flyers, audio-visual products, technical reports, blogs etc.) on CCA and DRM;

iv)   support the development of a series of outreach materials (e.g., technical reports, short information brochures, audio-visual products, etc.), and events related to the program (e.g., conferences, workshops, meetings, etc.), also through ADB's knowledge dissemination platforms;

v)   support knowledge management activities related to various events (e.g. conferences, workshops, meetings etc.) to effectively communicate objectives and ensure representation of target audiences and to disseminate results and impacts through proceedings, minutes, etc.;

vi)   create and maintain a database for climate risk and vulnerability assessments and climate information; and

vii)   provide updates on major climate change and disaster risk management-related events.

32.   **Capacity Building Specialist (CCA and DRM) (national, intermittent, 6 person-months).** The consultants ideally will have at least a Master's degree in environmental education, climate change, natural resources, economics, social sciences, or a related discipline, and at least 5 years of extensive experience in capacity building, facilitating stakeholder consultations, and development and implementation of communications strategies related to CCA and DRM issues. The consultant will:

i)   identify capacity needs and gaps of policy makers and relevant stakeholders for CCA and DRM, and key priority activities/actions for strengthening capacity of relevant ministries and stakeholders;

ii)   prepare a comprehensive capacity building plan, training materials, and coordinate, organize, and facilitate training workshops on mainstreaming climate risk into development planning for GMS stakeholders; and

iii)   lead the organization and facilitation of stakeholder consultation workshops to gather information and participate in the evaluation and selection of technically and feasible options for scaling up nature-based approaches.

33.   **Landscape management and REDD+ Specialist (national, 24 person-months).** The specialist ideally will have (i) an advanced university degree in disciplines related to environmental/ natural resources management; (ii) at least 5 years of relevant experience; (iii) working experience in the GMS region is preferred; and (iv) strong communication and networking skills. The consultant will perform the following tasks:

i)   review existing national REDD+/ PES policy framework and assist in identifying national policy, planning, and investment entry points;

ii)   facilitate national multi-stakeholder consultations required for the assignment, incorporating processes such as participatory data collection, scenario-based land-use planning workshops, etc.;

iii)   help to identify opportunities to formulate conditional payment (REDD+/PES) schemes;

iv)   support identification of national priority activities and prepare annual work plan;

v)   identify program success stories and assist in translating key findings and lesson learned into knowledge products.

34.   **REDD+/PES Economist (national, 12 person-months).** The economist ideally will have (i) an advanced university degree in disciplines related to environmental/ natural resources economics; (ii) at least 5 years of relevant experience; (iii) working experience in the GMS region is preferred; and (iv) strong communication and workshop facilitation skills. The consultant will perform the following tasks:

i)   assist in identifying and delineating key 'ecological assets' and corresponding 'ecosystem a pipeline of investments;

ii)   assist in conducting in-country training activities; and

iii)   assist in developing knowledge products.

35.   **Land use planning and Spatial Analysis Specialist (national, 12 person-months)**. The specialist ideally will have (i) an advanced university degree in spatial planning or related scientific discipline; (ii) at least 5 years of relevant experience; (iii) working experience in the GMS region is preferred; and (iv) strong communication and workshop facilitation skills. The consultant will perform the following tasks:

i)   prepare dataset to run existing land-use simulation model/tool to assess the impact of combinations of factors on the dynamics of land use in the select landscapes;

ii)   assist in ground-level data collection, including sex-disaggregated data, wherever relevant, as inputs for the simulation model;

iii)   assist in conducting in-country training activities and organization of regional forums; and

iv)   assist in developing knowledge products.

36.   **Knowledge Management, and Monitoring and Reporting Specialist (national, intermittent, 12 person-months).** The specialist ideally will have (i) an advanced university degree in disciplines related to communication, environmental science, natural resources management or international relations with a focus on environmental/ natural resources management; (ii) at least 5 years of relevant experience in knowledge management; (iii) working experience in the GMS region; and (iv) strong communication and workshop facilitation skills. The consultant will:

i)   develop a knowledge management and monitoring and reporting plan;

ii)   conduct comprehensive knowledge management surveys on landscapes;

iii)   identify country-specific needs and develop a capacity building plan of action;

iv)   support the development of a series of outreach materials (e.g., technical reports, short information brochures, audio-visual products, etc.), and events related to the program (e.g., conferences, workshops, meetings, etc.), also through ADB's knowledge dissemination platforms;

v)   organize regional and national training and capacity building activities; and

vi)   assist in the preparation of program progress report and other technical reports including monitoring and evaluation reports.

37.   **Gender Specialist (national, intermittent, 16 person-months).** The consultant ideally will have a bachelor's degree or equivalent in gender studies, sociology, or related areas with at

least 3 years relevant experience in gender-specific policies of climate change, environment, and natural resources management, preferably in GMS context. The specialist will:

i) provide advice on gender and social inclusion in climate change, environment, and natural resources management policies and investments;
ii) review various innovative mechanisms for gender inclusion and identify opportunities for creating jobs for women, especially in small and medium nature-based businesses in the GMS;
iii) assist in the collection of qualitative and quantitative data;
iv) design climate finance service focused on women and women entrepreneurs;
v) provide technical advice and analysis on gender equality issues in climate change and natural resources management;
vi) prepare knowledge products related to effective gender mainstreaming of gender concerns in design and implementation of climate actions and natural resources management interventions; and
vii) develop and disseminate good practices on gender mainstreaming.

38. **Climate Change Mitigation Specialist (national, intermittent, 16 person-months).** The consultant ideally will have a postgraduate degree in transport, or engineering specializing in transport planning, green freight transportation and logistics. He/she should have at least 5 years of experience in the transport sector, in developing climate change mitigation transport projects, and in transport policy work with a focus on sustainable mobility is required. Work experience in developing countries, particularly in the GMS, is highly desirable. Excellent written and oral communication skills are essential. The consultant will perform the following tasks:

i) assist in assessing policy barriers and identify measures for effective implementation of sectoral climate investment plans aligned with nationally determined contributions in at least 3 GMS countries;
ii) provide support in identifying relevant indicators to monitor progress in commitments of nationally determined contributions;
iii) assist in implementing demonstrations on green freight options, including preparation of national green freight road maps, and assess the potential for scaling up;
iv) assist in implementing demonstrations on low carbon agriculture options in partnership with the private sector;
v) organize biannual GMS forums on MRV of low carbon transitions; and
vi) organize trainings on MRV options to the national and local governments, private sector and other stakeholder groups.

39. **Environmental Quality Specialist (strategic environmental planning, pollution control, waste management) (national, intermittent, 16 person-months).** The consultant ideally will have a postgraduate degree in environmental science and management, civil/environmental engineering, environmental health, or other relevant fields. He/she should have at least 5 years of experience in the areas of design and implementation of environmental and social management systems, safeguard systems, policy development, environmental and social due diligence, monitoring of programs, projects, and activities. Work experience in developing countries, particularly in the GMS, is highly desirable. Excellent written and oral communication skills are essential. The consultant will perform the following tasks:

i) provide support in conducting strategic environment assessment, environmental quality standards, and economic instruments;

ii)   assist in preparing subregion-wide guidelines on air, water, and soil pollution control and remediation;

iii)   assist in conducting two detailed studies on rural land and water-based waste management, including plastics;

iv)   assist in preparing sub-regional investment projects on pollution control;

v)   organize training workshops for WGE and their key government staff on environmental quality data management, monitoring and modeling; and

vi)   organize training workshops on circular economy and sustainable waste management.

40.   **Digital Technology Specialist (for monitoring of climate actions and pollution monitoring) (national, intermittent, 16 person-months).** The consultant ideally will have a master's degree in environmental sciences, engineering or other relevant disciplines relevant for pollution monitoring and particularly environmental management planning. He/she should have at least 7 years of experience in mitigation and adaptation, pollution monitoring, and sustainable forest management using advanced technologies. Work experience in developing countries, particularly in the Asia-Pacific region, is highly desirable. Excellent written and oral communication skills are essential. The consultant will perform the following tasks:

i)   conduct green technology needs assessments;

ii)   identify best practices for technology policy leapfrogging;

iii)   implement priority demonstrations on: (a) block chain-enabled climate action monitoring, (b) AI-enabled pollution monitoring and management, (c) drone-enabled sustainable forest management, and (d) mobile phone-based early warning systems;

iv)   help identify private sector opportunities and build a pipeline of investments;

v)   conduct training workshops public institutions, communities, and private sector to facilitate uptake of digital technologies; and

v)   conduct training of trainers in selected universities.

41.   **Disaster Risk Financing Specialist (for designing and implementing disaster risk financing instruments) (national, intermittent, 16 person-months).** The consultant ideally will have a master's degree in economics, finance, environmental science, or related field. He/she should have at least 10 years of relevant work experience in financial risk management or disaster risk management (DRM), disaster risk reduction, disaster risk financing, and a good understanding of climate change adaptation (CCA) which should include five years' experience in managing/leading projects related to disaster risk financing, and/or financial risk management. Experience in implementing DRM and CCA-related projects, and in the design of methodology and instruments related to Disaster Risk Finance, Insurance and Risk Transfer Mechanisms are essential. He/she should have advanced analytical skills, and strong written and communication skills in English. Work experience in developing countries, particularly in the Asia- Pacific region, is highly desirable. The consultant will perform the following tasks:

i)   Assist in analyzing policies and measures to access climate finance and deploy new financing instruments within and outside each GMS country, by paying attention to support for public-private partnerships, incentive structures, and harmonization standards;

ii)   recommend measures to overcome barriers for accessing climate finance;

iii)   assist in implementing innovative climate financing options (e.g. vehicles to catalyze private capital, blended finance) for sustainable infrastructure and uptake of green technologies in at least two GMS countries;

iv) assist in implementing disaster risk financing instruments (e.g., community credit lines, weather index-based insurance) in at least two countries; and

v) organize sub-regional trainings (learning-by-doing) to mobilize climate and environmental finance.

C. Individual Consultants

42. **Thematic coordinators (international, intermittent, 20 person-months).** The consultant ideally will have at least a master's degree in economics, environmental science, or a related field, and 10 years of experience in environment and climate change related areas. Good oral and written communication skills in English. The consultant will:

i) provide overall management and coordination of CCA and DRM-related issues with national focal points in the government, other government agencies involved in CCA and DRM activities, development partners, civil society, and private sector, and serve as liaison between implementing partners, key stakeholders, and ADB;

ii) undertake or provide inputs into CCA and DRM-related studies and other analytical work;

iii) develop reporting and monitoring formats for TA implementation (on both technical and financial aspects);

iv) monitor the TA project implementation schedule, quality of implementation, disbursement and liquidation of funds;

v) consolidate and provide comments on various project-related documents such as inception reports, issues papers, work programs, and other reports generated by the consultants; and

vi) assist in organizing all TA-related events, workshops, and training sessions.

43. **Administrative and accounting assistant (national, intermittent, 30 person-months).** The consultant ideally will have a university degree in administration, accounting or related fields, and at least 5 years of experience related to accounting and financial management of projects. Good communication and facilitation skills are required. The consultant will:

i) undertake various accounting duties, including carrying out administrative functions to all aspects of the work of the TA, as required;

ii) maintain sound accounting internal controls and update accounting records, and assist in the preparation of financial statements;

iii) establish and maintain project documentation and filing system;

iv) assist in the procurement of equipment and supplies; and preparing, updating and maintaining an inventory of all project assets; and

v) assist in preparing logistic and administrative work for organizing trainings, workshops, conferences, and events.