



Technical Assistance Report

Project Number: 49145-001
Capacity Development Technical Assistance (CDTA)
December 2015

Socialist Republic of Viet Nam: Mainstreaming Climate Change Mitigation into National Infrastructure

(Financed by the Clean Technology Fund)

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Asian Development Bank

CURRENCY EQUIVALENTS

(as of 15 November 2015)

Currency unit	–	dong (D)
D1.00	=	\$0.000045
\$1.00	=	D22,418

ABBREVIATIONS

ADB	–	Asian Development Bank
CTF	–	Clean Technology Fund
GHG	–	greenhouse gas
ICD	–	International Cooperation Department
MONRE	–	Ministry of Natural Resources and Environment
MRV	–	measuring, reporting, and verification system
TA	–	technical assistance

NOTE

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

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CONTENTS

	Page
CAPACITY DEVELOPMENT TECHNICAL ASSISTANCE AT A GLANCE	
I. INTRODUCTION	1
II. ISSUES	1
III. THE CAPACITY DEVELOPMENT TECHNICAL ASSISTANCE	3
A. Impact and Outcome	3
B. Methodology and Key Activities	3
C. Cost and Financing	4
D. Implementation Arrangements	4
IV. THE PRESIDENT'S DECISION	5
APPENDIXES	
1. Design and Monitoring Framework	6
2. Cost Estimates and Financing Plan	8
3. Outline Terms of Reference for Consultants	9

CAPACITY DEVELOPMENT TECHNICAL ASSISTANCE AT A GLANCE

1. Basic Data		Project Number: 49145-001	
Project Name	Mainstreaming Climate Change Mitigation into National infrastructure	Department /Division	SERD/SETC
Country	Viet Nam, Socialist Republic of	Executing Agency	Ministry of Natural Resources and Environment
2. Sector	Subsector(s)	Financing (\$ million)	
✓ Transport	Transport policies and institutional development		0.60
Energy	Energy efficiency and conservation		0.40
		Total	1.00
3. Strategic Agenda	Subcomponents	Climate Change Information	
Inclusive economic growth (IEG)	Pillar 1: Economic opportunities, including jobs, created and expanded	Climate Change impact on the Project	Low
Environmentally sustainable growth (ESG)	Eco-efficiency Environmental policy and legislation Urban environmental improvement		
4. Drivers of Change	Components	Gender Equity and Mainstreaming	
Governance and capacity development (GCD)	Institutional development Organizational development	No gender elements (NGE)	✓
Knowledge solutions (KNS)	Application and use of new knowledge solutions in key operational areas Knowledge sharing activities		
Partnerships (PAR)	Implementation International finance institutions (IFI)		
5. Poverty Targeting		Location Impact	
Project directly targets poverty	No	Not Applicable	
6. TA Category:	B		
7. Safeguard Categorization	Not Applicable		
8. Financing			
Modality and Sources		Amount (\$ million)	
ADB		0.00	
None			0.00
Cofinancing		1.00	
Clean Technology Fund			1.00
Counterpart		0.03	
Government			0.03
Total		1.03	
9. Effective Development Cooperation			
Use of country procurement systems	No		
Use of country public financial management systems	No		

I. INTRODUCTION

1. The Government of Viet Nam has long been aware of the need to address climate change impacts and develop infrastructure by effectively integrating climate change mitigation actions. The Ministry of Natural Resources and Environment (MONRE) is the government's focal climate change agency. Since 2009, the MONRE has piloted programs for climate change mitigation, participated in global and regional climate change conferences, and accessed various forms of climate change funding, both directly and through international financial institutions.

2. Since 2014, the Asian Development Bank (ADB) has been consulted on measures to strengthen the capacity of the MONRE and other relevant government agencies to prepare and implement more systematic infrastructure developments that integrate climate change mitigation actions. This has led to a proposal for a capacity development technical assistance (TA) to strengthen and coordinate the capacity of the MONRE and other relevant government agencies in measuring, reporting, and verifying climate change mitigation actions, including the development of guidelines for developing, implementing, and managing such mitigation actions. The proposed TA is expected to help the government achieve a low-carbon economy as the primary aim of sustainable economic development and greenhouse gas (GHG) emission reductions. The Clean Technology Fund (CTF) Trust Fund Committee considered grant financing for the proposed TA in its investment plan for Viet Nam and approved it on 6 August 2015. The government has been closely involved in developing the TA and concurs with the TA impact, outcome, outputs, implementation arrangements, cost, financing arrangements, and terms of reference. The design and monitoring framework is in Appendix 1.¹

II. ISSUES

3. Viet Nam's rapid economic growth has led to increasing energy consumption and GHG emissions. Its fast urbanization rate has contributed to the growth in the amount of passenger traffic:² it rose 5.8% per year from 1999 to 2008, and is expected to more than triple from 2008 to 2020. The increasing use of motorized transport will increase the country's dependence on fossil fuels. The increase in total energy use and a heavy dependence on fossil fuels indicate that national GHG emissions will triple by 2030 from 226 million tons of carbon dioxide equivalent in 2010. Thus, economic growth brings with it significant climate change risks as well as land, water, and air pollution.³

4. In 1994, Viet Nam ratified the United Nations Framework Convention on Climate Change to keep the increase in average global atmospheric temperature since pre-industrial times from exceeding 2 degrees Celsius. The government formulated policies and strategies to respond to climate change, including the National Target Program to Respond to Climate Change and the National Strategy on Climate Change, and developed nationally appropriate mitigation actions. Furthermore, the government took steps to address GHG emissions in particular, while promoting a low-carbon growth path. These steps—which include the 2009 CTF Investment Plan, the 2011 National Climate Change Strategy, the 2012 Green Growth Strategy, and the 2015 Intended Nationally Determined Contribution of Viet Nam—identify transport and energy as priority sectors for GHG emission reductions and set forth well-defined targets. To further respond to these policies, strategies, and plans through implementing environment-friendly and

¹ The TA first appeared in the business opportunities section of ADB's website on 29 October 2015.

² Viet Nam's urbanization rate is one of the fastest in the world. At present, 27% of the country's population lives in urban areas, with this figure expected to increase to 45% by 2020 and to 50% by 2030.

³ ADB. 2012. *Country Partnership Strategy: Viet Nam, 2012–2015*. Manila.

low-carbon projects, the government needs to build institutional and technical capacity in areas such as formulating mitigation actions, integrating them into development programs and infrastructure projects, and measuring, reporting, and verifying their effects.

5. ADB has been helping the government address sustainable development issues. For example, the completed TA for the National Target Program on Climate Change with a Focus on Energy and Transport helped the Ministry of Industry and Trade and the Ministry of Transport develop climate change action plans to reduce GHG emissions and negative impacts on transport and energy infrastructure. The action plans identified mitigation options and applied them to three locations—Ho Chi Minh, Da Nang, and Thanh Hoa Province—as a pilot.⁴

6. The TA for the Core Environment Program and Biodiversity Conservation Corridors Initiative, Phase II is currently developing an environment-friendly economic cooperation program across countries in the Greater Mekong Subregion, including Viet Nam. It is building climate change mitigation capacity in these countries by (i) supporting the development of climate change mitigation programs and actions; (ii) piloting institutional and financial mechanisms to deploy low-carbon technologies; and (iii) identifying gaps in carbon emission baselines and existing measuring, reporting, and verification systems (MRVs).⁵

7. The completed TA for Developing the Market Readiness Proposal for a Domestic Carbon Market promoted a domestic carbon market and provided a platform for technical discussion on the partnership for carbon market readiness by preparing the organizing framework and market readiness proposal, which details the country's plan for its proposed market-based instruments and market readiness components.⁶

8. To promote GHG emission reduction, the MONRE, with assistance from ADB, the World Bank, and the International Finance Corporation, has prepared investment projects under the CTF Investment Plan, for which CTF cofinancing amounting to \$250 million was endorsed by the CTF Trust Fund Committee in December 2009 and October 2013. The 2013 revised CTF Investment Plan includes (i) three transport projects promoting low-carbon public transport services while managing transport demand in urban areas; (ii) three energy sector projects contributing to energy efficiency, renewable energy, and the expansion of the power transmission network to meet the electricity demand with a reliable, environmentally sustainable supply; and (iii) the proposed TA to monitor and evaluate the CTF projects.⁷

9. The Climate Investment Funds require annual monitoring and reporting of approved CTF projects based on a CTF toolkit that provides guidance and reporting tools for the core indicators.⁸ This allows the measuring of progress and the effectiveness of a mitigation action (i.e., how much a planned mitigation action progresses in terms of five core indicators, e.g., tons

⁴ ADB. 2011. *Technical Assistance to the Socialist Republic of Viet Nam for Support for the National Target Program on Climate Change with a Focus on Energy and Transport*. Manila (TA 7779-VIE).

⁵ ADB. 2011. *Technical Assistance for the Core Environment Program and Biodiversity Conservation Corridors Initiative, Phase II*. Manila (TA 7987-REG).

⁶ ADB. 2013. *Technical Assistance to the Socialist Republic of Viet Nam for Developing the Market Readiness Proposal for a Domestic Carbon Market*. Manila (TA 8341-VIE).

⁷ ADB is administering three transport projects: Sustainable Urban Transport for Ho Chi Minh City Mass Rapid Transit Line 2 (L8279-VIE); Strengthening Sustainable Urban Transport for Ha Noi Metro Line 3 (L8291-VIE); and Additional Financing for the Ha Noi Metro Rail System (Line 3: Nhon–Ha Noi Station Section) (proposal in 2015). The World Bank Group is administering two energy projects: the Distribution Efficiency Project, and the Sustainable Energy Finance Program.

⁸ Climate Investment Funds. 2014. *CTF Monitoring and Reporting Toolkit V4.6*. https://www-cif.climateinvestmentfunds.org/sites/default/files/knowledge-documents/ctf_monitoring_and_reporting_toolkit_version_4.6__0.pdf

of GHG emissions reduced or avoided, number of additional passengers using low-carbon public transport, and annual energy savings), and whether and how a planned mitigation action effectively achieves an originally targeted mitigation objective. The CTF Trust Fund Committee mandates this monitoring and reporting to justify CTF investments, develop a strategy to improve the operation of CTF projects, and increase the scale of investments with positive feedback. In doing so, it is imperative for project implementing agencies to establish baselines and implement and operate MRVs from project implementation to operation. The MONRE should also compile quality data by requiring the implementing agencies to report to the MONRE in compliance with the CTF annual monitoring and reporting requirement. However, most implementing and relevant agencies have not been fully equipped with the required MRVs. In addition, some ongoing CTF projects do not include the core indicators in their monitoring frameworks. Hence, the MONRE has asked ADB to help the agencies establish and implement MRVs and enhance their climate change mitigation capacity.

III. THE CAPACITY DEVELOPMENT TECHNICAL ASSISTANCE

A. Impact and Outcome

10. The impact will be the development of a low-carbon economy to protect and improve quality of life and guarantee national security and sustainable development. The outcome will be the development of environment-friendly and low-carbon transport and energy projects. The target will be the number of climate change mitigation projects supported by international financial institutions in the transport and energy sectors increased by 25% by 2020.

B. Methodology and Key Activities

11. Expected outputs include (i) the development and strengthening of MRVs for CTF projects, (ii) the establishment of transport and energy sector mitigation guidelines, and (iii) the enhancement and coordination of agencies' capacity in climate change mitigation.

12. **Output 1: Measuring, reporting, and verification systems for Clean Technology Fund projects developed and strengthened.** The TA will develop and strengthen MRVs for approved and future CTF projects in the MONRE and relevant agencies responsible for implementing and supervising CTF projects, in compliance with the CTF mandatory reporting requirements.⁹ This will allow the environment and sector agencies to identify the progress and effectiveness of a mitigation action. Moreover, the agencies will have an opportunity to consider improvements in the implementation and operation of a mitigation action and seek a better strategy to achieve its objective. Robust and implementable MRVs will be developed by reviewing current institutional settings, past and ongoing support from the government and development partners, and current practices in Viet Nam and neighboring countries as well as similar environments. Practices to be reviewed include CTF projects as well as those funded by other sources if applicable. The TA will (i) identify gaps in data collection, analysis, and reporting in terms of technical skills and knowledge, financing, and institutional arrangements; (ii) develop a recommended MRV institutional plan identifying necessary technical skills and knowledge, financing, and institutional settings built on good practices; and (iii) help the environment and sector agencies implement and operate robust and implementable MRVs and establish

⁹ Sector agencies will include local governments (e.g., Ha Noi, Ho Chi Minh City, Dang Nang), which are the executive agencies of ongoing and future large-scale climate change mitigation projects in the transport and energy sectors.

baselines through advisory and capacity development under output 3 using the MRV institutional plan.

13. **Output 2: Transport and energy sector mitigation guidelines established.** The TA will establish mitigation guidelines for the environment and sector agencies involved in transport and energy programs and projects. The guidelines will be developed through the reviewing process under output 1, and will cover CTF projects as well as projects funded by other sources in Viet Nam, if applicable. The guidelines are meant to be followed by any agency in Viet Nam implementing and managing mitigation actions. The guidelines will (i) include a list of mitigation actions derived from reviewing CTF projects and other mitigation programs in Viet Nam and other countries if applicable; (ii) describe necessary MRV institutional settings built on the recommended MRV institutional plan; and (iii) recommend mechanisms and steps to integrate effective mitigation actions into ongoing and future CTF projects, as well as those funded by other sources in the transport and energy sectors, by utilizing the results of the analysis and verifying mitigation actions. The guidelines will be reviewed and updated through consultations with relevant agencies to improve their quality based on users' feedback.

14. **Output 3: Agencies' capacity in climate change mitigation enhanced and coordinated.** The TA will enhance the capacity of environment and sector agencies in climate change mitigation and coordination through knowledge sharing and capacity development. A training program will be provided to focal point officers in agencies implementing mitigation actions, the MONRE, and other relevant agencies. In addition, the TA will contribute to the domestic and international dissemination of the progress and achievements of CTF implementation in Viet Nam through climate change conferences and meetings. The TA will develop a communications and knowledge management plan and media products on CTF activities in Viet Nam for public and other relevant conferences and meetings.

15. It is assumed that the government and international development partners will remain committed to climate change mitigation. Short-term development driven by rapid industrial growth and urbanization may cause the government to address imminent problems promptly instead of naming long-term sustainable development priorities. Although the government is committed to climate change mitigation through environment-friendly infrastructure, limited financial and human resources and a lack of interest among sector agencies in MRV implementation may hamper the effective implementation of the TA as well as its outputs.

C. Cost and Financing

16. The TA is estimated to cost \$1,025,000, of which \$999,600 will be financed on a grant basis by the CTF and administered by ADB. The government will provide counterpart support in the form of counterpart staff, office facilities, and other in-kind contributions.

D. Implementation Arrangements

17. The TA is expected to be implemented from 1 July 2016 to 31 March 2019. The executing agency will be the MONRE, which is the national focal point implementing the United Nations Framework Convention on Climate Change and the Kyoto Protocol, as well as the designated national authority for the Clean Development Mechanism. The MONRE has been implementing various programs and projects on climate change adaptation and mitigation. Its International Cooperation Department (ICD), as the implementing agency, will (i) coordinate and monitor the consultant services, (ii) collaborate with related stakeholders, and (iii) provide the support necessary to implement essential activities successfully.

18. The sector agencies, including the Ministry of Transport, the Ministry of Industry and Trade, people's committees, and the state-owned enterprise, are in charge of implementing the CTF projects. The MONRE will involve these agencies in TA activities through various opportunities, including a task force and training program, to enhance the capacity and commitment of all agencies, integrate MRVs into their operations, and ensure interagency cooperation and coordination. To discuss technical issues, especially with regard to outputs 1 and 2, the ICD will form a task force from the staff of relevant agencies (e.g., the Ministry of Transport, the Ministry of Industry and Trade, and the Ministry of Planning and Investment). To work with sector agencies and development partners regarding technical issues, the ICD will collaborate with the Department of Meteorology, Hydrology, and Climate Change under the MONRE. Technical staff from this department are currently implementing TA projects supported by the Government of Germany through Deutsche Gesellschaft für Internationale Zusammenarbeit, the Japan International Cooperation Agency, the United Nations Development Programme, and the World Bank, among others.

19. Other development partners are also helping the government develop MRVs. The Government of Germany through Deutsche Gesellschaft für Internationale Zusammenarbeit and the Japan International Cooperation Agency will establish a national MRV framework. The Food and Agriculture Organization will develop an MRV in agriculture, the World Bank will develop an MRV in steel and waste management, and the United Nations Development Programme will develop an MRV in cement. The MONRE, relevant agencies, and other development partners will coordinate their MRV development activities to establish MRVs that are well aligned at national and sector levels. The proposed TA will also work closely with the ongoing TA for the Core Environment Program and Biodiversity Conservation Corridors Initiative, Phase II, which has been developing MRV frameworks in the Greater Mekong Subregion countries (footnote 5).

20. ADB will recruit a consultant firm using quality- and cost-based selection with a quality-cost ratio of 90:10 according to the Guidelines on the Use of Consultants (2013, as amended from time to time). The TA will require 17 person-months of international and 47 person-months of national consultant inputs. The outline terms of reference for consultants is in Appendix 3. Consultants will manage equipment, training, seminars, conferences, and surveys. Equipment will be procured in accordance with ADB's Procurement Guidelines (2015, as amended from time to time). Upon completion of the TA, all equipment, materials, and data will be handed over to the MONRE. TA disbursements will be handled according to the *Technical Assistance Disbursement Handbook* (2010, as amended from time to time).

21. The MONRE will continuously maintain and update the information on climate change mitigation built on TA outputs with its own funds. The MONRE will disseminate TA outputs through knowledge and/or media products, climate change conferences, and other public communication channels, including the MONRE website.

IV. THE PRESIDENT'S DECISION

22. The President, acting under the authority delegated by the Board, has approved ADB administering technical assistance not exceeding the equivalent of \$999,600 to the Government of Viet Nam to be financed on a grant basis by the Clean Technology Fund for Mainstreaming Climate Change Mitigation into National Infrastructure, and hereby reports this action to the Board.

DESIGN AND MONITORING FRAMEWORK

Impact of the TA is Aligned With:			
The Government of Viet Nam's National Climate Change Strategy 2011 to develop a low-carbon economy to protect and improve quality of life and guarantee national security and sustainable development			
Results Chain	Performance Indicators with Targets and Baselines	Data Sources and Reporting	Risks
Outcome Environment-friendly and low-carbon transport and energy projects developed	The number of climate change mitigation projects supported by international financial institutions in the transport and energy sectors increased by 25% by 2020 (2015 baseline: 12 projects)	MONRE annual report	Long-term sustainable development priorities overridden by short-term development needs
Outputs 1. Measuring, reporting, and verification systems for CTF projects developed and strengthened 2. Transport and energy sector mitigation guidelines established 3. Agencies' capacity in climate change mitigation enhanced and coordinated	1a. MRVs developed and adopted in the MONRE and relevant agencies, and baseline data for CTF projects established by 2016 (2015 baseline: NA) 1b. Timely submission of complete CTF reports by the MONRE including relevant agencies' inputs by 2019 (2015 baseline: NA) 2a. Guidelines agreed upon by the MONRE and line ministries by 2017 (2015 baseline: NA) 2b. Guidelines applied to all CTF project implementation agencies by 2019 (2015 baseline: NA) 3a. At least 50 MONRE employees and relevant government staff trained in climate change mitigation by 2019 (2015 baseline: NA) 3b. A communications and knowledge management plan for mitigation approved by the MONRE by 2017 (2015 baseline: NA) 3c. CTF media products	1a–b. CTF annual report 2a. MONRE annual report 2b. TA progress report 3a–c. TA progress report	Limited resources for MRV implementation; lack of interest from sector agencies

Results Chain	Performance Indicators with Targets and Baselines	Data Sources and Reporting	Risks
	disseminated by 2019 (2015 baseline: NA)		
<p>Key Activities with Milestones</p> <p>Output 1. Measuring, reporting, and verification systems for CTF projects developed and strengthened</p> <ol style="list-style-type: none"> 1.1 Review current institutional settings and practices from July to September 2016 1.2 Develop an MRV institutional plan in September 2016 1.3 Establish baselines for CTF projects from October to December 2016 1.4 Help agencies implement and operate MRVs from November 2016 to March 2019 1.5 Review the MRV results of the approved CTF projects biannually from February 2017 to July 2018 <p>Output 2. Transport and energy sector mitigation guidelines established</p> <ol style="list-style-type: none"> 2.1 Develop mitigation guidelines from July to November 2016 2.2 Help agencies apply the guidelines to all CTF projects from February 2017 to March 2019 2.3 Periodically review and update the guidelines from May 2017 to March 2019 <p>Output 3. Agencies' capacity in climate change mitigation enhanced and coordinated</p> <ol style="list-style-type: none"> 3.1 Develop a communications and knowledge management plan for climate change mitigation from September to December 2016 3.2 Create and disseminate CTF media products from September 2016 to March 2019 3.3 Design a training program for the MONRE and relevant staff to build their capacity in MRVs using the guidelines from October 2016 to February 2017 3.4 Organize events to promote climate change objectives from February 2016 to October 2018 3.5 Conduct a periodic training program for the MONRE and relevant staff from February 2017 to March 2019 			
<p>Inputs</p> <p>Clean Technology Fund: \$999,600</p> <p>Note: The government will provide counterpart support in the form of counterpart staff, office facilities, and other in-kind contributions.</p>			
<p>Assumptions for Partner Financing</p> <p>Not applicable.</p>			

CTF = Clean Technology Fund; MONRE = Ministry of Natural Resources and Environment; MRV = measuring, reporting, and verification system; NA = not applicable; TA = technical assistance.
Source: Asian Development Bank.

COST ESTIMATES AND FINANCING PLAN

(\$'000)

Item	Amount
Clean Technology Fund^a	
1. Consultants	
a. Remuneration and per diem	
i. International consultants (17 person-months)	354.0
ii. National consultants (47 person-months)	152.0
b. International and local travel	60.7
c. Reports and communications	30.0
2. Equipment ^b	20.0
3. Training, seminars, and conferences ^c	
a. Facilitators	45.0
b. Training program	40.0
c. Workshops and seminars	42.0
4. Surveys ^d	30.0
5. Miscellaneous administration and support costs ^e	84.5
6. Multilateral development bank fee ^f	47.6
7. Contingencies	93.8
Total	999.6

Note: The technical assistance (TA) is estimated to cost \$1,025,000, of which contributions from the Clean Technology Fund are presented in the table above. The government will provide counterpart support in the form of counterpart staff, office facilities, and other in-kind contributions. The value of government contribution is estimated to account for 2.5% of the total TA cost.

^a Administered by the Asian Development Bank (ADB).

^b Includes computers, software for data management, and peripheral devices. Equipment will be handed over to the Ministry of Natural Resources and Environment upon completion of the TA.

^c Includes costs for participants' travel and related logistics, and related costs for external facilitators.

^d Includes project data surveys and mitigation measurement surveys.

^e Includes local surface transportation, national support staff, and publication and media documentation.

^f Reimburse ADB for its incremental staff, consultants, travel and related costs of project development, appraisal, implementation support, supervision, and reporting.

Source: ADB estimates.

OUTLINE TERMS OF REFERENCE FOR CONSULTANTS

A. Objective

1. The capacity development technical assistance (TA) for Mainstreaming Climate Change Mitigation into National Infrastructure is needed to implement and operate robust measuring, reporting, and verification systems (MRVs), including the establishment of baselines, from project implementation to operation in environment and sector agencies.

B. Consulting Services

2. The consulting services will directly support the implementation of three TA outputs: (i) the development and strengthening of MRVs for Clean Technology Fund (CTF) projects, (ii) the establishment of transport and energy sector mitigation guidelines, and (iii) the enhancement and coordination of agencies' capacity in climate change mitigation.

3. The executing agency will be the Ministry of Natural Resources and Environment (MONRE), which has been implementing various climate change programs and projects. Its International Cooperation Department (ICD), as the implementing agency, will (i) coordinate and monitor the consultant services, (ii) collaborate with relevant stakeholders, and (iii) provide the support necessary to implement essential activities successfully.

4. ADB will recruit a consultant firm using quality- and cost-based selection with a quality–cost ratio of 90:10 following the submission of full technical proposals according to ADB's Guidelines on the Use of Consultants (2013, as amended from time to time). The TA will provide 17 person-months of international consultants and 47 person-months of national consultants as follows:

5. **Climate change institutional specialist and team leader** (international, 7 person-months). The consultant will do the following tasks:

- (i) review past and ongoing support from the government and development partners, as well as current practices in Viet Nam and good practices in other countries;
- (ii) conduct an institutional analysis for environment and sector agencies;
- (iii) identify gaps in data collection, analysis, and reporting in terms of technical skills and knowledge, financing, and institutional arrangements;
- (iv) develop a recommended MRV institutional plan;
- (v) help environment and sector agencies implement and operate MRVs and establish baselines by sharing consistent MRVs with the agencies;
- (vi) lead the development of the transport and energy sector mitigation guidelines as a primary resource for implementing and managing mitigation actions; and
- (vii) develop a training program and provide it to the agencies.

6. **Qualifications.** The consultant should have (i) an advanced degree in environmental or civil engineering or environmental economics; (ii) at least 10 years' experience in climate change mitigation, the development of monitoring and evaluation systems, and institutional reform; and (iii) prior experience leading capacity building projects.

7. **Climate change expert and deputy team leader** (national, 23 person-months). The consultant will do the following tasks:

- (i) help the team leader conduct an institutional analysis for environment and sector agencies;
- (ii) help the team leader develop a recommended MRV institutional plan;
- (iii) help environment and sector agencies implement and operate MRVs and establish baselines by sharing consistent MRVs with the agencies;
- (iv) update the MRV institutional plan and mitigation guidelines by consulting with the agencies;
- (v) consult with the agencies to develop a training program; and
- (vi) help the team leader provide the agencies with the training program.

8. **Qualifications.** The consultant should have (i) a bachelor's degree in environmental or civil engineering; (ii) at least 7 years of experience in climate change mitigation programs and capacity building projects; and (iii) fluency in English.

9. **Economist** (international, 1 person-month). The consultant will do the following tasks:
- (i) review economic analyses of CTF and other investments;
 - (ii) develop recommendations for an economic analysis incorporating greenhouse gas (GHG) emission reduction criteria;
 - (iii) identify the technical, economical, and institutional feasibility of upscaling priority mitigation actions for the transport and energy sectors;
 - (iv) help the team leader and deputy team leader develop guidelines to design, measure, and evaluate mitigation actions; and
 - (v) contribute to the development of the training program.

10. **Qualifications.** The consultant should have (i) an advanced degree in economics, and (ii) at least 5 years of experience in economic analysis for climate change programs.

11. **Economic expert** (national, 2 person-months). The expert will do the following tasks:
- (i) collect information from economic analyses of CTF and other investments;
 - (ii) help the economist develop recommendations for an economic analysis;
 - (iii) help identify the technical, economical, and institutional feasibility of upscaling priority mitigation actions for the transport and energy sectors; and
 - (iv) help the team leader and deputy team leader develop guidelines to design, measure, and evaluate mitigation actions.

12. **Qualifications.** The expert should have (i) a bachelor's degree in economics; (ii) at least 5 years of experience in economic analysis for climate change programs; and (iii) working proficiency in English.

13. **Financial analyst** (international, 1 person-month). The analyst will do the following tasks:
- (i) review financial analyses of CTF and other investments;
 - (ii) develop recommendations for a financial analysis of the CTF investments incorporating GHG emission reduction criteria;
 - (iii) identify the technical, financial, and institutional feasibility of upscaling priority mitigation actions for the transport and energy sectors;
 - (iv) help the team leader and deputy team leader develop guidelines to design, measure, and evaluate mitigation actions; and
 - (v) contribute to the development of the training program.

14. **Qualifications.** The analyst should have (i) a degree in accounting, business, or a related field; (ii) professional certification (e.g., Certified Accountant, Certified Public Accountant,

or Chartered Financial Analyst); and (iii) at least 5 years of experience in financial analysis for climate change programs.

15. **Financial expert** (national, 2 person-months). The expert will do the following tasks:
 - (i) collect information from financial analyses of CTF and other investments;
 - (ii) help the financial analyst develop recommendations for a financial analysis;
 - (iii) help identify the technical, economic, and institutional feasibility of upscaling priority mitigation actions for the transport and energy sectors; and
 - (iv) help the team leader and deputy team leader develop guidelines to design, measure, and evaluate mitigation actions.

16. **Qualifications.** The expert should have (i) a bachelor's degree in accounting, business, or a related field; (ii) at least 5 years of experience in financial analysis for climate change programs; and (iii) working proficiency in English.

17. **Low-carbon transport specialist** (international, 3 person-months). The specialist will do the following tasks:
 - (i) review CTF projects and other mitigation programs in the transport sector;
 - (ii) provide technical inputs to develop recommendations for MRVs for CTF projects;
 - (iii) help transport agencies implement and operate MRVs and establish baselines;
 - (iv) develop a list of mitigation actions for the transport sector with a focus on the sustainability of CTF investment projects and other mitigation programs;
 - (v) provide inputs on the draft mitigation guidelines in the transport sector; and
 - (vi) contribute to the development of the training program.

18. **Qualifications.** The specialist should have (i) an advanced degree in transport or civil engineering, transport planning, or transport economics; and (ii) at least 5 years of experience in climate change mitigation programs and capacity building in the transport sector.

19. **Transport expert** (national, 5 person-months). The expert will do the following tasks:
 - (i) collect information from CTF projects and other mitigation programs in the transport sector;
 - (ii) work with the low-carbon transport specialist to provide technical inputs to develop recommendations for MRVs;
 - (iii) help the low-carbon transport specialist implement and operate MRVs and establish baselines in the transport agencies; and
 - (iv) contribute to the provision of the training program.

20. **Qualifications.** The expert should have (i) a bachelor's degree in transport or civil engineering or transport planning; (ii) at least 5 years of experience in climate change mitigation programs and infrastructure development projects in the transport sector; and (iii) working proficiency in English.

21. **Energy specialist** (international, 2 person-months). The specialist will do the following tasks:
 - (i) review CTF projects and other mitigation programs in the energy sector;
 - (ii) provide technical inputs to develop recommendations for MRVs for CTF projects;
 - (iii) help energy agencies implement and operate MRVs and establish baselines;
 - (iv) develop a list of mitigation actions for the energy sector with a focus on the sustainability of CTF investment projects and other mitigation programs;
 - (v) provide inputs on the draft mitigation guidelines in the transport sector; and

- (vi) contribute to the development of the training program.

22. **Qualifications.** The specialist should have (i) an advanced degree in energy, civil engineering, or environmental economics; and (ii) at least 5 years of experience in climate change mitigation programs and capacity building in the energy sector.

23. **Energy Expert** (national, 3 person-months). The expert will do the following tasks:

- (i) collect information about CTF projects and other mitigation programs in the energy sector;
- (ii) work with the energy specialist to provide technical inputs to develop recommendations for MRVs;
- (iii) help the energy specialist implement and operate MRVs and establish baselines in the energy agencies; and
- (iv) contribute to the provision of the training program.

24. **Qualifications.** The expert should have (i) a bachelor's degree in energy, civil engineering, or environmental economics; (ii) at least 5 years of experience in climate change mitigation programs and infrastructure development projects in the energy sector; and (iii) working proficiency in English.

25. **Public communications specialist** (international, 3 person-months). The specialist will do the following tasks:

- (i) develop a communications and knowledge management plan for Viet Nam on climate change mitigation by reviewing existing processes;
- (ii) help develop media products on CTF activities in Viet Nam;
- (iii) lead the dissemination of CTF media products through various opportunities;
- (iv) organize side events in relevant forums to introduce the implementation of the CTF in Viet Nam, and support requests to international organizations to help Viet Nam achieve its climate change objectives; and
- (v) help the team leader develop a training program.

26. **Qualifications.** The specialist should have (i) a bachelor's degree in relevant disciplines; and (ii) at least 7 years of experience in public relations and capacity building for international development projects.

27. **Communications expert** (national, 12 person-months). The expert will do the following tasks:

- (i) collect information about existing communications and knowledge processes, with a focus on existing CTF projects;
- (ii) help the public communications specialist develop a communications and knowledge management plan;
- (iii) support the development of media products on CTF activities in Viet Nam;
- (iv) help disseminate CTF media products through various opportunities;
- (v) help the public communications specialist identify climate change events and organize the side events; and
- (vi) help the team leader develop a training program.

28. **Qualifications.** The specialist should have (i) a tertiary degree in relevant disciplines; (ii) at least 5 years of experience in public relations and capacity building; and (iii) working proficiency in English.

29. Consultants will manage equipment, training, seminars, conferences, and surveys. Equipment will be procured in accordance with ADB's Procurement Guidelines (2015, as amended from time to time). Upon completion of the TA, all equipment, materials, and data will be handed over to the executing agency. The TA disbursements will be handled according to ADB's *Technical Assistance Disbursement Handbook* (2010, as amended from time to time).

30. Consultants will directly support the preparation and translation of relevant reports and outputs. Consultants may include national support staff who will help the ICD and international and national experts collect relevant data, prepare and translate documents, manage logistics, and support events or training sessions, as appropriate.

C. Outputs or Deliverables

31. The consultants will prepare and submit the following reports, guidelines, plans, products, and training modules related to the three TA outputs:

- (i) **Reports.** An inception report to be submitted to the ICD, MONRE, and ADB within 1 month of commencement of services. Progress reports will be submitted on a quarterly basis. A midterm report will be submitted in September 2017. A draft final report including and summarizing all activities under the services, including other deliverables, will be submitted in January 2019 to be reviewed and commented on by all stakeholders. A final report will be submitted within 2 months of receipt of all comments.
- (ii) **Mitigation guidelines.** The guidelines will (a) list mitigation actions derived from reviewing CTF projects and other mitigation programs in Viet Nam and other countries if applicable to Viet Nam; (b) describe necessary MRV institutional settings; and (c) recommend mechanisms and steps to integrate effective mitigation actions into ongoing and future CTF projects, as well as others in the transport and energy sectors, by utilizing MRV results. The initial draft will be submitted for comments and discussion by September 2016 and will be revised for final submission by November 2016. The guidelines will be periodically reviewed and updated as necessary.
- (iii) **Communications and knowledge management plan.** The draft plan will be submitted by the end of November 2016 and finalized in December 2016, at least 2 months prior to the dissemination of any media products or regional events deliverable under the services.
- (iv) **Clean Technology Fund media product.** The draft CTF media product should be prepared and submitted by the end of November 2016, and the final product submitted and approved 2 months prior to the expected dissemination of the product at the CTF annual meeting in January 2017.
- (v) **Regional events.** The media product will be also disseminated in at least one relevant national or regional event in 2016, 2017, and 2018.
- (vi) **Capacity development training program.** The training program is expected to be prepared and submitted for comment by the end of November 2016, and finalized by February 2017. Two courses will be conducted from 2017 to 2019, and should include staff from the MONRE, ICD, CTF-funded project agencies, relevant government departments, and other relevant national or international stakeholders operating in Viet Nam.