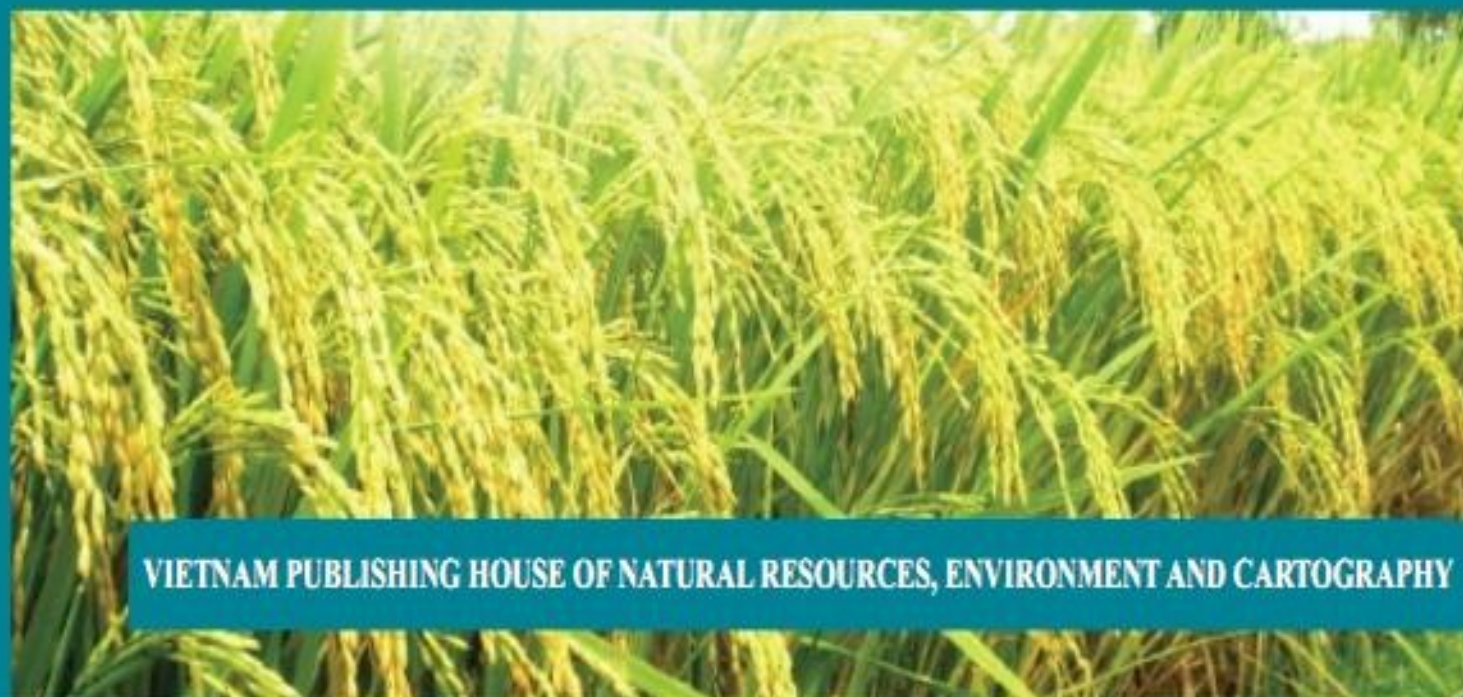


TECHNICAL GUIDANCE

FOR INTEGRATING CLIMATE CHANGE
INTO DEVELOPMENT PLANS



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Technical Guidance
for
Integrating Climate Change into Development Plans

Hanoi – 2012

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This Technical Guidance for Integrating Climate Change Into Development Plans (Plans in brief) was developed by the Institute of Meteorology, Hydrology and Environment, in cooperation with other relevant agencies and with the technical and financial support from the United Nations Development Programme (UNDP).

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Preface

Climate change is a global issue, which receives the attention of all classes in society, from the highest leaders to the local people in all countries and regions in the world.

The results from scientific research in the world and in Vietnam has shown that climate change is imposing greater impacts on the activities of socio-economic development and environmental protection in all regions, which has become one of the greatest challenges to sustainable development of humanity in general and to Vietnam in particular.

Being aware of the importance of climate change to the country's development, the Government of Vietnam has approved and is implementing the National Target Program to Respond to Climate Change (NTP-RCC), the National Strategy on Climate Change and is preparing to implement the National Action Plan on Climate Change from the national level to the Ministerial, sectoral and local levels. These programs have identified that one of the important tasks is to integrate climate change into socio-economic development strategies, planning processes and plans to implement the activities of climate change response effectively and align the objective of climate change response and sustainable socio-economic development.

The Ministry of Natural Resources and Environment (MoNRE) was assigned by the Government to be the focal agency to implement effectively climate change response activities. The Ministry assigned the Institute of Meteorology, Hydrology and Environment to cooperate with the United Nations Development Programme (UNDP) to develop and disseminate this *Technical Guidance on Integrating Climate Change into Socio-Economic Strategies, Planning Processes and Plans*.

This document aims to provide policy-makers from the central to local levels with general information on climate policy integration, the activities implemented before mainstreaming, the mainstreaming process as well as the tools that may be used to support the process of mainstreaming climate change into socio-economic development plans.

The Ministry of Natural Resources and Environment is honored to introduce this *Technical Guidance on Integrating Climate Change into Socio-Economic Strategies, Planning Processes and Plans* so that the ministries, sectors and local provinces can have a practical reference for the process of developing and implementing socio-economic policies, strategies and plans in the context of climate change.

Nguyen Minh Quang

The Minister of Natural Resources and Environment

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LIST OF ABBREVIATIONS

ADB	Asian Development Bank
ALM	Adaptation Learning Mechanism
CATHALAC	Water Centre for the Humid Tropics of Latin America and the Caribbean
CBCC	Capacity Building on Climate Change Project
CCA QS	UNDP's Quality Standards for the Integration of Adaptation to Climate Change into Development Programming
CDM	Clean Development Mechanism
CEDRA	Climate Change and Environmental Degradation Risk and Adaptation Assessment
CRISTAL	Community-based Risk Screening Tool – Adaptation & Livelihoods
DNA	Designated National Authorities
EEA	European Environmental Agency
FAO	Food and Agriculture Organization
GTZ	<i>Deutsche Gesellschaft für Technische Zusammenarbeit</i>
ICLEI	Local Governments for Sustainability
IISD	International Institute for Sustainable Development
IMHEN	Institute of Meteorology, Hydrology and Environment
IPCC	Inter-governmental Panel for Climate Change
ISPONRE	Institute of Strategy and Policy on Natural Resources and Environment
JICA	Japan International Cooperation Agency

LEAP	Long-range Energy Alternatives Planning System
LULUCF	Land Use, Land-Use Change and Forestry
MoNRE	Ministry of Natural Resources and Environment
NASA	National Aeronautics and Space Administration
NTP-RCC	National Target Program to Respond to Climate Change
OECD	Organisation for Economic Co-operation and Development
ORCHID	Opportunities and Risks of Climate Change and Disasters
PIK	Postdam Institute for Climate Impact Research
PRECIS	Providing REgional Climates for Impacts Studies
PST	Project Screening Tool
REDD	Reducing Emissions from Deforestation and Forest Degradation in Developing Countries
SEI	Stockholm Environmental Institute
UN	United Nations
UNCCD	United Nations Convention to Combat Desertification
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change
USAID	United States Agency for International Development
WB	World Bank
WSSD	World Summit on Sustainable Development

EXECUTIVE SUMMARY

The *Technical Guidance on Integrating Climate Change into Socio-Economic Strategies, Planning Processes and Plans* (henceforth the Technical Guidance)¹ was developed in order to provide the policy-makers with an overview of climate mainstreaming and to introduce the mainstreaming process and tools to support the mainstreaming process. The Technical Guidance includes four chapters: (i) Introduction; (ii) Overview of climate change integration in Vietnam; (iii) The process of integrating climate change into development plans; and (iv) guidance on integrating climate change into development plans.

1. Objectives and target audiences

1.1. Objectives

The objectives of the Technical Guidance include (i) assisting policy-makers in understanding the importance of integrating climate change into strategies, planning processes and plans; (ii) providing general guidance on integrating climate change issues into the processes of developing and implementing strategies, planning and plans; and (iii) enhancing the climate change response capacity of relevant sectors.

1.2. Target audiences

The targeted audience of the Technical Guidance include (i) policy-makers, especially experts working for the ministries/sectors directly impacted by climate change; (ii) policy-makers at provincial/city levels; (iii) other stakeholders participating in the process of developing and implementing strategies, planning processes and plans.

2. Overview of climate policy integration in Vietnam

Integrating climate change into socio-economic development strategies, planning processes and plans is a wise approach to implement climate change response activities effectively, to ensure the stability of investment activities and to reduce the vulnerability of the socio-economic sectors due to climate change. The integration of climate change into development strategies, planning processes and plans can be implemented vertically and horizontally.

2.1. The necessary of climate policy integration

In the context of climate change, climate change adaptation and mitigation measures are considered part of development policies. Climate policy integration is an important factor when designing an effective policy to achieve the benefits of

¹In the Technical Guidance, the term “development plans” includes both development strategies and planning processes.

economic development and climate change response. Climate change actually impacts development plans, from building construction to formulating development policies. If development activities are not integrated with climate change at present, it is extremely difficult for them to adapt in a timely manner to climate change in the future. Conversely, the potential damage due to climate change will be reduced if adaptation activities are integrated into development plans from the beginning, especially for permanent infrastructure.

2.2. The status of climate policy integration in Vietnam

In Vietnam, the Government approved the National Target Programme to Respond to Climate Change (NTP) and the National Strategy on Climate Change, which require that climate change is integrated into all new development strategies and policies. However, at present, no strategies, planning processes and plans in Vietnam are integrated completely with climate change.

2.3. Benefits of and barriers to climate policy integration

Benefits

- Taking the most advantage of using national and social resources, ensuring the sustainable development of the economy;
- Reducing the impacts of the disaster due to lack of knowledge or information;
- Ensuring social equity;
- Reducing social vulnerability, contributing to hunger eradication and poverty reduction;
- Raising the responsibility and the sense of initiative of the authorities; and
- Contributing to greenhouse gases reduction on the world.

Barriers

- Lack of quantitative data on the trends of climate change in the future;
- Lack of legal regulations, which require climate policy integration;
- The capacity of climate policy integration remains limited;
- The resources (personnel, time and finance) for the implementation of climate policy integration are insufficient; and
- The trade-off between development and climate change.

3. The process of integrating climate change into development plans

3.1. Mainstreaming principles

- (i) Sustainable development, multi-sector/regional development, gender equity, hunger eradication and poverty reduction;

- (ii) Prioritize the cost-effectiveness of the climate change response measures for sectors/sub-sectors;
- (iii) Mobilize and use effectively all resources; and
- (iv) Mainstream climate change is the duty of the policy-makers and the government.

3.2. Climate change mainstreaming process

The five steps for the mainstreaming process include the following:

Step T1: Screening

Step T2: Select the response measure

Step T3: Integrate climate change into the document of strategies, planning processes and plans

Step T4: Implement the climate change-integrated strategies, planning processes and plans

Step T5: Monitoring and assessment.

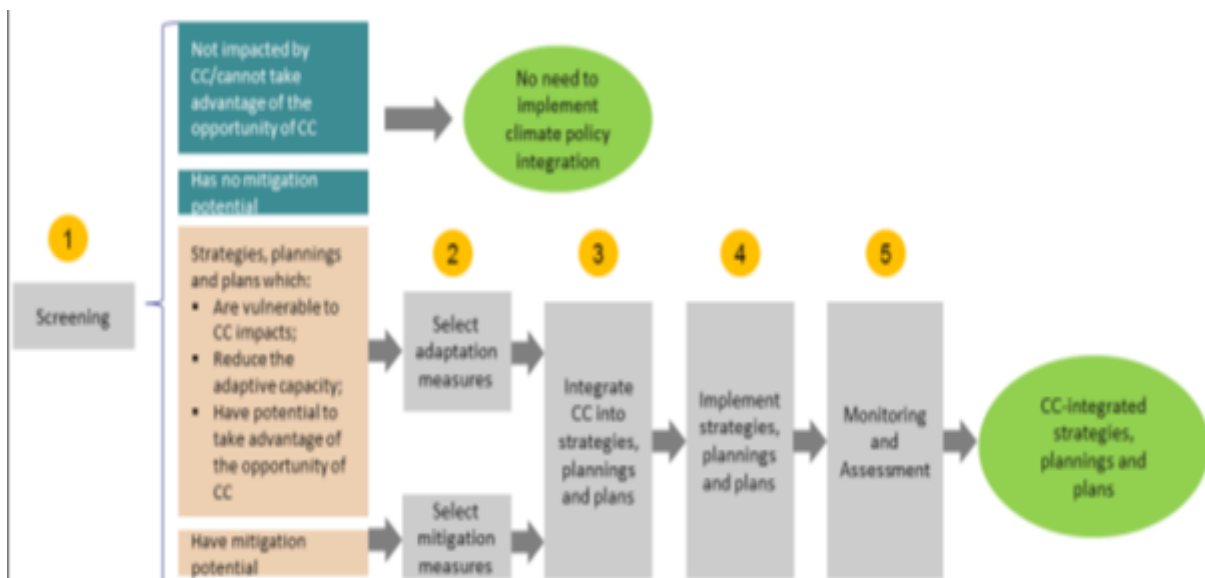


Figure 1. Five-step process for mainstreaming climate change into strategies, planning processes and plans

Step T1: Screening

The first step is to assess the relationship between the socio-economic strategies, planning processes, and plans with climate change and to assess whether or not it is necessary to implement climate policy integration. There are two groups of questions to be addressed in Step T1, including:

Group 1: *Whether or not that region/sector is vulnerable to climate change? Whether or not the socio-economic development activities can reduce the adaptive capacity and/or miss the opportunities brought by climate change?*

The step of screening is implemented and based upon, the scenarios for climate change and sea level rise for Vietnam and the assessment report of climate change impacts on sectors/regions belonging to those strategies, planning processes and plans. The use of the matrix tables to assess the relationship between the development goals and the degree and scale of climate change impacts.

Group 2: *Whether or not the region/sector has mitigation potential?*

Based on the published inventory of national and sectoral GHG emissions and on the following principles:

- (i) Voluntary and subject to the degree of financial support from other countries/international organizations; and
- (ii) Mitigation activities also bring back the economic benefits and development opportunities for that sector.

If the answer for Group 1 and/or Group 2 is “Yes”, we continue to implement Step T2.

Step T2: **Select response measures**, including:

T2a. Select adaptation measures: The process of selecting adaptation measures includes two steps:

- a. *Identify adaptation measures:* to provide a list of adaptation measures. The identification of adaptation measures is based on expert consultation and the matrix tables on the climate change impacts on sectors, corresponding adaptation measures and the relevant agencies.
- b. *Select adaptation measures:* based on criteria, such as effectiveness, cost and feasibility, etc. a matrix table of adaptation measures and selection criteria is developed to select the appropriate adaptation measures.

Step T2b: **Select mitigation measures**, including:

- a. *Identify mitigation measures:* to provide a long list of mitigation measures.
- b. *Select mitigation measures:* based on the following criteria: mitigation potential, cost, feasibility and other criteria such as: political and social acceptance, potential impact on biodiversity, speed of implementation, “non-regret” potential, no negative impacts on other development goals, aligning

with the requirements for the financial support and aligning with policy priorities, etc.

Step T3: Integrate climate change into the document of strategies, planning processes and plans

After identifying the adaptation and mitigation measures, it is necessary to integrate those measures into the documentation related to socio-economic development strategies, planning and plans. The integration of climate change into the documentation of strategies, planning processes and plans is based on the three following criteria:

- a. The target of the climate change response should become one of the targets of the strategy, planning process and plan;
- b. Climate change issues should be integrated in to the strategy, planning process and plan appropriately.
- c. Weighting of the integrated climate change aspects with other aspects.

Step T4: Implement socio-economic and sectoral development strategies, planning processes and plans integrated with climate change

Step T5: Monitoring and assessment: includes assessing the:

- (i) response measures;
- (ii) integration of climate change into policy documents, and
- (iii) process of implementation of climate change-integrated strategies, planning processes and plans. Based on the assessment results, adjustments should be undertaken if weaknesses are identified in the mainstreaming process.

4. Guidance on integrating climate change into socio-economic development strategies, planning processes and plans

4.1. For existing strategies, planning processes and plans

The five steps of the mainstreaming process will be integrated directly into the process of adjustment and implementation of the existing plans.

Table 1. Merging the mainstreaming process with the process of adjustment and implementation of the socio-economic development strategies, planning processes and plans

The process of review, adjustment and implementation of the existing strategies, planning processes and plans (policy-making process in short)	The mainstreaming process
Step 1: Review the existing strategies, planning processes and plans	Step T1: Screen Step T2: Select the response measure
Step 2: Make a report on the review, adjustment and supplementary changes	Step T3: Integrate climate change into policy documents
Step 3: Implement the adjusted strategies, planning processes and plans	Step T4: Implement the climate change-integrated strategies, planning processes and plans
Step 4: Evaluate the implementation of the adjusted strategies, planning processes and plans	Step T5: Monitor and assess

4.2. For new strategies, planning processes and plans

In terms of new socio-economic development strategies, planning processes and plans, climate change should be integrated in the development period of the Guidance framework for policy-making and in each stage of (i) Formulation, (ii) Verification, (iii) Approval, (iv) Implementation and (v) Monitoring and Assessment.

Merging the mainstreaming process with the process of formulating socio-economic development strategies, planning processes and plans at national level is illustrated in the following figure:

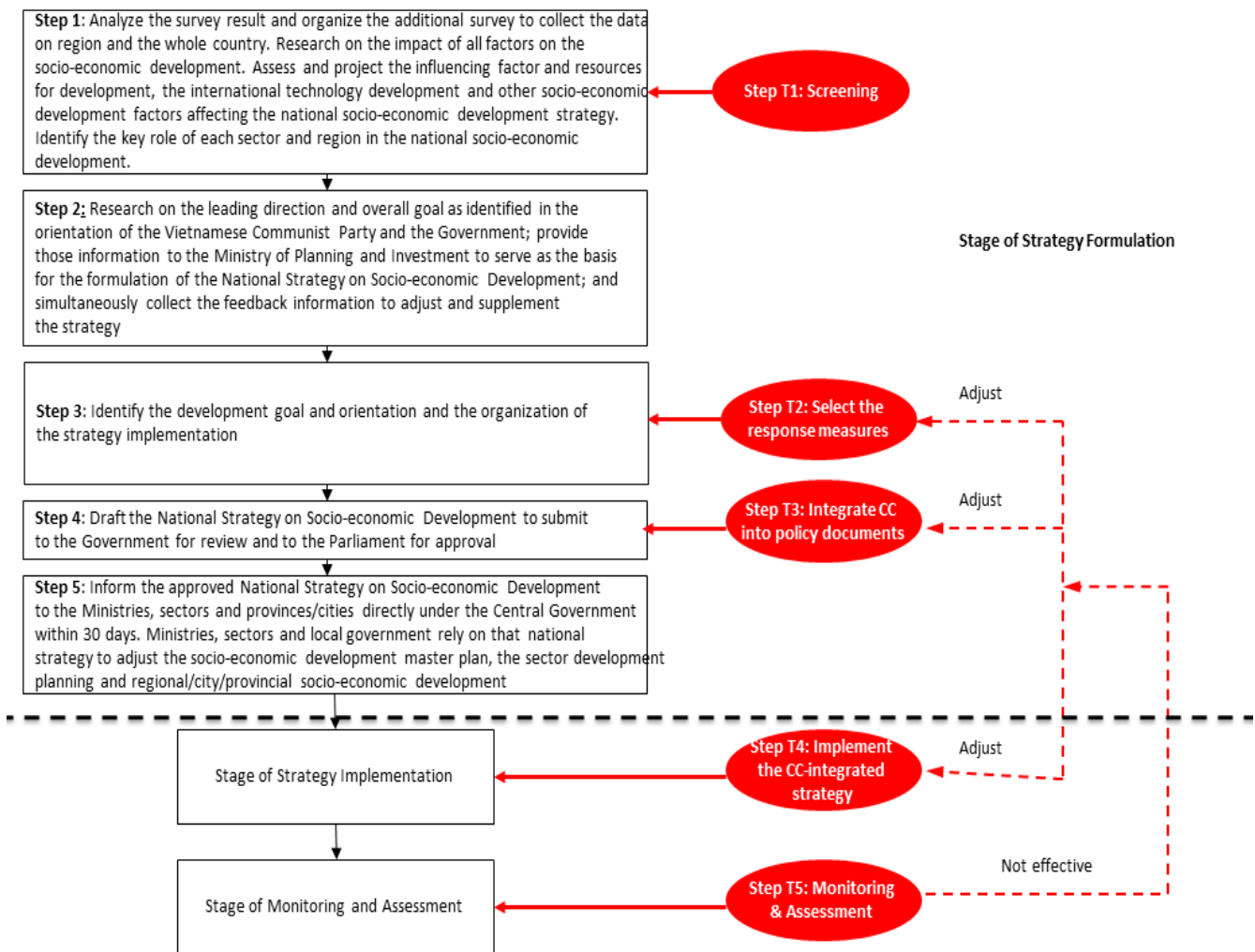


Figure 2. Merging the mainstreaming process with the process of formulating socio-economic development strategies, planning processes and plans at national level

The stages of merging the mainstreaming process with the process of formulating socio-economic development strategies, planning processes and plans at sectoral and city/provincial levels, are similar to those described in Figure 2, and presented specifically in the technical document.

4.3. Guidance on merging the mainstreaming process into the policy-making process

Step 1: Merge Step T1 (Screening) with Step 1 of the process of formulating the national/city/provincial socio-economic development strategy, planning processes and plans. The main content of this step includes (i) collecting data and research on the factors affecting socio-economic development, (ii) collecting data related to climate trends and climate change scenarios, and (iii) assessing the positive/negative

impacts of climate change on the development strategies, planning processes and plans.

Step 2: Merge **Step T2** with **Step 3** of the process of formulating development strategies, planning processes and plans. The content of this step includes (i) identification of the development goal and sentiment; (ii) identification of adaptation and mitigation targets and (iii) determination of adaptation and mitigation targets to assess the implementation of adaptation and mitigation measures.

Step 3: Merge **Step T3** of the mainstreaming process with **Step 4** of the process of formulating development strategies, planning processes and plans. The content of this step is that climate policy integration should be reflected in the documents of the strategy, planning processes and plan. Climate change responses should be included in the sections of ‘Overall goal’ and “Specific targets”. In addition to the targets of economic development, society and environmental protection, the target and timeframe of adaptation and mitigation should also be included.

Step 4: Implement the strategy, planning processes and plan integrated with climate change.

After climate change-integrated strategies, planning processes and plans are approved, the responsible and relevant agencies will cooperate proactively with each other to implement the strategy, planning and plan. The Ministry of Natural Resources and Environment at national level and the Departments of Natural Resources and Environment at city/provincial levels will play critical roles in supporting other sectors to implement climate change response measures.

Step T5: Monitoring and Assessment.

In **Step T5**, in addition to the assessment of the development activities, the implementation of the adaptation and mitigation measures should be assessed based on the criteria. Based on the assessment result, climate change response measures and assessment criteria will be adjusted appropriately so that they can better suit the reality and ensure the highest effectiveness of climate change response.

4.4. Responsible agencies

Climate policy integration is the responsibility of the state authority. This Technical Guidance proposes the institutional arrangement amongst agencies as follows:

- a. MPI and MoNRE play the vital role in guiding the implementation of climate policy integration; other relevant Ministries and sectors have the responsibility to

- cooperate with MPI and MoNRE and to propose adjustments and supplementation during the mainstreaming process;
- b. At the sectoral level: Ministries take key responsibility for integrating climate change into their strategies, planning processes and plans, in collaboration with other Ministries/agencies;
 - c. At the city/provincial level: The People's Committee of the city/province takes the main responsibility for climate policy integration. The Department of Natural Resources and Environment in that province is responsible for supporting the People's Committee in examining the content of adaptation and/or mitigation of which is integrated by other Departments.

The Department of Planning and Investment and the Department of Natural Resources and Environment will cooperate with other departments and districts to integrate multi-sectoral/multi-regional adaptation and/or mitigation activities.

The Department of Planning and Investment is in charge of synthesizing the integrated content of other departments, sectors and local agencies and integrating it into the provincial socio-economic development strategy, planning processes and plans. Simultaneously, the Department of Planning of Investment also cooperates with the Department of Natural Resources and Environment and other departments/agencies to conduct the final review of the draft city/provincial socio-economic development strategy, planning processes and plan to ensure that these can meet the demand for harmony amongst economic growth, society and environment/climate change, before being submitted to the People's Committee for approval.

1.1. Background

Vietnam is implementing the National Target Programme to Respond to Climate Change (NTP-RCC) which was approved by Decision No.158/2008/QD-TTg dated 2nd December 2008 of the Prime Minister. One of eight activities of the NTP-RCC is to integrate climate change into socio-economic and sectoral development strategies, planning processes and plans from national to local levels (plans in short). However, climate policy integration is a new topic and hence policy-makers face a lot of difficulties in the implementation of that activity.

In order to support the integration of climate change into development plans, the Institute of Meteorology, Hydrology and Environment in cooperation with other relevant agencies has developed the *“Technical Guidance for Integrating Climate Change into Socio-economic Development Strategies, Planning Processes and Plans”* for the national/sectoral and local levels. The development of this Technical Guidance is within the framework of the project of *“Strengthening national capacities to respond to climate change, reducing vulnerability and controlling GHG emissions”* (CBCC project) sponsored by the United Nations Development Programme.

The Technical Guidance was developed based on the technical guidance on climate policy integration of other international organizations and subsequently modified in order to be suitable to the current national circumstance of Vietnam.

This document will provide the policy-makers with an overview of climate policy integration, the activities implemented before mainstreaming, the mainstreaming process as well as the tools supporting the process of mainstreaming climate change into socio-economic development plans.

1.2. Objectives

- To assist policy-makers at national, sectoral and cities/provincial level to understand the importance of mainstreaming climate change into socio-economic development strategies, planning processes and plans;
- To assist policy-makers with integrating climate change issues into development strategies at national, sectoral and cities/Provincial levels; and
- To enhance the response capacity of relevant sectors.

1.3. Target audiences

- Policy-makers at national/sectoral and local levels, especially those working for the ministries/sectors directly impacted by climate change;
- Policy-makers at provincial/or city levels;
- Other stakeholders participating in the process of developing and implementing development strategies, planning and plans.

The Technical Guidance can also be used as a reference by other individuals and organizations in designing and implementing development projects, compiling textbooks and conducting scientific research.

1.4. The structure of the technical guidance

The Technical Guidance includes four chapters and one appendix:

Chapter 1: Introduction to the Technical Guidance

Chapter 2: Overview of climate policy integration in Vietnam

Chapter 3: Mainstreaming process

Chapter 4: Guidance on climate policy integration into development plans

Appendix: Tools used in the mainstreaming process.

The audience can refer to the whole or one part of the Technical Guidance based on their specific demands. The main messages are reflected in the whole content of the Technical Guidance and a number of demonstrative examples are provided.

2.1. Overview of climate policy integration

While conducting research on environmental issues and environmental policies, Underdal (1980) and Lafferty and Hovden (2003) developed the concept of “environmental policy integration”, which implies integrating the target of environmental protection into development policies. Based on this approach, by replacing the term of “environment” with “climate change”, the concept of “climate policy integration” was defined as follows:

- The incorporation of the aims of climate change mitigation and adaptation into all stages of policy-making in other policy sectors;
- Complemented by an attempt to aggregate expected consequences for climate change mitigation and adaptation into an overall evaluation of policy, and a commitment to minimize contradictions between climate policies and other policies.

Therefore, the integration of climate change into socio-economic development strategies, planning processes and plans is an approach to implement climate change response activities effectively and align the objective of climate change response and sustainable socio-economic development.

Policy integration can be divided into horizontal policy integration and vertical policy integration within and across governmental levels.

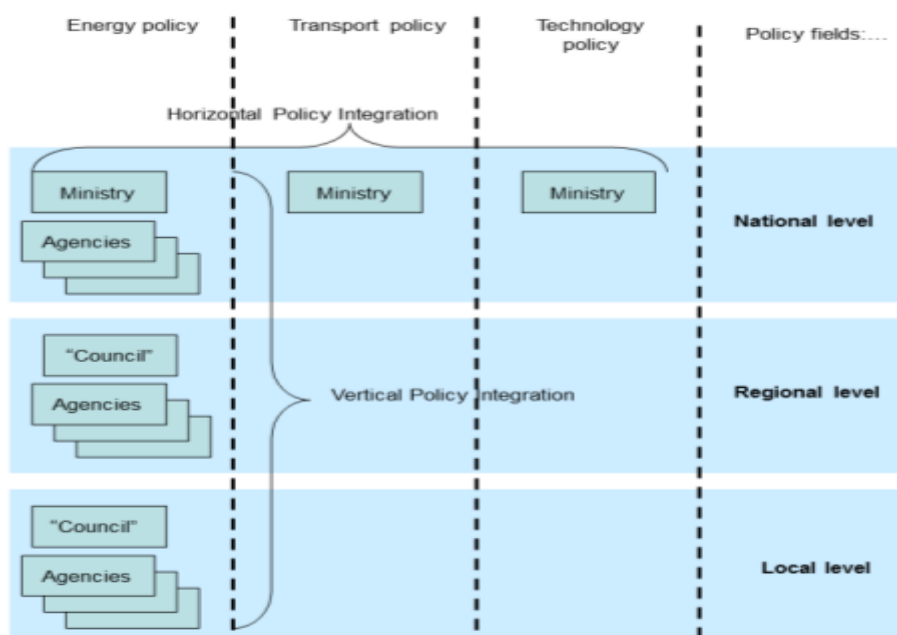


Figure 2. 1. Horizontal and vertical climate policy integration (after Mickwitz et al., 2009)

- Horizontal policy integration is to integrate the target of climate change response into the public policy of the Government (Beck et al., 2009; Mickwitz et al., 2009). The preparation and approval of the new plans and the state budget, which are related to climate change is considered horizontal policy integration;
- Vertical policy integration: is to embed the content of climate change into the sectoral policy. The activity of climate policy integration can be implemented during the process of decision-making and formulating sectoral development strategies and plans at Ministerial and sub-ministerial levels (Beck et al., 2009; Mickwitz et al., 2009).

2.2. The necessity for climate policy integration

The term 'mainstreaming' was mentioned for the first time in the 2002 World Summit on Sustainable Development (WSSD) (Klein et al., 2005; Ahmad, 2009). Conventional climate policy generally merges mitigation measures with the energy sector owing to its dominant share in the total emissions. However, 'climate track' cannot resolve the climate issue, and therefore the 'non-climate policy track', which implies the implementation of mitigation and adaptation options as part of sectoral policies (Aerts et al., 2004). Aligning development and climate change response is reflected in Article 4.1 of the UNFCCC (Klein et al., 2007). Climate policy integration is recognized as a salient factor to formulate an effective design of policies with joint climate and development benefits (Sathaye et al., 2007; Ahmad; 2009).



In Vietnam, climate change has really imposed negative impacts on development plans, from constructions to the policy of urban and residential development (Tran Thuc, 2009). In all cases, if development activities are not integrated with the present climate change, it is extremely difficult for them to be able to be adapted in a timely manner with the future climate change. Conversely, the damage due to climate

change will decrease if adaptation activities are integrated into development plans at the beginning, especially for the permanent infrastructure (Tran Thuc, 2009). For those reasons, climate change should be integrated into development policies and hence this is also an activity identified in the NTP-RCC (2008).

2.3. The status of climate policy integration in Vietnam

The political commitment to integrate climate adaptation and mitigation into other sectoral policies was demonstrated explicitly for the first time in the National Target Program to Respond to Climate Change (approved by Decision No.158/2008/QD-TTg of the Prime Minister dated 2nd December 2008). The NTP-RCC has marked an important milestone in formulating Vietnamese development plans as from now on all new policies and strategies must be integrated with climate change. At present, no policy in Vietnam has been mainstreamed. A standard framework for mainstreaming climate change issues into development plans is being developed by the Ministry of Planning and Investment (MPI). The Second National Strategy and Action Plan for Disaster Mitigation and Management 2001 – 2010 (approved by the Prime Minister in 2007) is considered the earliest climate-integrated policy; however, the Second National Strategy and Action Plan for Disaster Mitigation and Management 2001 - 2010 only has several climate change-related contents and hence cannot be regarded as a complete, climate-integrated policy.

Currently, many development activities have yet to be integrated with climate change. A number of meteorological and hydrological factors have been considered in the selection process for the design of roads and energy infrastructure. However, not all climate risks have been taken into consideration in the decision-making process. Policy-makers normally focus on the short-term rather than the long-term when formulating development plans. The strategies for socio-economic development, hunger eradication and poverty reduction and sectoral/local development have not considered climate change and only focus on present climate risks. Even if climate change was mentioned in such strategies, there was no guidance for the implementation of climate-integrated strategies (Tran Thuc, 2009).

In the energy sector, despite having no climate-integrated policy, Vietnam has developed several energy strategies and plans, which align with the GHG mitigation target in recent years. Although the initial intention of these strategies and plans is to promote energy security, they also contribute to the climate benefits.

Main sectors of agriculture and rural development sector, such as agriculture, forestry, aquaculture, irrigation and rural infrastructure, are considerably impacted by climate change. Ensuring the national food security, dyke management, flood

prevention and disaster mitigation are important tasks in order to stabilize society and help ensure sustainable development. Being aware of the importance of those activities, the Ministry of Agriculture and Rural Development (MARD) has promulgated Instruction No.809/CT-BNN-KHCN on the integration of climate change into the development and implementation of strategies, planning processes, plans, programs and projects of the agricultural and rural development sector for the period of 2011 – 2015.

2.4. Benefits of and barriers to climate policy integration

2.4.1. Benefits

- Integrating mitigation and adaptation objectives into all socio-economic development strategies, planning processes and plans to take the most advantage of using the national and social resources, helps to ensure sustainable development of the economy;
- Ensuring the stability of infrastructure and social security; limiting additional risks to construction;
- Predicting the disaster risk and reducing the impacts of the disaster due to lack of knowledge or information;
- Mobilizing the sources to develop funds for disaster prevention, reducing disaster risks;
- Sustainable development, contributing higher efficiency to economic growth and social security;
- Reduction of the wasteful expense and the overlapping of investments;
- Increasing the productivity and the quantity of plants and animals;
- Making the local government at provincial and district levels more responsible and proactive;
- Ensuring social equity: the provinces which do not have favorable natural conditions will be prioritized in terms of the investment into infrastructure;
- Reducing social vulnerability, contributing to hunger eradication and poverty reduction;
- Improving the capacity to cope with natural hazards on communities and reducing vulnerability;
- Facilitating the capacity to develop policy related to disaster prevention and socio-economic development;
- Linking the process of planning for natural disaster prevention with the process of development of socio-economic development plans at the local levels; after capacity to be enhanced, the local government implement proactively and

develop responsive measures, which are appropriate to the current circumstances;

- Contributing to reducing the greenhouse gases in the world.

2.4.2. Barriers

Vietnam lacks qualitative data for future climate change prediction. The current scenarios for climate change only have the average values for a large region and do not have the extreme values, which may be applied for smaller areas. Besides, so far there has not been any specific guidance on the integration of climate change into socio-economic development strategies, planning processes and plans. Recently, “*The Guidance Framework on Developing the Action Plan to Respond to Climate Change for Ministries, Sectors and Local Government*” and “*The Guidance on the Assessment of Climate Change Impacts and Identification of Adaptation Measures*” have been released. Simultaneously, the roles and responsibilities of relevant agencies in the mainstreaming process have yet to be clarified. The main barriers in the process of mainstreaming climate change into development plans include the following:

- Insufficient legal regulations, which require climate change integration as a compelling step in the process of developing socio-economic development strategies, planning processes and plans at national, sectoral and local levels;
- Limited capacity for integrating climate change into development strategies, planning processes and plans at national, sectoral and local levels;
- Insufficient resources (personnel, time and finance) for implementing climate change integration into development strategies, planning processes and plans at national, sectoral and local levels ;
- The data on climate change is usually not related indirectly to decisions on investment, for example:
 - Development plans need a lot of detailed information on climate change. However, the model only can predict several factors with uncertainty. The projection of climate extreme values is more difficult than that of the average values;
 - Sometimes the detailed level of spatial and temporal aspects of the climate change scenario is not sufficient for the development plans; for example, the project needs detailed data at the local level; however, the climate change scenarios could not meet that requirement.
- Trade-off between development and climate change:

- Limited budget: there are many urgent issues requiring investment (e.g. hunger eradication and poverty reduction and infrastructure) while the climate change impacts have yet to be confirmed with certainty.
- In some cases, the integration of climate change into projects can be considered as adding complication and extra investment capital to the projects;
- The benefits of short-term investment are usually prioritized rather than the long-term climate change adaptation plans, e.g. shrimp breeding and infrastructure development can create more jobs and increase income. However, it can also increase the vulnerability of the coastal area to climate change.
- Other barriers:
 - Climate change experts are usually working in several agencies;
 - Sectoral managers are already burdened by the integration of other issues, e.g. HIV&AIDS, hunger eradication and poverty reduction and gender equity, etc.
 - The investment period for many projects is from 3 to 5 years and hence it is not long enough to consider the potential and longer-term impacts by climate change;
 - Attracting investment for climate change adaptation is more difficult than that for more visible activities such as coping with urgent issues, recovering and reconstructing infrastructure after disasters.

CHAPTER 3 THE PROCESS OF INTEGRATING CLIMATE CHANGE INTO DEVELOPMENT PLANS

3.1. Mainstreaming principles

In order to be successful, the mainstreaming of climate change into development strategies, planning processes and plans should be based on the following principles:

- Climate policy integration should be implemented based on the principles of being sustainable, systematic, general, sectoral/multi-sectoral and regional/multi-regional development, promote gender equity, aim to eradicate hunger and reduce poverty;
- Mainstreaming climate change into development strategies, planning processes and plans at national, sectoral and local levels is the duty of policy-makers and the government;
- Mainstreaming climate change response activities into strategies, policies, planning processes and plans has to be implemented proactively through five stages, which are (i) Formulation, (ii) Verification, (iii) Approval, (iv) Implementation and (v) Monitoring and Assessment. During those five stages, policy-makers need to be proactive in the mainstreaming process and abide by the general guidance on the process of formulating plans;
- The implementation measures need to be organized in priority to ensure effectiveness in their implementation. The order of each measure should be based on the degree of climate change impacts, which can be referred from the climate change scenarios;
- Effectively mobilizing and utilizing resources from organizations, individuals nationwide and abroad.

3.2. Activities supporting for the mainstreaming process

3.2.1. Enhancing the institutional capacity and resources for mainstreaming

The institutional capacity and resources for mainstreaming activity are vital factors for the success of climate policy integration. The resources for mainstreaming include personnel, time and finance allocated for this activity (Mickwitz et al., 2009).



In Vietnam, the institutional capacity for the implementation of NTP-RCC differs amongst ministries. However, the common challenge of most ministries and sectors is the lack of sufficient awareness of climate change and related technical knowledge. Each ministry has different concepts of climate policy integration. Many Ministries and sectors are serious about mainstreaming climate change into development strategies, planning processes and plans. However, other Ministries have not yet to pay sufficient attention to climate policy integration (UN, 2009).

In terms of the resources for climate policy integration, the number of climate change experts remains limited and the investment into climate change research is inadequate. The extremely important duties before mainstreaming climate change include: (i) improving knowledge on climate change and climate policy integration for officers working for ministries and sectors and (ii) educating well-qualified climate change experts.

3.2.2. Enhancing the cooperation between relevant Ministries and sectors

Before the NTP-RCC was approved, the Ministry of Natural Resources and Environment took full responsibility for leading the climate change response activities. The experience reveals that this approach can lead to the difficulties in cooperation amongst Ministries and sectors. Currently, Vietnam has established the National Committee for Climate Change, which is headed by the Prime Minister who takes responsibility for managing climate change response activities.

3.2.3. Identifying and engaging key national actors

Integrating adaptation will require the involvement of all key national-level stakeholders (OECD, 2009). In Vietnam, the Ministry of Planning and Investment and the Ministry of Finance are two key agencies for mainstreaming climate change into the policy-making process as well as the management of public finance in order to support climate change response. The Ministry of Natural Resources and Environment plays a role in providing climate change information and technical guidance. The active participation of Parliament representatives and Government officers in consultation workshops on climate change response policies is also a critical element in the drafting of appropriate regulation frameworks. Ministries and sectors will play an active role in the integration of climate change into their activities. Civil society organizations also have an important role to play in raising awareness of the local communities on climate change. The donors contribute to the mainstreaming process through the development of cooperation programs, e.g. the National Support Program to Respond to Climate Change.

3.2.4. Improving access to national-level climate information



An important prerequisite for decision-making process for climate change response is that the decision has to be based on the best available and updated information on

the climate, weather, extreme events, climatic documents and both present and future climate change scenarios. The results of climate change impact and vulnerability assessment implemented by different agencies, Ministries and local government are also important reference information.

Besides, there are also a number of web-based resources on climate change which could be referred to (see the Appendix).

3.2.5. Building adaptation strategies upon existing national mechanisms for disaster risk reduction

The Vietnamese government has always prioritized investment for flood prevention and disaster risk reduction. In 2007, the Prime Minister approved the National Strategy on Disaster Mitigation and Management until 2020. The leadership and management for disaster mitigation have gradually been complemented, e.g. the Central Steering Committee for Flood and Storm Control is well established and the legal system for disaster risk management is being further developed.

The above factors have to be researched and integrated in the process of developing strategies on climate change adaptation.

3.2.6. Modifying regulations and standards to reflect current and anticipated climate risks

At the national level, regulations and standards are also important tools to create the environment and proper incentives for downstream agencies and actors to integrate climate change into their activities. Such mechanisms can be used to ensure that climate change is considered in development projects. It is critical that regulations and standards do not only 'lock in' the adaptation responses to past climate changes but also encourage consideration of future projected climate change trends.

3.2.7. Enhancing linkages between multilateral/regional commitments and adaptation

Climate change response should be considered within the context of multilateral and regional agreements. Vietnam signed the UNFCCC in June 1992 and ratified it on 19th November 1994. The Government of Vietnam signed the Kyoto Protocol in November 1998 and ratified it in November 2002 (Shaw, 2006; MoNRE, 2007). Therefore, the climate change response activities at national, regional and international levels should be linked with each other closely.



3.3. Climate change mainstreaming process

Recently, several international and national organizations have developed guidance on mainstreaming climate change into development strategies, planning processes and plans at national, sectoral, project and community levels. Although the mainstreaming processes of those organizations differ in terms of the number of steps, the approach and the main content of steps are comparatively similar to each other.

Table 3.1 compares the content of the steps in the mainstreaming processes of UNDP (2010), USAID (2007) and Care Vietnam (2009).

Table 3.1. Comparison amongst the mainstreaming processes of UNDP (2010), USAID (2007) and CARE Vietnam (2009)

UNDP (2010)	USAID (2007)	CARE Vietnam (2009)
Step 1: Improve awareness		

UNDP (2010)	USAID (2007)	CARE Vietnam (2009)
Step 2: Screen climate risk and vulnerability	Step 1: Screen vulnerability	Step 1: Screen the project activities impacted by climate change risks
Step 3: Assess detailed climate risks		Step 2: Identify the Climate Vulnerability and Adaptation (CVA) pathway
Step 4: Identify adaptation options	Step 2: Identify adaptation options	Step 3: Identify adaptation measures
Step 5: Select the priority adaptation measure	Step 3: Implement analysis on adaptation options Step 4: Select adaptation measures	Step 4: Prioritize adaptation measures to respond to the vulnerability identified in Step 1 Step 5: Select adaptation option(s) for implementation
Step 6: Implement the adaptation measures, including budget allocation	Step 5: Implement adaptation measures	Step 6: Implement adaptation measures
Step 7: Monitor and assess	Step 6: Assess the adaptation measures	Step 7: Assess adaptation measures and the CVA pathway

It can be seen that the approaches of mainstreaming processes of the above organizations are quite similar to each other and focus more on the integration of adaptation into strategies, planning processes and plans rather than that of mitigation. The number of steps in the mainstreaming process of those organizations fluctuates from 6 to 7 steps, of which some steps can be merged together, e.g. Step 4 and 5 of UNDP (2010). In order to facilitate the audience in the application of this Technical Guidance, the mainstreaming process needs to be concise and adequate in content. This Technical Guidance has developed a five-step process for mainstreaming climate change, including both adaptation and mitigation, into socio-

economic development strategies, planning processes and plans in Vietnam. The five steps of the mainstreaming process include the following:

- (i) Screen
- (ii) Select response measures
- (iii) Integrate climate change into strategies, planning processes and plans
- (iv) Implement the climate change-integrated strategies, planning processes and plans
- (v) Monitor and assess.

The five steps above are illustrated in Figure 3.1. To avoid the confusion with the steps of the strategies, planning and plan-making processes, the Technical Guidance name the five steps of the mainstreaming process Step T1, Step T2, Step T3, Step T4 and Step T5.

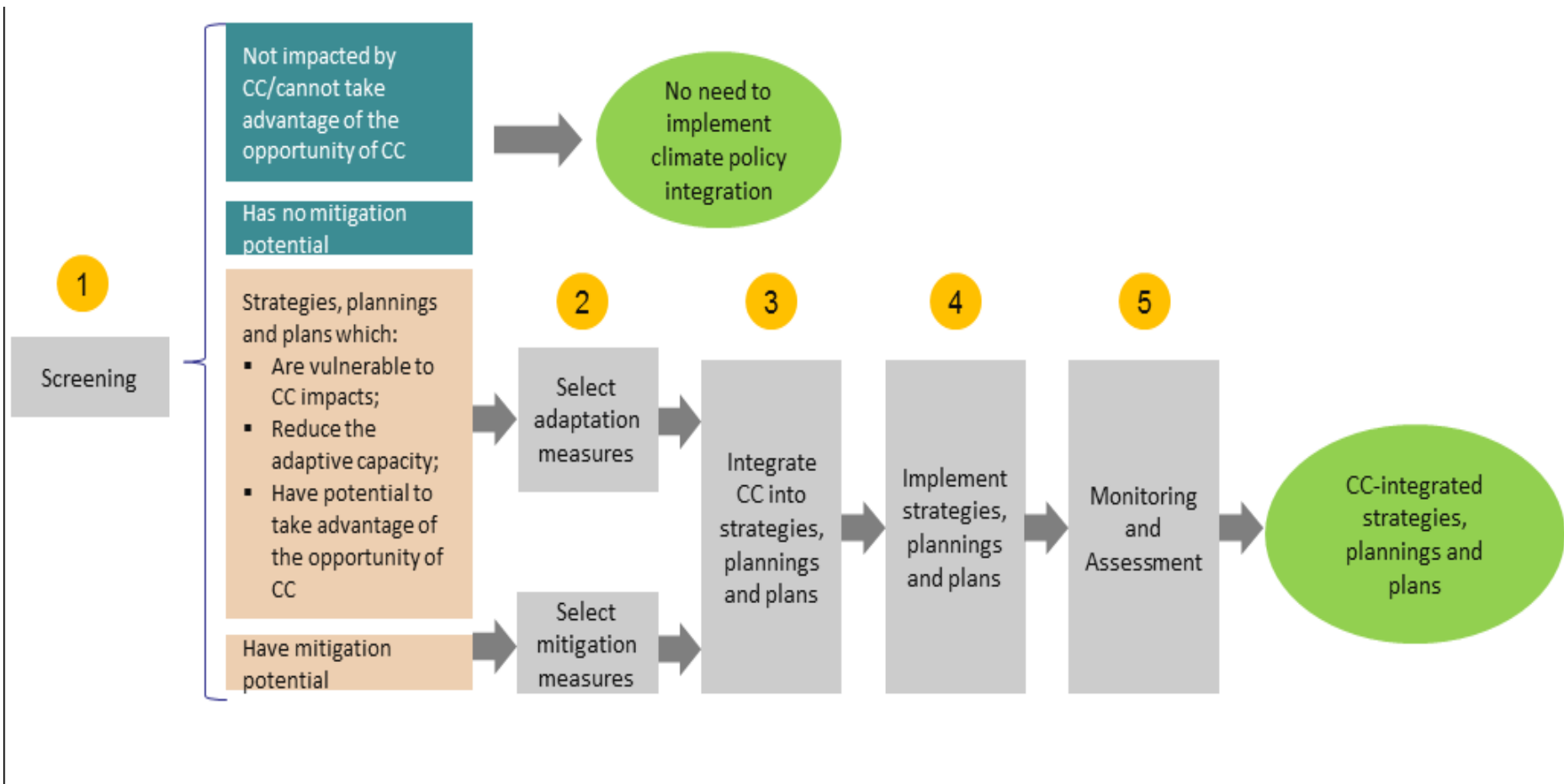


Figure 3.1. Five-step process of mainstreaming climate change into strategies, planning processes and plans

Step T1: Screen

The first step is to assess the relationship between the socio-economic strategies, planning processes and plans with climate change. The main objective of this step is to assess whether or not it is necessary to integrate climate change into development strategies, planning processes and plans. There are two groups of questions in Step T1, including:

Group 1: *Whether or not that region/sector is vulnerable to climate change? Whether or not the socio-economic development activities can reduce the adaptive capacity and/or miss the opportunities brought by climate change?*

In order to answer the questions in Group 1, we need to rely on the MoNRE scenarios for climate change and sea level rise for Vietnam and the assessment results of climate change impacts on sectors/regions mentioned in those strategies, planning processes and plans.



The objective of this step is to rapidly screen (assess) the relationship between climate change and the implementation of the development strategies, planning processes and plans. The assessment can be implemented in different ways. For each sector, it is necessary to identify the assessment criteria, the potential damage and the adaptive capacity of each sector. Usually, the assessment is implemented based

on the assessment criteria. Table 3.2 illustrates an example of the assessment of the relationship between climate change and several targets of economic development, culture, society and environment in the draft Strategy on Socio-economic Development for the Period of 2011 – 2020 for Vietnam.

Table 3.2. The relationship between climate change and key targets in the draft Strategy on Socio-economic Development over 2011 - 2020

Development targets	How can climate change affect the development targets?	Which is the most vulnerable region?	Which agency will be involved in the next step?
<p>Economic targets</p> <p><i>For example:</i></p> <p>(i) Agriculture will be modernized and sustainably and effectively developed, producing more high added-value products</p> <p>(ii)...</p>	<ul style="list-style-type: none"> ▪ The precipitation patterns can affect agricultural production and the quantity and quality of the agricultural products ▪ Higher temperature can affect crop productivity 	<p>The Mekong River Delta</p>	<p>The Ministry of Agricultural and Rural Development</p>
<p>2. The target for culture and society</p> <p><i>For example:</i></p> <p>(i) By 2020, the average life expectancy is 75; the social welfare and health care for the</p>	<ul style="list-style-type: none"> ▪ The change in temperature and precipitation can cause temperature-related diseases, e.g. high fever, due to extremely high temperature; infectious diseases and diseases due to environmental pollution ▪ Extreme events such as storm, flood and tropical depression can cause danger to human life, infrastructure and medical 	<p>Coastal areas</p> <p>The</p>	<p>The Ministry of Health</p> <p>The Ministry of</p>

Development targets	How can climate change affect the development targets?	Which is the most vulnerable region?	Which agency will be involved in the next step?
community is ensured	devices	Mekong River Delta	Agricultural and Rural Development
(ii) The rate of poor households will be reduced by 2 – 3% per year	<ul style="list-style-type: none"> ▪ Low-income people usually work in climate-sensitive sectors such as agriculture, forestry and aquaculture ▪ Climate change increases the risk of disease and hence increases cost for treatment, especially for poor people 	The Mekong River Delta	Ministry of Labor, Invalids and Social Affairs
<p>3. Target for environmental protection</p> <p><i>For example:</i></p> <p>By 2020, the forestry coverage will be increased up to 45%</p>	<ul style="list-style-type: none"> ▪ Higher temperature will increase the evaporation rate, leading to water scarcity in forestry and increasing the frequency and damage of forest fire, which facilitates the growth of harmful species; ▪ Precipitation in the dry season decreases, leading to a higher risk of forest fire. In contrast, higher precipitation in the rainy season causes land erosion and a reduction in sustainability of ground vegetables from the forest ▪ Sea level rise and natural hazards will impact directly wetlands in the coastal areas 	Natural forest, the protected area and U Minh wetland	Ministry of Agricultural and Rural Development
(ii)...			

Group 2: Whether or not the region/sector has mitigation potential?

In addition to the assessment of climate change impacts on the region/sector, it is necessary to assess the mitigation potential of several relevant sectors, e.g. energy, transport, Land Use, Land-Use Change and Forestry (LULUCF), industry and agriculture. In order to screen rapidly the relationship between climate change mitigation within each region/sector, it is recommended to rely on the national and sectoral GHG inventories, which have been published, e. g. the Second National Communication of Vietnam to the UNFCCC (2010) and other related documents. However, Vietnam does not belong to Annex-I Parties as regulated by the UNFCCC and hence is not bound to any emissions reduction target; therefore, the implementation of mitigation activities for Vietnam are based on the following principles:

- The level of mitigation is voluntary, implemented within the capacity of the sector and subject and the degree of financial support from other countries/international organizations;
- Mitigation activities also bring economic benefits and development opportunities for that sector.

For the sector, which has high mitigation potential, e.g. energy, the mitigation targets and activities should be integrated into the development target of the sector and the activities to reach the set mitigation targets based on voluntary basis and bring economic benefits to the sector.

If all the answers for the questions in Group 1 and 2 are “No”, it is not necessary to integrate climate change into strategies, planning processes and plans. If one of the answers is “Yes”, we continue to implement Step T2 which is to select response measures.

Step T2. Select response measures

The objective of Step T2 is to select the response measures to be integrated in the socio-economic development strategies, planning processes and plans at national, sectoral and local levels. Depending on the contents, which need to be integrated, i.e. mitigation or adaptation as identified in Step T1; Step T2 will select the adaptation and/or mitigation measures.

Step T2a. Select adaptation measures

The process of selecting adaptation measures includes two steps: (i) Identify adaptation measures; and (ii) Select adaptation measures. The specific content of each step is illustrated as follows:

(i) Identify adaptation measures

This step includes the identification of an adaptation measures list. The objective of this step is to identify a long rough list of adaptation measures without considering feasibility, cost and other boundary factors. The analysis and assessment of the adaptation measures will be implemented in the next step. In this step, it is necessary to consult a lot of experts to develop a complete list of adaptation measures (OECD, 2009).

The implementation period for adaptation measures should also be considered, i.e. reactive measures and anticipatory measures. Reactive measures are implemented in order to cope with the current impacts of climate change, e.g. the increases of frequency and intensity of extreme events. Anticipatory measures are implemented to respond to climate change in the future. Due to the uncertainty of climate change in the future, it seems that the reactive measures are prioritized. However, for long-term decisions, e.g. the construction of infrastructure or development plans, it is essential to apply anticipatory measures to avoid the dramatic impacts of climatic extreme events.

The identification of adaptation measures can be implemented by consulting experts and filling the necessary data in a matrix box, for example, such Table 3.3.

Table 3.3. The matrix box to identify adaptation measures for several sectors

System	Climate change impacts	Adaptation measures	Related agencies
Water resources	<ul style="list-style-type: none"> • Changing the volume and quality of water • Altering the annual flow • Increasing frequency of extreme floods and the flooding situation 	<ul style="list-style-type: none"> • Construct and improve the irrigation systems • Improve the sea dyke system • Identify the flood risk • Develop reservoir and hydropower stations 	The Ministry of Natural Resources and Environment and related agencies
Agriculture	<ul style="list-style-type: none"> • Reducing the cultivation area • Altering the crop productivity • Potential threat to 	<ul style="list-style-type: none"> • Improve the irrigation system for agriculture • Conduct in-depth research on agricultural climate • Develop a flexible 	The Ministry of Agricultural and Rural Development

System	Climate change impacts	Adaptation measures	Related agencies
	national food security <ul style="list-style-type: none"> • Creating favorable conditions for the growth of harmful insects 	plantation model	
Forestry	<ul style="list-style-type: none"> • Altering the forest coverage 	<ul style="list-style-type: none"> • Enhance the afforestation/reforestation (using indigenous plants) • Protect the natural forest 	The Ministry of Agricultural and Rural Development
Human health	<ul style="list-style-type: none"> • Changing the living environment • Increasing infectious diseases 	<ul style="list-style-type: none"> • Develop a national plan for controlling the infectious diseases • Improve the quality of medical services • Improve public awareness on climate change 	Ministry of Health
Energy and transport	<ul style="list-style-type: none"> • Increase of cooling demand • Altering the output of hydropower electricity • Causing damage to the current infrastructure (electricity generation infrastructure, ports and transport) 	<ul style="list-style-type: none"> • Improve energy efficiency • Integrate climate change into the planning of infrastructure • Upgrade infrastructure in vulnerable regions 	The Ministry of Industry and Trade and the relevant Ministries/sectors

Source: Synthesized from H.H. Dang et al., 2003

(ii) Select adaptation measures

After identifying a list of adaptation measures in Step (i), it is necessary to select the adaptation measures based on certain criteria. It is suggested that the criteria of the OECD are referred to as in Box 3.1.

Box 3.1. Criteria to select adaptation measures

The Policy Guidance on Integrating Climate Change Adaptation into Development Co-operation of OECD (2009) proposed the following criteria to select adaptation measures:

- **Effectiveness** – This criterion addresses the extent to which the adaptation policy reduces vulnerability and provides other benefits. Essentially, it compares vulnerability without adaptation to vulnerability with adaptation. This criterion can consider the effectiveness of adaptation measures under different scenarios of climate change and socio-economic development.
- **Cost** – This criterion describes the relative cost of an adaptation measures. It also considers the investment cost as well as the long-term cost, e.g. the operation and maintenance cost, reconstruction cost, etc. The economic and non-economic cost as well as the damage avoided owing to the implementation of adaptation measures should also be considered.
- **Feasibility** – Do the necessary legal, institutional frameworks, administrative, financial, technical, and other resources exist and are they available for use on this policy option? Are the adaptation measures prioritized in the current context?
- Other criteria can include the political and social acceptance, biodiversity friendliness and the speed of implementation, “non-regret” potential, avoiding negative impacts on other development targets and aligning with requirement for financial support or other criteria and aligning with the policy priority.
- Other relevant questions include: *“What will happen if that adaptation measure is not implemented?”*; *“If the adaptation measure was implemented, would it be necessary to receive financial and technical support to enhance the effectiveness of that adaptation measure?”*

Hint: Score “++” for an effective adaptation measure and “-” for an adaptation measure with high cost.

Use the criteria in Box 3.1 to select the adaptation measures according to the following steps:

- List all the adaptation measures identified in Step (i) into Column A of Table 3.4;
- In Column B, C, D, E and F:
 - Discuss the selection criteria (e.g. the criteria of the policy guidance of OECD (2009) in Box 3.1 and additional criteria for specific objectives, sectors and regions).
 - Consider each adaptation measure in Column A based on the criteria and score the adaptation measures by using ++/+/0/-/--.

- In Column G, assess the adaptation measures: if there are too many adaptation measures having the same score, it is suggested to add more criteria or to change the weight of the criteria (e.g. Criterion 3 of “Feasibility” x 2).
- Carefully consider to assess whether or not the chosen adaptation measure is appropriate.
 - *Whether or not the adaptation measures can address the main climate risk?*
 - *Whether or not the adaptation measures are effective if being implemented simultaneously?*
 - *Whether or not the adaptation measures overlap or support each other?*

Table 3.4. Criteria to select adaptation measures

A	B	C	D	E	F	G
Adaptation options	Criterion 1. Effectiveness	Criterion 2. Cost	Criterion 3. Feasibility	Criterion 4	Criterion 5	Overall evaluation
<i>For example:</i> Raise water prices and information regarding water-saving irrigation techniques	0 (This measure needs to be accompanied by other measures to increase overall water volume)	+ (Price increase compensates costs of information campaign)	0 Technology is there, but farmers’ union has strong influence on policies	++ (Perhaps “no-regret”)	N/A	0/+
...						
...						

Source: GIZ (2009)

Step T2b. Select mitigation measures

The process of selecting mitigation measures includes two steps: (i) Identify mitigation measures; and (ii) Select mitigation measures. The specific content of each step is illustrated as follows:

(i) Identify mitigation measures

This step includes the identification of lists of mitigation measures for different sectors/fields. The objective of this step is to identify a rough list of mitigation measures without considering feasibility, cost and other boundary factors. The

analysis and assessment of the mitigation measures will be implemented in the next step. The identification of mitigation measures for sectors can be based on references, e.g. the Second National Communication of Vietnam to the UNFCCC.

According to the Second National Communication of Vietnam to the UNFCCC (2010), the three main sectors which have potential for greenhouse gas (GHG) mitigation in Vietnam are **agriculture, energy** and **LULUCF**.

The **Long-range Energy Alternatives Planning System (LEAP) model** was used for developing Business as Usual (BAU) line and mitigation activities for the energy sector.

The **Comprehensive Mitigation Analysis Process (COMPAP) model** was used for the LULUCF sector. In agriculture sector, GHG mitigation options were assessed by using statistical tools and methodologies in accordance with Dr. J. Sathaye's guidebook on GHG mitigation assessment. Twenty-eight mitigation options have been developed and assessed for GHG sources and sink, including 15 options for the energy sector (including transportation), five for the agriculture sector and eight for the LULUCF sector. The total mitigation potential for the 28 options is 3,270.7 million tCO₂e, to which energy contributes 192.2 million tCO₂e, agriculture 56.5 million tCO₂e and LULUCF 3,022 million tCO₂e. Mitigation potential uncertainty levels are placed in order of increasing magnitudes, from energy to agriculture to LULUCF. GHG abatement and carbon sink expansion costs vary quite drastically. Costs in the energy sector range from US\$-24.9/tCO₂ to US\$23.8/tCO₂, in the agriculture sector from US\$-10.9/tCO₂ to US\$9.7/tCO₂, and in the LULUCF sector, from US\$0.4/tCO₂ to US\$1.4/tCO₂.

(ii) Select mitigation measures

After identifying a list of mitigation measures in Step (i), it is necessary to select a mitigation measure based on the following criteria:

- **Mitigation potential:** is the potential reduction in amount of GHG if the selected mitigation measure is implemented. It is essential to consider the potential GHG reduction amounts under different development scenarios.
- **Cost** – This criterion describes the relative cost of a mitigation measure. It also considers the investment cost as well as the long-term cost, e.g. the operation and maintenance cost, reconstruction cost, etc. The economic and non-economic cost as well as the damage avoided owing to the implementation of mitigation measures, should also be considered.
- **Feasibility** –Do the necessary legal, institutional frameworks, administrative, financial, technical and other resources exist, and are they available for use on

this policy option? Is the mitigation measure prioritized in the current context?

- Other criteria can include the political and social acceptance, biodiversity ‘friendliness’, the speed of implementation, “non-regret” potential and that there are no negative impacts on other development targets, alignment with the requirements for financial support or other criteria and alignment with the policy priority.
- Other relevant questions include: *“What will happen if that mitigation measure is not implemented?”*; *“If the mitigation measure was already implemented, would it be necessary to receive any financial assistance to enhance the effectiveness of that mitigation measure?”*.

Use the criteria in Table 3.5 to select the mitigation measure according to the following steps:

- List all the mitigation measures identified in Step (i) into Column A of Table 3.5;
- In Column B, C, D, E and F:
 - Discuss the selection criteria as identified above and additional criteria for specific sectors and regions;
 - Consider each mitigation measure in Column A based on the criteria and score the mitigation measure by using ++/+/0/-/--.
- In Column G, assess the mitigation measures: if there are too many mitigation measures having the same score, it is suggested to add more criteria or change the weight of the criteria (e.g. Criterion 3 of “Feasibility” x 2).
- Carefully consider to assess whether or not the chosen mitigation measure is appropriate.
 - *Whether or not the mitigation measures can reduce the GHG?*
 - *Whether or not the mitigation measures are effective if being implemented simultaneously?*
 - *Whether or not the mitigation measures overlap or support each other?*
 - *Whether or not the mitigation measures are harmonious with the adaptation measures implemented in the same sector?*

Table 3.5. Criteria to select mitigation measures

A	B	C	D	E	F	G
Mitigation options	Criterion 1. Effectiveness	Criterion 2. Cost	Criterion 3. Feasibility	Criterion 4	Criterion 5	Overall evaluation
For example: Raise electricity prices and information regarding electricity-saving techniques	+	+(Price increase compensates costs of information campaign)	0 Technology is there but the awareness of the community should be enhanced	++ (Perhaps “no-regret”)	No need Criterion 5	0/+
...						
...						

Source: GIZ (2009)

Note: The sector which has the highest mitigation potential and also requires adaptation measures (e.g. agriculture) should select mitigation measures in alignment with adaptation measures.

Step T3: Integrate climate change into the document of strategies, planning processes and plans

After identifying suitable adaptation and mitigation measures, these measures need to be integrated into the documents of socio-economic development strategies, planning processes and plans at national, sectoral and local levels. The integration of climate change into the document of strategies, planning processes and plans is recommended to be based on three criteria as follows:

- The first criterion is the inclusion of climate change aims into the targets of the strategy, planning processes and plan. Some degree of “inclusion” is a prerequisite for climate policy integration. If climate change response is not considered as one of the target of development strategies, planning processes and plans, those strategies, planning processes and plans do not represent

climate policy integration; rather, it signifies policies with synergies for climate policy aims.

- The second criterion is *“the consistency of the integrated climate change aspects in relation to other aspects”*. When integrating climate change into policies, it is essential that different policy aims and instruments are consistent with each other; or as expressed by Lafferty and Hovden (2003), there should be *“a commitment to minimize contradictions”*. If this was done without any attempt to create a consistent whole, the integration would not be complete.
- The third criterion is *“weighting of the integrated climate change aspects with respect to other aspects”*. There are many other social aims and some of these are in conflict with the aims of mitigation and adaptation to climate change. Some conflicts can be resolved by creating ‘win-win’ options, while in other cases political choices have to be made.

The result of the mainstreaming process is that the documents of new/current socio-economic development strategies, planning processes and plans are integrated with climate change adaptation and/or mitigation measures.

Step T4: Implement climate change-integrated strategies, planning processes and plans

After climate change-integrated strategies, planning processes and plans are approved the responsible agency will implement the activities given in the strategy, planning processes and plan in order to reach the target. The implementation of socio-economic development strategies, planning processes and plans integrated with climate change can encounter a lot of difficulties. Policy-makers have to be aware of those difficulties so as to propose appropriate solutions. In Vietnam, the main difficulties include the following:

- Lack of close cooperation amongst Ministries and sectors during the processes of formulating strategies, planning processes and plans;
- The awareness and knowledge of policy-makers on climate change and/or climate policy integration remains limited;
- Climate policy integration requires additional resources and increasing capital investment, however the resources, especially funds, are limited and the benefits of climate policy integration can only be achieved in the long-term.

After each phase of the implementation of the strategies, planning processes and plans is done, the implementing agency has to make a report, which reviews finished

and unfinished activities, the difficulties in implementation and proposes corresponding solutions.

Step T5: Monitor and assess

After implementing the integrated strategies, planning processes and plans, it is necessary to monitor and assess implementation to identify weakness during the mainstreaming process and to propose appropriate adjustments, including:

- Assessing response measures: to identify the cost and benefit of each measure. It has to be ensured that the adaptation measures will contribute to reducing risks to climate change and mitigation measures will contribute to reducing GHG emissions. The response measures will have to be adjusted if they do not bring benefits as expected;
- Assessing the integration of climate change into documents (refer to Appendix);
- Assessing the process of implementation of climate change-integrated strategies, planning processes and plans (refer to Appendix).

The process of assessment includes the following steps:

- Identify assessment questions;
- Develop and complement an assessment plan: The assessment plan should clarify the roles and responsibilities of each agency in the assessment process. Particularly: *Who will implement, review, approve and present the result of the assessment? Which assessment methods and tools are used to address the assessment questions? What is the timeframe for the assessment?* The assessment plan should be embedded into the mainstreaming process to ensure sufficient human resources and finance to carry out the assessment.
- Implement the assessment: The assessment includes a number of individual analysis, which are designed for addressing questions for different specific groups.
- Demonstrate the assessment result: Presentation of the assessment result to the targeted audience is critical and hence the assessment plan should include the following activities:

Adjustments based on the assessment results

Based on the assessment results, adjustments are implemented if difficulties are identified in the mainstreaming process, which is illustrated in Figure 3.2.

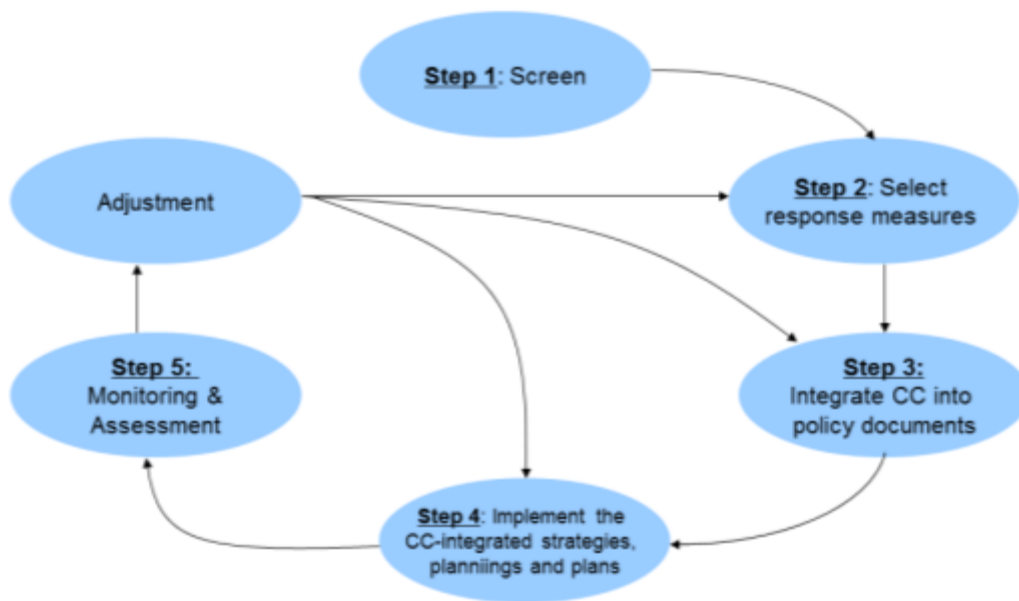


Figure 3.2. Adjust the steps in the mainstreaming process

The mainstreaming process is continuous and regularly adjusted:

- If the assessment result reflects that the response measure is not appropriate, Step T2 needs to be adjusted;
- If the assessment result reflects that the integration of climate change into the document of strategies, planning processes and plans is not appropriate, Step T3 needs to be adjusted;
- If the assessment result reflects that there remain a number of weaknesses in the implementation of strategies, planning processes and plans, Step T4 needs to be adjusted.

3.4. Tools supporting the mainstreaming process

The main tools that may be used to support the mainstreaming process are synthesized and illustrated in the Appendix. An example of using one tool is shown in Box 3.2 and 3.3.

Box 3.2. An example of using the GTZ ‘climate check’

Access the website: <http://www.gtz.de/climate-check> to read the content of the tool.

Click on the Button “Climate Proofing” on the left of the screen to follow the guidance steps.

The tool of Climate Proofing aims at reducing climate change risks to development programmes. This tool includes two steps:

- Step 1: Rapid screening: Implement rapid screening and overview the climate risks. It is not necessary to integrate climate change into the programmes, which may have least risks to climate change. Other programmes will continue to be screened in Step 2;
- Step 2: Detail assessment on the programme. The risk assessment is implemented during the process of proposing the programme. The objective of this step is to:
 - Identify and analyze the climate risks to development programmes at all levels: the output of the programme and the impacts of the programme’s activity in reality;
 - Propose and prioritize the potential adaptation measures in order to enhance the flexibility of the programme;
 - Enhance awareness and encourage the development practitioner to integrate climate change response measures;
 - Guide the monitoring of adaptation measures;

Click on the Button “Emission Saving” under “Approach” on the left hand side of the screen to access the content of “Emission Saving” tool.

This tool aims at prioritizing the mitigation potential of the programmes and includes two steps:

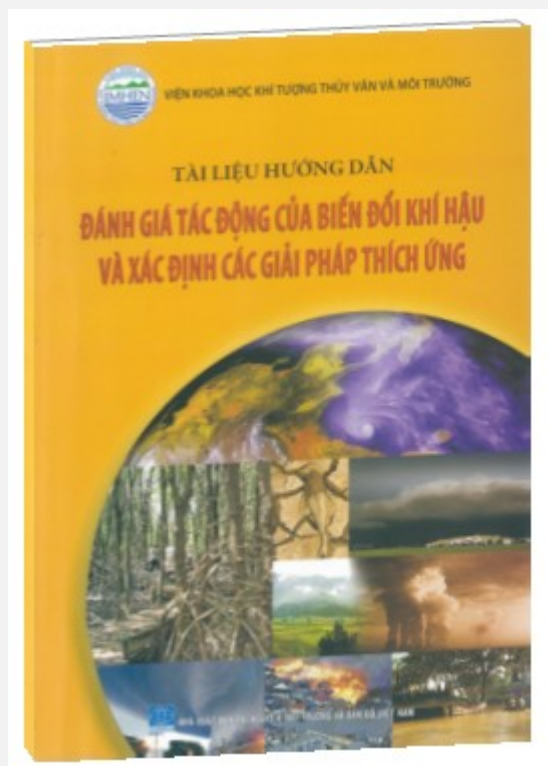
- Step 1: Rapid screening: Implement the rapid screening and overview of the programme, which has GHG mitigation potential. It is not necessary to integrate climate change into the programmes which has low mitigation potential. Other programmes will be screened in Step 2;
- Step 2: Detailed assessment of the programme: The detailed assessment is implemented for the projects belonging to the sectors which have significant mitigation potential. The objectives of this step are:
 - Developing different low-carbon approaches to achieve the programme objectives;

- Analyzing and comparing the GHG emission pathway of the approaches supported by the programme, implementing the cost-benefit analysis for different projects and prioritizing those projects;
- Improving the awareness and encouraging the development practitioner to integrate climate change mitigation into the programme to improve the contribution of the programme to mitigation;
- Providing guidance on monitoring mitigation measures.

Box 3.3. An example of using the tool of “Guidance on the assessment of climate change impacts and identification of adaptation measures”

The Technical Guidance provides a seven-step process of climate impact assessment as the following:

- Step 1: Identify climate change and sea level rise scenarios
- Step 2: Identify the development scenarios
- Step 3: Identify priority sectors and objects and scope of the assessment
- Step 4: Select and analyze tools to assess the impact of climate change
- Step 5: Evaluate impacts of climate change, sea level rise according to scenarios
 - Assess the impacts on the natural environment
 - Assess the impacts on the socio-economy
- Step 6: Assess the level of risks and damage due to the impact of climate change
- Step 7: Evaluate the ability to adapt to the risks and vulnerability.



CHAPTER 4 GUIDANCE ON INTEGRATING CLIMATE CHANGE INTO DEVELOPMENT PLANS

Although the legal regulations for the development of strategies, planning processes and plans at all levels can alter over time, the main content of the steps of the process of formulating strategies, planning processes and plans remains the same. Therefore, this chapter will use the processes as regulated in relevant decrees as the basis for the guidance on merging the steps of the climate change mainstreaming process into the process of developing strategies, planning processes and plans in Vietnam.

This chapter will provide guidance on how to apply the five-step mainstreaming process into existing and new strategies, planning processes and plans.

4.1. For existing strategies, planning processes and plans

It is necessary to review the existing strategies, planning processes and plans (plans in short) to identify the relationship between climate change and the implementation of those plans and to propose adjustment and integration of climate change into the policy documents if necessary.

The five steps of the mainstreaming process will be directly integrated into the process of adjustment and implementation of the existing plans. The method of integrating the two processes is illustrated in Table 4.1.

Table 4.1. Merge the mainstreaming process into the process of adjustment and implementation of the socio-economic development strategies, planning processes and plans

The process of review, adjustment and implementation of the existing strategies, planning processes and plans (policy-making process in short)	The mainstreaming process
Step 1: Review the existing strategies, planning processes and plans	Step T1: Screen
	Step T2: Select the response measures
Step 2: Make a report on the review, adjustment and supplementary action	Step T3: Integrate climate change issues into policy documents

The process of review, adjustment and implementation of the existing strategies, planning processes and plans (policy-making process in short)	The mainstreaming process
Step 3: Implement the adjusted strategies, planning processes and plans	Step T4: Implement the climate change-integrated strategies, planning processes and plans
Step 4: Evaluate the implementation of the adjusted strategies, planning processes and plans	Step T5: Monitor and assess

In order to integrate climate change into the existing strategies, planning processes and plans, policy-makers need to merge Step T1 of the mainstreaming process with Step 1 of the policy-making process, which means: (i) Assess whether or not the region/sector is vulnerable to climate change or becoming more vulnerability due to climate change; (ii) Review the contents of the existing strategies, planning processes and plans to identify whether or not those plans miss the opportunities brought by climate change or mitigation options. If yes, it is necessary to adjust the contents of the development plans to integrate the response measures as identified and selected in **Step T2**.

Step T3 of the mainstreaming process is merged with Step 2 of the policy-making process, which is to adjust and supplement socio-economic strategies, planning processes and plans. Climate change response activities have to be appropriately embedded in the adjusted strategies, planning processes and plans.

After adjusting and supplementing strategies, planning processes and plans, Step 3 and 4 of the policy-making process are merged with Step T4 and Step T5, respectively. The implementation and assessment of adjusted strategies, planning processes and plans is the basis to identify if the strategies, planning processes and plans still need to be adjusted and supplemented.

4.2. For new strategies, planning processes and plans

In terms of new socio-economic development strategies, planning processes and plans, it is necessary to integrate climate change in the period of developing the Guidance framework for policy-making and in each stage of: (i) Formulation, (ii) Verification, (iii) Approval, (iv) Implementation and (v) Monitoring and Assessment.

The method of integrating climate change into the above stages is presented as the following:

4.2.1. Merge the mainstreaming process with the process of formulating socio-economic development strategies, planning processes and plans

Based on the guidance of Decree No.92/2006/ND-CP, dated 7th September 2006 of the Prime Minister on the formulation, approval and management of the socio-economic development master plan and Decree 04/2008/ND-CP, dated 11th November 2008, which includes some adjustments to several provisions of Decree No.92/2006/ND-CP, the mainstreaming process is merged with the policy-making process at the national level (Figure 4.1), the sectoral level (Figure 4.2) and at the provincial/city level (Figure 4.3), as shown in the following diagrams:

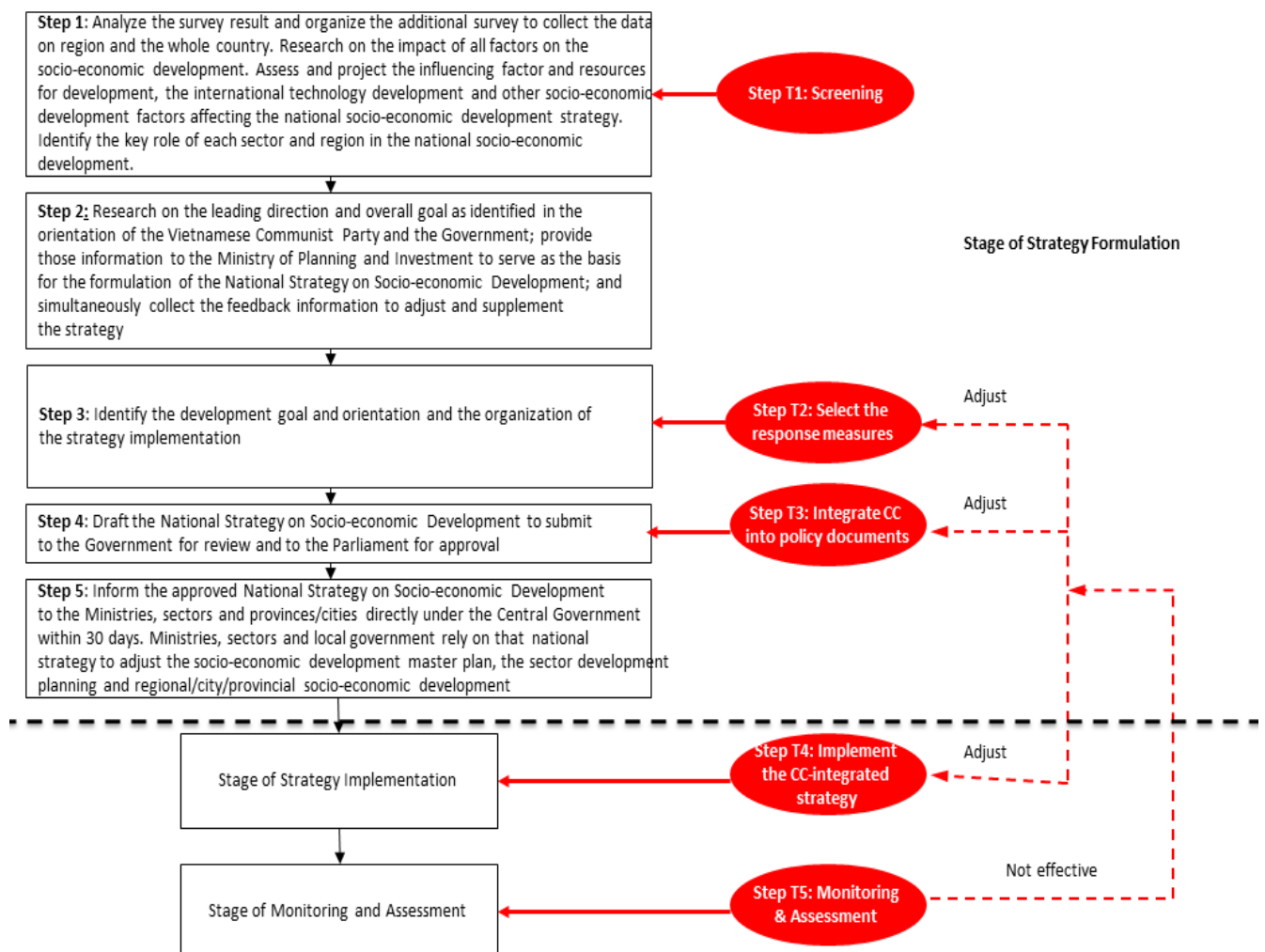


Figure 4.1. Merging the mainstreaming process with the policy-making process at the national level

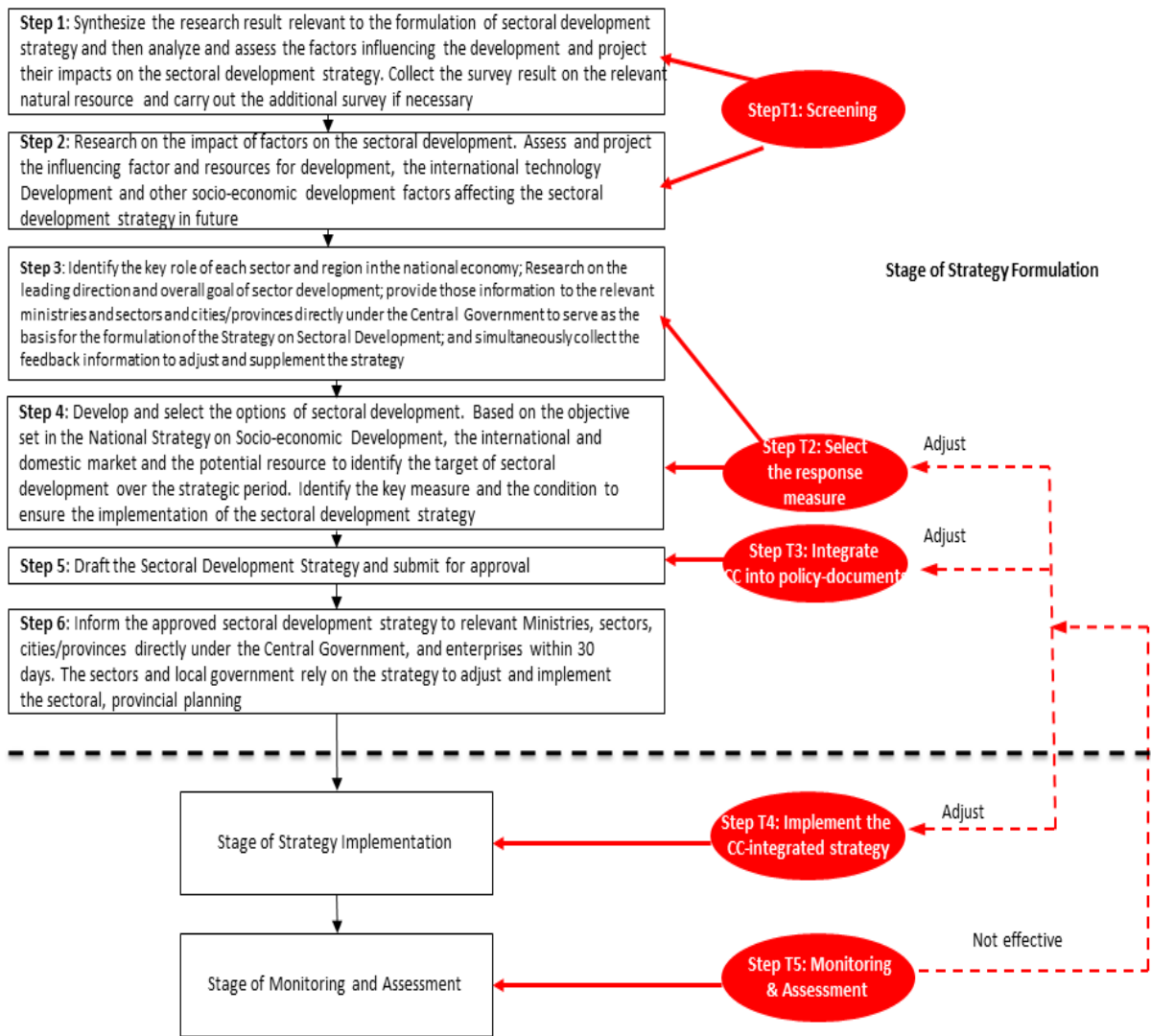


Figure 4.2. Merging the mainstreaming process with the policy-making process at the sectoral level

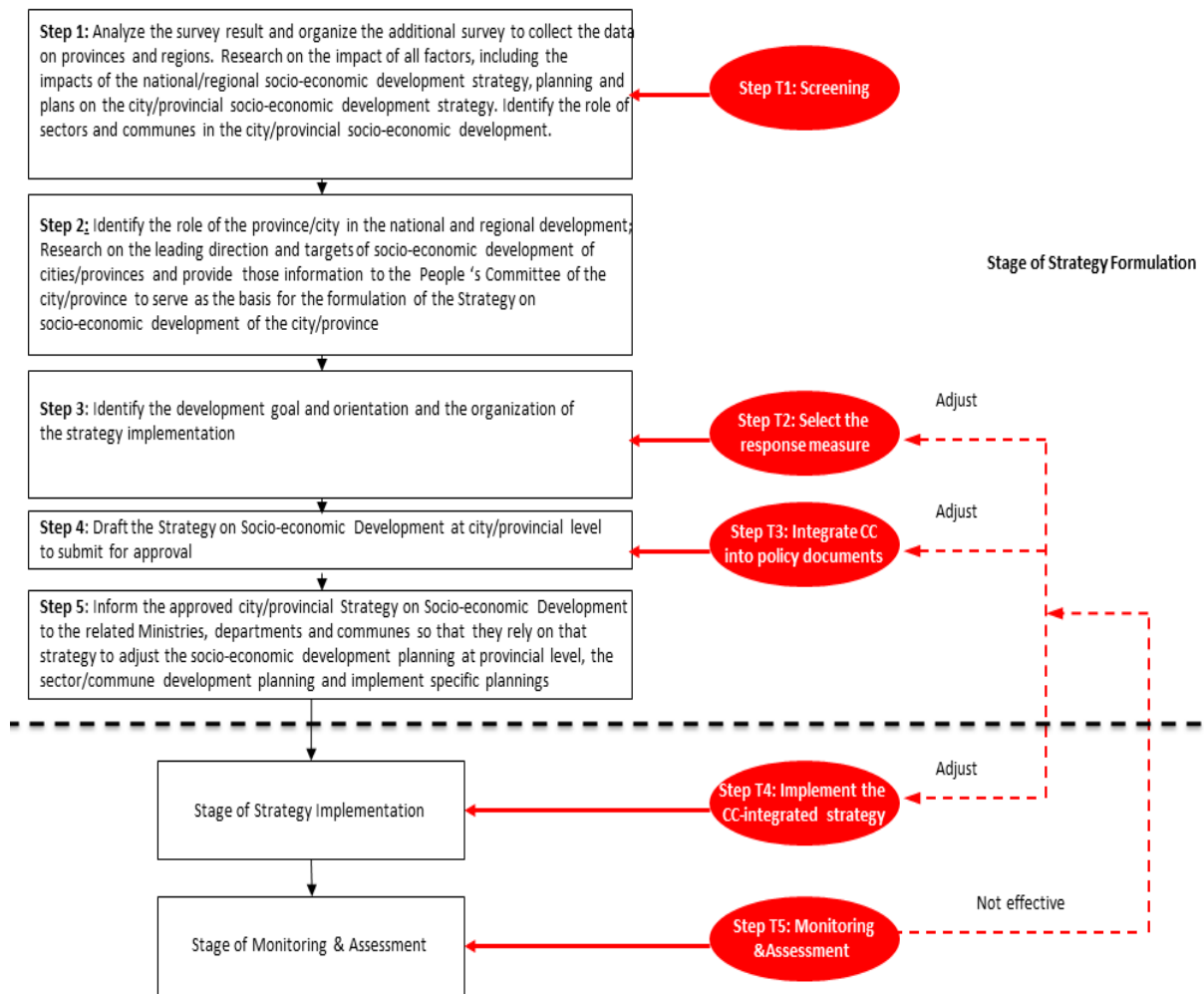


Figure 4.3. Merging the mainstreaming process with the policy-making process at the city/provincial level

4.2.2. Guidance on merging the mainstreaming process into the policy-making process

In order to integrate climate change into strategies, planning processes and plans at the national, sectoral and city/provincial levels, the following steps should be followed:

Step 1: Merge **Step T1** (Screening) with **Step 1** of the process of formulating the national/city/provincial socio-economic development strategy, planning processes and plans with Step 1 and 2 of the process of formulating the sectoral development strategy, planning processes and plans. The main content of this step is to collect the data and research on the factors affecting socio-economic development and to collect data related to climate trends and climate change scenarios and then assess the positive and negative impacts of climate change on the development strategies, planning processes and plans. While researching the impacts of factors on

development, it is necessary to assess and project the resources for development, the international technology advance factors and other socio-economic development factors affecting the development strategies, planning processes and plans in the future. It is necessary to rely on the climate change scenarios to assess climate change impacts and hence to propose the appropriate orientation for development.



For the region/sector vulnerable to climate change such as the coastal areas and agriculture, climate impact assessment should be prioritized to propose appropriate adaptation measures in order to integrate them into the development strategy, planning processes and plans of that region/sector.

Along with the climate impact assessment to identify and to mainstream adaptation measures, the assessment of the mitigation potential of several relevant sectors should be implemented, e.g. energy, transport, LULUCF and agriculture. However, Vietnam does not belong to Annex-I Parties as regulated by the UNFCCC and hence is not binding to any emissions reduction targets; therefore, the implementation of mitigation activities of Vietnam are based on the following principles:

- The level of mitigation is voluntary, implemented within the capacity of the sector and subject to the degree of financial support from other countries/international organizations;

- The mitigation activities also bring economic benefit and development opportunities for that sector.

For the sectors which have high mitigation potential, e.g. energy, the mitigation targets and activities need to be integrated into the development target of the sector and the activities to reach the mitigation target are based on voluntary basis and bring economic benefits to the sector.

Step 2: Merge **Step T2** (Select response measures) with **Step 3** of the process of formulating national/city/provincial socio-economic development strategies, planning processes and plans and with Step 3 and Step 4 of the process of formulating the sectoral development strategy, planning processes and plans, respectively. The content of this step is that during the process of identification of the development goals and perspectives, it is necessary to identify the targets for adaptation and mitigation so as to assess later whether or not the implementation of adaptation and mitigation activities reaches those targets. Based on the adaptation and mitigation targets, we select the adaptation and mitigation measures based on the criteria mentioned in Step T2 in Section 3.3.

Step 3: Merge **Step T3** of the mainstreaming process with **Step 4** of the process of formulating the national/city/provincial socio-economic development strategy, planning processes and plans and with Step 5 of the process of formulating the sectoral development strategy, planning and plan. The objective of this step is to ensure that climate policy integration is reflected in the documentation of the strategy, planning processes and plans. Climate change responses should be included in the section of “Development perspectives” and ‘Overall goal’. In the section of “Specific objectives” of the strategy, planning processes and plans, in addition to the target of economic development, society and environmental protection, the targets and timeframe of adaptation and mitigation should also be included. Adaptation and (voluntary) mitigation measures should be integrated with implementation measures of the strategy, planning processes and plans.

After approval, the socio-economic development strategy, planning processes and plans integrated with climate change is informed to Ministries, sectors and cities/provinces within a certain period decided by the relevant authority. Ministries, sectors and local government will rely on the strategy to adjust their socio-economic development strategy, planning processes and plans at the regional, provincial and city levels (Step 5 of the process of formulating strategies, planning processes and plans).

Step 4: Implement the strategy, planning processes and plans integrated with climate change (merged with **Step T4**).

After the climate change-integrated strategies, planning processes and plans are approved, the responsible and relevant agencies will cooperate with each other to implement the activities in the strategy, planning processes and plans to achieve the targets. During the implementation of the climate change-integrated strategies, planning processes and plans, the Ministry of Natural Resources and Environment at the national level and the Departments of Natural Resources and Environment at city/provincial levels play a critical role in supporting other sectors/fields to implement climate change response measures.

Step 5: Monitor and Assess

In the stage of monitoring and assessment of climate change-integrated strategies, planning processes and plans, in addition to assessing the development activities, it is necessary to assess the implementation of the adaptation and mitigation measures based on the criteria. Based on the assessment results, climate change response measures and assessment criteria will be adjusted appropriately so that they can suit reality and bring the highest effectiveness in climate change response.

The objectives of the assessment on mainstreaming effectiveness are to:

- Confirm how climate policy integration has contributed to the implementation of socio-economic development strategies, planning processes and plans and the sustainable development of sectors;
- Identify the weaknesses in terms of content and methods during the process of climate policy integration.

A number of issues need to be considered during the stage of monitoring and assessment as follows:

- If the degree to which the disaster and climate change affects the environment will increase or decrease after implementing climate policy integration? For example: For an afforestation and upstream forests protection plan: *What is the percentage of implementation of the plan for a forest plantation and protection shield for waves along the coastline and rivers and the plan on tree plantation and protection along the river and coastline? To what extent can forest plantation and tree plantation reduce the risk of disaster and climate change?*



- *How many legal documents, mechanisms and policies related to disaster prevention and mitigation and climate change response are adjusted and supplemented?*
- *How many legal documents, mechanisms and policies related to disaster risk management and climate change response are adjusted and supplemented? How effective is the adjustment and supplementary action of the legislation documents and policy mechanisms? Has the awareness of the community on disaster risk management and climate change response increased?*
- *How many planning processes, programmes and projects are integrated and not integrated with the contents of climate change and disaster risk management?*

The assessment of climate policy integration is based on the targets set in the document of strategies, planning processes and plans, for example:

- The numbers of targets for socio-economic development, mitigation and adaptation which are set in the strategy, planning processes and plans;
- The resources mobilized for the investment in adaptation/mitigation;
- What is the percentage that climate change response activities can meet the demand?

- What is the level of increase/decrease of ratio between the damage due to climate change and the national/sectoral/city/provincial GDP before and after climate policy integration is implemented?
- Climate change impacts on social issues such as: the mental shock level of the family members of those killed, injured or lost due to disaster; the issues of accommodation of families damaged by a disaster; and the level of poverty.

4.3. Responsible agencies

Integrating climate change into development strategies, planning processes and plans is the responsibility of the state authority at all levels and according to the function of specific agencies. The following proposed responsibilities are for reference only:

- The Ministry of Planning and Investment (MPI) and the Ministry of Natural Resources and Environment (MoNRE) play a vital role in guiding the implementation of climate policy integration; other relevant Ministries and sectors have responsibility to cooperate with MPI and MoNRE and to propose adjustments and supplementation during the mainstreaming process;
- At the sectoral level: Ministries take the main responsibilities for integrating climate change into their strategies, planning processes and plans with collaboration from other Ministries/agencies;
- At the city/provincial level: The People's Committee of the city/province takes the main responsibility for climate policy integration. The Department of Natural Resources and Environment is responsible for supporting the People's Committee in examining the content of adaptation and/or mitigation integrated by other Departments. During the examination, if the Department of Natural Resources and Environment identifies contents which need adjustment and supplementation, it has to consult the People's Committee so that the People's Committee can lead the relevant agencies in the implementation of the adjustment. The Department of Planning and Investment and the Department of Natural Resources and Environment will cooperate with other departments and districts to integrate multi-sectoral/multi-regional adaptation and/or mitigation activities. The Department of Planning and Investment is in charge of synthesizing the integrated contents of other departments, sectors and local agencies and integrating them into the provincial socio-economic development strategy, planning processes and plans. Simultaneously, the Department of Planning of Investment also cooperates with the Department of Natural Resources and Environment and other departments/agencies to conduct a final

review on the draft city/provincial socio-economic development strategy, planning processes and plans to ensure that the drafts can meet the demand for harmony amongst issues related to economic growth, society and environment/climate change before being submitted to the People's Committee for approval.

The method of merging the five-step mainstreaming process with the process of formulating and implementing development strategies, planning processes and plans is illustrated in Table 4.2.

Box 4.1 introduces an example of using the Strategic Environmental Assessment to integrate climate change into land use planning and hydropower development planning.

Table 4.2. Merging the mainstreaming process into the process of formulation, implementation, monitoring and assessment of socio-economic development strategies, planning processes and plans

The process of formulation, implementation, monitoring and assessment of the strategy, planning and plan (current)	The mainstreaming process	Reasons	The process of formulation, implementation, monitoring and assessment of the strategy, planning and plan (adjusted)
<p>Step 1: Analyze the available surveys and organize an additional survey and field trips to collect the data on region and the whole country. Conduct research the impacts of all factors on socio-economic development. Assess and project influencing factors and resources for development, international technology development and other socio-economic development factors</p>	<p>Step T1: Screen</p>	<p>The climate change impacts and mitigation potential have to be considered from the first stage of formulating strategy, planning and plan</p>	<p>Step 1: Analyze available surveys and organize an additional survey and field trips to collect the data on region and the whole country. <u>Conduct research on the impacts of climate change on the sector and the mitigation potential of that sector.</u> Assess and project the factors and development resources, international technology development factors and other socio-economic development factors affecting the national socio-economic development strategy.</p>
<p>Step 2: Research on directive viewpoints and macro goals</p>	<p>Step T1: Screening</p>	<p>The objective of climate change response will become one of the</p>	<p>Step 2: Research on directive viewpoints and macro goals <i>in the</i></p>

		objectives of the strategy, planning and plan. Climate policy integration cannot occur unless climate change response are not regarded as one of the objectives of the strategy, planning and plan	<u>context of climate change</u>
Step 3: Identify the development goal and orientation and the organization of the strategy implementation	Step T2: Select response measures	Choosing climate change response measures should be based on the leading direction and development goal in order to align climate change response and development	Step 3: Identify the development goal and orientation, <u>the adaptation and mitigation targets</u> , and the organization of the strategy implementation
Step 4: Draft the strategy, planning and plans and submit for approval	Step T3: Implement climate policy integration	Climate policy integration is implemented by embedding climate change into the document of strategy, planning processes and plans during the drafting period	Step 4: Draft the strategy, planning processes and plans integrated with climate change and submit for approval
Step 5: Inform the approved strategy, planning processes and plans within a certain period			Step 5: Inform the approved strategy, planning processes and plans integrated with climate

decided by the authority		change within a certain period decided by the authority	
Stage of implementation	Step T4: Implement the strategy, planning and plan integrated with climate change	This step does not belong to the process of formulating strategies, planning processes and plans; however, it is an important step to assess the effectiveness of the integration of climate change into development plans.	Implement the <u>climate change-integrated</u> strategy, planning processes and plans
Stage of Monitoring and Assessment	Step T5: Monitoring and Assessment	Confirm that climate policy integration has contributed to sustainable development; Identify the weakness in terms of content and methods which needs being adjusted and supplemented so that the integration of climate change into strategies, planning processes and plans is effective in reality	<u>Monitor and assess both the target of socio-economic development and climate change response</u>

Box 4.1. Strategic Environmental Assessment as a tool to integrate climate change adaptation in Viet Nam

The Strategic Environmental Assessment (SEA) for land-use planning for Nhon Trach district was conducted in 2007/08 to integrate environmental issues into the land-use planning for the Nhon Trach district near Ho Chi Minh City. An assessment of the possible consequences of climate change for Nhon Trach district was made as part of the SEA.

Accordingly, the SEA report proposes not only environmental protection solutions, but also measures for adapting to the expected climate change impacts, including estimated costs and implementation arrangements. The assessment of climate change impacts included analyses of possible temperature increase, precipitation changes, sea-level rise, and salt water intrusion.

Proposed recommendations and measures for adapting to climate change included:

- Dike systems to prevent the invasion of seawater in the district should keep being maintained, consolidated and further developed in order to prevent the intrusion of salt water to the district
- New varieties and species of crops should be identified. Alteration of planting system should be considered in order to reduce the vulnerability of agriculture to climate change impacts
- Plant coverage for the agricultural land converted to other uses, such as dwelling or construction land, should be at least 15% in order to avoid soil erosion.
- The drainage system should be better maintained and extended in pace with urban Development. And environmental management of urban and industrial parks should be enhanced, including regular dredging, in order to avoid local flooding in the rainy season.
- Existing mangrove forests should continue to be preserved in the district in order to mitigate the impacts from high tides, which are getting more serious.

An SEA of the Quang Nam province hydropower plan, covering the Vu Gia-Thu Bon river basin

An SEA was conducted, with the support from the Asian Development Bank (ADB), on the hydropower development plan for the Vu Gia-Thu Bon river basin (2006-2010). Climate change was considered as one of 15 issues to be addressed by the SEA. However, some of the climate change concerns were not quantifiable as

predictive or spatial models for the study area, particularly for the time-frame of the study (20 years), were not available. The analysis of climate change impacts was therefore mainly qualitative, based on available literature (mainly IPCC, 2007). However, many important climate change impacts on the hydrology of the basin were identified: the precipitation intensity increase and precipitation volume change; increases in extreme flood flow rates, resulting in large sediment transport and sand excavation; sea-level rise affecting flooding in the coastal areas of the delta; increases in temperature and higher evaporation rate leading to lower dry season minimal flows and salinity intrusion.

The SEA concluded that the pace and scale of the proposed hydropower development was not sustainable and recommended a number of fundamental principles to enhance the sustainability for the hydropower development in the basin. One of these principles highlights “safe operations”, recommending the implementation of operational regimes and institutional arrangements to reduce droughts and floods and prepare for disasters; the need to incorporate climate change parameters in design and management is explicitly mentioned. In addition, the results from the climate change analysis supported some strategic recommendations regarding the need for (i) integrated river basin management; (ii) coordinated management and water release programmes for the 60 dams considered; (iii) needs for improved data collection on climate-related issues.

Sources:

ADB (2008), “Strategic Environmental Assessment of the Quang Nam Province Hydropower Plan for the Vu Gia-Thu Bon River Basin”, prepared for the Vietnam Ministry of Natural Resources and Environment, the Ministry of Industry and Trade and Electricity Vietnam, Asian Development Bank, Hanoi.

ADB (2009), “Strategic Environmental Assessment as a Tool to Improve Climate Change Adaptation in the Greater Mekong Sub-region”, Asian Development Bank, Manila.

SEMLA (2008), “Evaluation of SEMLA SEA Projects”, Vietnam-Sweden Cooperation Programme on Strengthening Environmental Management and Land Administration in Vietnam, Hanoi.

CONCLUSION AND RECOMMENDATIONS

Mainstreaming climate change into socio-economic development strategies, planning processes and plans is a wise approach to implement climate change response measures appropriately, through integrating climate change response policies and measures into socio-economic development plans at all levels and to ensure the stability of the investment as well as reduce the vulnerability of socio-economic activities due to climate change impacts.

The target is to link the planning of management of disaster risks with the process of formulation of socio-economic development plan, which is the first important stage in stabilizing and sustainably developing the economy. However, climate policy integration is a new topic and hence policy-makers encounter considerable difficulties in implementing that activity. Moreover, the capacity and resources, including personnel, time and finance, are insufficient for the activities of climate policy integration.

This Technical Guidance attempts to provide an overview of climate policy integration and the activities and prerequisite conditions when integrating climate change into strategies, planning processes and plans. The Guidance also presents the main steps of the mainstreaming process in order to integrate climate change into the document of strategies, planning processes and plans.

The Technical Guidance also attempts to provide policy-makers with the method of merging the five-step mainstreaming process with the process of formulating the document of socio-economic development strategies, planning processes and plans. Simultaneously, the Technical Guidance also guides the content of each step of the mainstreaming process to integrate climate change into the development strategy, planning processes and plans.

The mainstreaming process includes five main steps. The first step (Screening) is to assess the relationship between the development strategy, planning processes and plans with climate change. The target of this step is to assess climate change impacts on the sector of the development strategy, planning processes and plans and to identify the necessity of integrating climate change into strategies, planning processes and plans.

The second step is “Selecting adaptation/mitigation measures” so that those measures can be integrated into development strategies, planning processes and plans. Selecting adaptation and/or mitigation measures includes the: (i) Identification of adaptation and/or mitigation measures; and (ii) Selection of adaptation and/or mitigation measures. The identification and selection of adaptation and/or mitigation

measures are implemented based on the method of expert judgment using the matrix box and selection criteria. It is essential to identify the most appropriate selection criteria for each sector and region.

Step T3 of “Integrating climate change into the document of strategies, planning processes and plans” is the most important step in the process of mainstreaming climate change into strategies, planning processes and plans. After adaptation and mitigation measures are identified, they need to be integrated into the documentation of socio-economic development strategies, planning processes and plans at national, sectoral and local levels. This general mainstreaming process is the basis for sectors and regions to identify the specific content to be integrated. The result of the mainstreaming process is that the new/existing document of socio-economic development strategy, planning processes and plans are embedded with adaptation and/or mitigation measures.

Step T4 of “Implementing climate change-integrated strategies, planning processes and plans” and Step T5 of “Monitoring and Assessment” are two steps for assessing the effectiveness and feasibility of the integration of climate change into strategies, planning processes and plans. The Technical Guidance also proposes a method to adjust the contents of each step of the mainstreaming process based on the assessment results. Therefore, the climate change mainstreaming process is continuous and adjusted regularly.

The Technical Guidance can be applied in the process of formulating and implementing the development strategy, planning processes and plans and the process of climate policy integration in general. Based on the general guidance, policy-makers will select appropriate steps and identify specific targets and criteria, which are applicable to their section and local area to maximize the effectiveness of climate policy integration.

APPENDIX TOOLS SUPPORTING THE MAINSTREAMING PROCESS

Organization	United States Agency for International Development (USAID), National Aeronautics and Space Administration (NASA), the Institute for Application of Geospatial Technology (IAGT), Colorado University, and Water Centre for the Humid Tropics of Latin America and the Caribbean (CATHALAC)
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Tool	The Climate Mapper of USAID, NASA and CATHALAC
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Link	http://www.iagt.org/focusareas/envmon/climatechg.aspx
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2. The Climate Change Data Portal of the World Bank

Organization	World Bank
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Tool	The Climate Change Data Portal
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Link	http://www.worldbank.org/climateportal
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3. Cl:grasp of the Postdam Institute for Climate Impact Research (PIK) and GTZ

Organization	Postdam Institute for Climate Impact Research (PIK) and <i>Deutsche Gesellschaft für Technische</i> (GTZ)
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Tool	Cl:grasp
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Tool	http://www.ci-grasp.org/
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4. weADAPT of the Stockholm Environmental Institute

Organization	The Stockholm Environmental Institute
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Tool	weADAPT
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Link	http://www.weadapt.org/
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5. Adaptation Learning Mechanism of UNDP

Organization	United Nations Development Programme (UNDP)
Tool	Adaptation Learning Mechanism (ALM)
Link	http://www.adaptationlearning.net/

6. CCA QS – Quality standard of UNDP

Organization	United Nations Development Programme (UNDP)
Tool	UNDP's Quality Standard for Integrating of Adaptation to Climate Change into Development Programming (CCA QS)
Link	Not available

7. ORCHID of DFID

Organization	The Department for International Department (DFID)
Tool	Opportunities and Risks of Climate Change and Disaster (ORCHID)
Link	http://www.ids.ac.uk/climatechange/orchid

8. Guidance on Adaptation to Climate Change in coastal areas of USAID

Organization	United States Agency for International Development (USAID)
Tool	Adapting to coastal climate change: A guidebook for development planners
Link	http://www.crc.uri.edu/

9. Project Screening Tool of ADB

Organization	The Asian Development Bank
Tool	Climate change risks screening tool for projects (PST)
Link	No

10. Climate check of GTZ

Organization	The <i>Deutsche Gesellschaft für Technische Zusammenarbeit</i> (GTZ) for the Federal Ministry for Economic Cooperation and Development (BMZ)
Tool	Climate Check
Link	http://www.gtz.de/climate-check

11. CRISTAL of IISD

Organization	International Institute for Sustainable Development (IISD)
Tool	CRiSTAL (Community-based Risk Screening Tool – Adaptation & Livelihoods)
Link	http://www.cristaltool.org/

12. PRECIS of Hadley Center (United Kingdom)

Organization	Hadley Center
Tool	PRECIS (Providing REgional Climates for Impacts Studies)
Link	http://precis.metoffice.com/

13. Tools for vulnerability assessment of the Japan International Cooperation Agency

Organization	Japan International Cooperation Agency (JICA)
Tool	Vulnerability assessment
Link	No

14. E-learning tool “Planning for community-based adaptation in agriculture” of the FAO

Organization	Food and Agriculture Organization (FAO) and Freiburg University (Germany)
Tool	Planning for community-based adaptation in agriculture

Link	Not available; refer to the similar e-learning tool of “Climate and application of flood projection in agriculture” at http://www.webgeo.de/module/applied/FAO/probabilisticforecasts-bgd-fao.html
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15. CEDRA of Tearfund

Organization	Tearfund
Tool	Climate change and Environmental Degradation Risk and Adaptation assessment (CEDRA)
Link	http://tilz.tearfund.org/Topics/Environmental+Sustainability/CEDRA.htm

16. LEAP of the Stockholm Environmental Institute

Organization	The Stockholm Environmental Institute (SEI)
Tool	Long-range Energy Alternatives Planning System (LEAP)
Link	www.energycommunity.org

17. The Technical Guidance for the Assessment of Climate Change Impacts and Identification of Adaptation Measures of IMHEN

Organization	The Institute of Meteorology, Hydrology and Environment
Tool	The Technical Guidance for the Assessment of Climate Change Impacts and Identification of Adaptation Measures
Link	http://www.cbcc.org.vn/an-pham-2003-tai-lieu/an-pham/

18. The methods to choose response measures

The four major methods used for prioritizing and selecting adaptation options – cost-benefit analysis (CBA), multi-criteria analysis (MCA), cost-effectiveness analysis (CEA), and expert judgment – vary in a number of ways. Some of these are outlined here:

- 1) CBA can handle optimization and prioritization; it also provides an absolute measure of desirability, albeit judged by only one criterion: economic efficiency. CBA has comparatively heavy data requirements.
- 2) MCA is suitable when more criteria are thought to be relevant, and when quantification and valuation in monetary terms is not possible. MCA is

normally used for the ranking of options. But if the “do-nothing” case is included as an alternative, it can also help to clarify whether the measure is better than simply “bearing with the situation”. Subjective judgment plays an important role in this method, making outcomes more arbitrary than with CBA.

- 3) CEA is a method that falls somewhere between CBA and MCA. As is the case with MCA, CEA only produces a ranking.
- 4) Expert judgment is a qualitative method which can support the prioritization of adaptation options at project level.

Given that CBA is the more objective method and can handle optimization, it may be the most desirable option. However, this depends on the purpose and stage of the analysis. In cases where important criteria cannot be accommodated in CBA (such as sociological or cultural barriers), or when benefits cannot be quantified and valued (such as the benefits of preserving biodiversity), MCA is preferred. If desired, the outcomes of CBA can be incorporated into MCA, making the overall analysis a hybrid one

19. Tools to assess the climate policy integration

The literature of Environmental Policy Integration (EPI) is rather well-developed and several EPI analytical frameworks have been developed by academics. Two main analytical frameworks for evaluating the environmental policy integration within the EPI literature context includes the OECD checklist on policy coherence and integration for sustainable development (2002) and the European Environmental Agency’s checklist of criteria for evaluating EPI (2005). The two analytical frameworks have several similarities, which were summarized by Dupont, 2010.

The OECD and EEA checklist both pay greater consideration to the policy process (e.g. administrative culture and practices) (Dupont, 2010), which was once mentioned by Underdal (1980) as the indirect approach to achieve the policy integration. The two analytical frameworks, however, have some overlapping criteria and pay less attention to the policy outcomes (Dupont, 2010). Although political commitment by governmental leaders and policy coordination between institutions are important to policy integration, any declaration or intention to integrate climate concerns will become symbolic if it is not explicitly illustrated in the policy output (Kivimaa and Mickwitz, 2006). Therefore, Kivimaa and Mickwitz (2006) have developed a set of criteria derived from the definitions of environmental policy integration of Lafferty and Hovden (2003) to assess the integration of climate change into policy documents. This set of criteria is illustrated in Table P.1.

Table P. 1. Checklist for improving policy coherence and integration for sustainable development (OECD, 2002) and EEA's (2005) checklist of criteria for evaluating EPI (Dupont, 2010)

OECD Checklist	EEA Checklist
1. Is there a common understanding of sustainable development?	1. Trends in drivers, pressure, changes in state of the environment, impacts
2. Is there a clear commitment and leadership?	2. Political commitment and strategic vision
3. Are conditions in place to steer sustainable development integration?	3. Administrative culture and practices
4. Is stakeholder involvement in decision-making encouraged?	4. Assessments and consultations to underpin policy design and decisions
5. Is the diversity of knowledge and the scientific input to problems adequately managed?	5. Use of policy instruments to deliver EPI
	6. Monitoring and learning from experience

Table P.2. Criteria to assess the integration of climate change into policy documents (Kivimaa and Mickwitz, 2006)

Criterion	Main questions
Inclusion	To what extent are direct as well as indirect climate change mitigation and adaptation impacts covered?
Consistency	Have the contradictions between the aims related to climate change mitigation and adaptation and other policy goals been assessed and have there been efforts to minimize revealed contradictions?
Weighting	Have the relative priorities of climate change mitigation and adaptation impacts compared to other policy aims been decided and are there procedures for determining the relative

Criterion	Main questions
	priorities?
Reporting	Are there clearly stated evaluation and reporting requirements for climate change mitigation and adaptation impacts (including deadlines) <i>ex ante</i> and have such evaluations and reporting happens <i>ex post</i> ? Have indicators been defined, followed up and used?
Resources	Is internal as well as external know-how about climate change mitigation and adaptation impacts available and used and are resources provided?

Several studies, e.g. Jensen and Pedersen (2009), Van Bommel and Kuindersma (2008), Beck et al. (2009), Manez et al. (2009) and Reinert and Carss (2009) have used the above set of criteria to evaluate the degree of climate policy integration in some European countries. This framework, however, also suffers from a number of drawbacks. It places greater emphasis on the integration of climate change into policy documents rather than policy process (e.g. institutional arrangement) whereas the policy integration also needs the support from the indirect approach (i.e. policy process). Additionally, it may be inappropriate to apply this framework in countries where CPI is just on its infancy and hence tracing the evidence of CPI in the policy documents is impossible (e.g. Vietnam).

20. Criteria for choosing tools used for climate policy integration

According to UNDP (2008), there are many tools used in the process of mainstreaming climate change into socio-economic development strategies, planning processes and plans at all levels. However, the choice of tools should be based on the following criteria:

- Objectives;
- The relevance of the tool to the analyzed issue;
- Technical capacity to use that tool;
- Data requirement when using that tool;
- Time frame for using that tool is practical;
- Sufficient financial assistance for the use of that tool;
- The availability of necessary software, e.g. ArView for GIS;
- The political, economic and social conditions which affect the result of using that tool.

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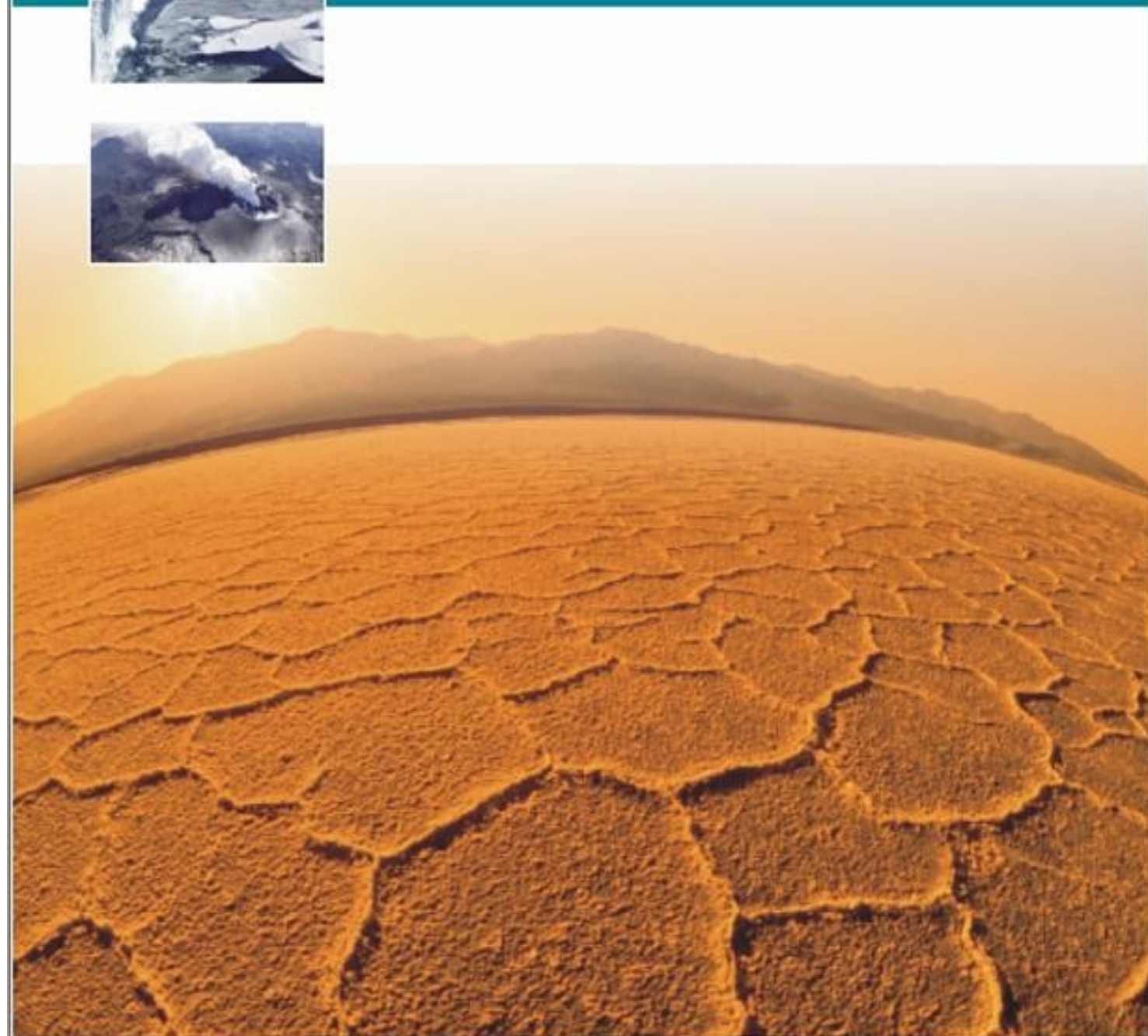
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