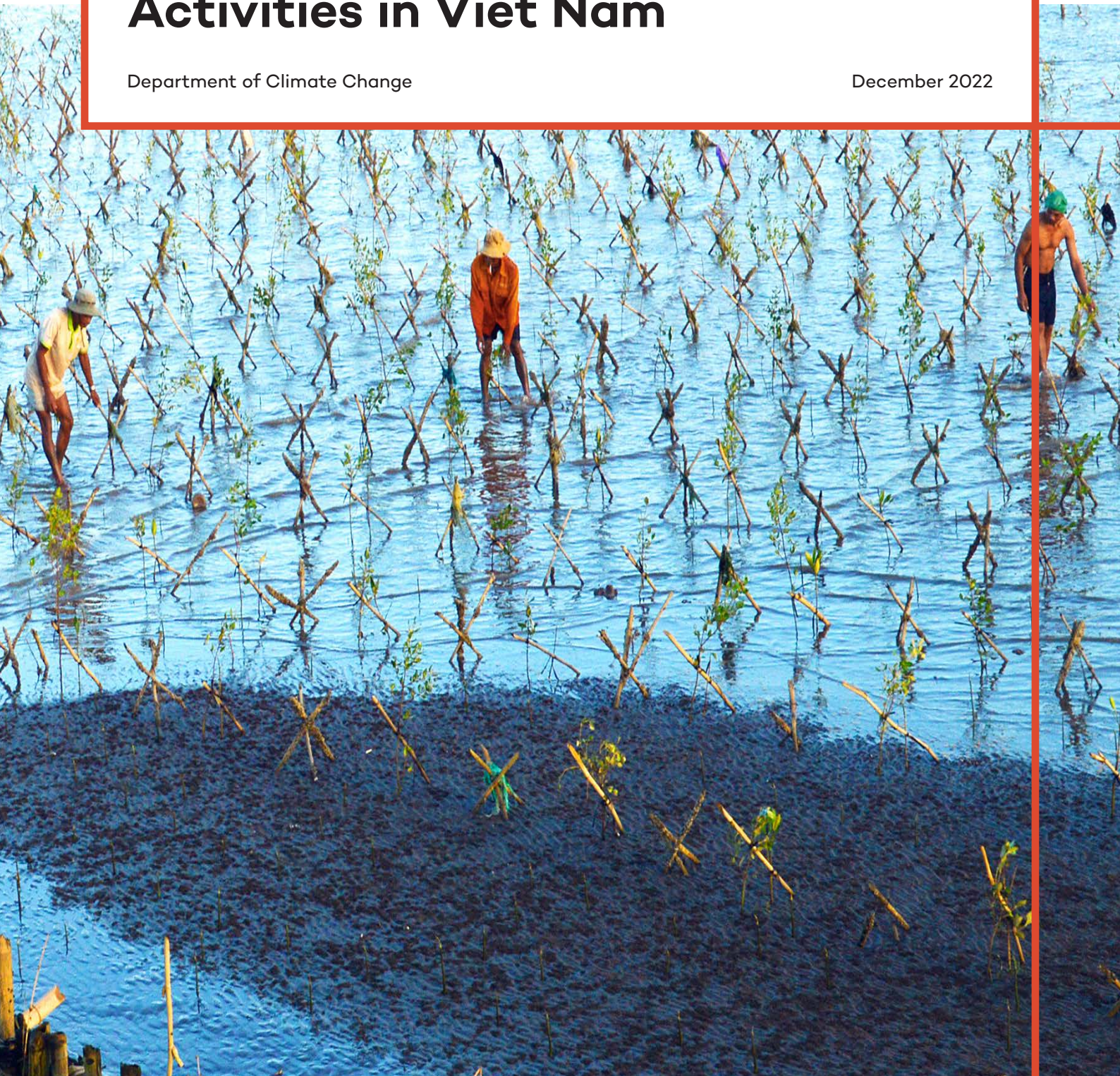


Monitoring and Evaluation Manual for Climate Change Adaptation Activities in Viet Nam

Department of Climate Change

December 2022



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Photo credit: Vo Van Bang/Department of Climate Change. Planting trees to prevent erosion in coastal area in Bac Lieu province.

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Summary

The national monitoring and evaluation (M&E) system for climate change adaptation activities (hereafter referred to as the M&E system) was issued by the Prime Minister in Decision No.148/QD-TTg, dated January 28, 2022. This system groups M&E contents together with specific M&E indicators of climate change adaptation activities; it also stipulates the responsibilities of ministries, ministerial-level agencies, and provincial-level People’s Committees in organizing the implementation. The M&E system aims to monitor and evaluate progress and achieved results of adaptation activities, provide information to track the achievement of national adaptation goals and international commitments, and improve the effectiveness of adaptation activities and state management of adaptation to climate change.

This M&E manual was developed to help ministries and localities implement the M&E system; provide guidance to ministries and localities to monitor and evaluate climate change adaptation activities within their management scope; develop an annual general report on the M&E of adaptation activities; support capacity building; and support the management, coordination, and effective implementation of climate change adaptation activities in Vietnam. The manual is intended for agencies and organizations that monitor and evaluate climate change adaptation activities at the central and provincial levels, as well as advising and managing staff on climate change responses in ministries and localities.

The M&E manual has three basic parts:

1. **The overview of adaptation M&E systems for climate change** contains an overview of the National Adaptation Plan (NAP); the concept of M&E of climate change adaptation activities; an overview of the M&E system and an introduction of the national M&E system of climate change adaptation activities in Viet Nam; an overview of M&E indicators of adaptation activities; and an introduction to a set of indicators for M&E of adaptation activities to climate change at the national level following Decision No.148/QD-TTg of the Prime Minister.
2. **Guidance on information collection and data calculation** according to M&E indicators. Instructional content for each indicator includes the indicator name; explanation of indicators; a list of data/information to be collected; how to calculate data related to indicators; the reporting period; the source of data/documentation; and the agency responsible for aggregation and reporting. Guidelines for information collection and calculation according to M&E indicators for the ministry/sector level are shown in Table A1 in the Appendix. Guidelines for information collection and calculation on M&E indicators for the local level are shown in Table A2 in the Appendix.
3. **Guidance on the M&E and reporting process**

The monitoring, evaluation and reporting process is summarized in Figure ES1.

Figure ES1. The monitoring, evaluation, and reporting process



The monitoring, evaluation, and reporting process has six steps: (i) planning for the M&E task; (ii) collecting information and calculating according to M&E indicators; (iii) field surveying (if necessary); (iv) synthesizing information and preparing M&E reports; (v) consultation on M&E results; and (vi) completing the report and updating the information on the online reporting system. In each step, the relevant contents need to be followed with specific and detailed instructions. The framework for M&E reporting is implemented in accordance with the Decision No.148/QĐ-TTg of the Prime Minister. The step-by-step monitoring, evaluation, and reporting processes of the ministry/sector and of the locality are basically the same. Differences in implementation content at the ministerial/sectoral level and the local level are supplemented with step-by-step instructions.

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Abbreviations and Acronyms

CCA	climate change adaptation
M&E	monitoring and evaluation
MARD	Ministry of Agriculture and Rural Development
MOC	Ministry of Construction
MOF	Ministry of Finance
MOH	Ministry of Health
MOIT	Ministry of Industry and Trade
MOCST	Ministry of Culture, Sports and Tourism
MOLISA	Ministry of Labor, War invalids and Social Affairs
MONRE	Ministry of Natural Resources and Environment
MOST	Ministry of Science and Technology
MOT	Ministry of Transport
MPI	Ministry of Planning and Investment
NAP	National Adaptation Plan
NCCC	National Climate Change Committee of Viet Nam
TAMD	Tracking Adaptation and Measuring Development

Glossary

In this document, the definitions of terms are as follows:

Adaptation	The process of adjustment to actual or expected climate and its effects. In human systems, adaptation seeks to moderate or avoid harm or exploit beneficial opportunities. In some natural systems, human intervention may facilitate adjustment to expected climate and its effects. (IPCC, 2014a)
Adaptive capacity	The ability of systems, institutions, humans and other organisms to adjust to potential damage, to take advantage of opportunities, or to respond to consequences. (IPCC, 2014a)
Baseline/reference	The baseline (or reference) is the state against which change is measured. A baseline period is the period relative to which anomalies are computed. In the context of transformation pathways, the term baseline scenarios refers to scenarios that are based on the assumption that no mitigation policies or measures will be implemented beyond those that are already in force and/or are legislated or planned to be adopted. Baseline scenarios are not intended to be predictions of the future, but rather counterfactual constructions that can serve to highlight the level of emissions that would occur without further policy effort. Typically, baseline scenarios are then compared to mitigation scenarios that are constructed to meet different goals for greenhouse gas (GHG) emissions, atmospheric concentrations or temperature change. The term baseline scenario is used interchangeably with reference scenario and no policy scenario. In much of the literature the term is also synonymous with the term business-as-usual (BAU) scenario, although the term BAU has fallen out of favour because the idea of business as usual in century-long socio-economic projections is hard to fathom. (IPCC, 2014a)

Climate change	Climate change refers to a change in the state of the climate that can be identified (e.g., by using statistical tests) by changes in the mean and/or the variability of its properties and that persists for an extended period, typically decades or longer. Climate change may be due to natural internal processes or external forcings such as modulations of the solar cycles, volcanic eruptions and persistent anthropogenic changes in the composition of the atmosphere or in land use. Note that the Framework Convention on Climate Change (UNFCCC), in its Article 1, defines climate change as: ‘a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods’. The UNFCCC thus makes a distinction between climate change attributable to human activities altering the atmospheric composition and climate variability attributable to natural causes. (IPCC, 2014a)
Climate change impact assessment	The practice of identifying and evaluating, in monetary and/or non-monetary terms, the effects of climate change on natural and human systems. (IPCC, 2014b)
Adaptation assessment	The practice of identifying options to adapt to climate change and evaluating them in terms of criteria such as availability, benefits, costs, effectiveness, efficiency, and feasibility. (IPCC, 2014b)
Exposure	The presence of people, livelihoods, species or ecosystems, environmental functions, services, and resources, infrastructure, or economic, social, or cultural assets in places and settings that could be adversely affected. (IPCC, 2014a)
Hazard	The potential occurrence of a natural or human-induced physical event or trend or physical impact that may cause loss of life, injury, or other health impacts, as well as damage and loss to property, infrastructure, livelihoods, service provision, ecosystems and environmental resources. In this report, the term hazard usually refers to climate-related physical events or trends or their physical impacts. (IPCC, 2014a)
Mainstreaming or integration	The integration of (adaptation) objectives, strategies, policies, measures, or operations such that they become part of national and regional development policies, processes, and budgets at all levels and stages. (Lim & Spanger Siegfried, 2005)
Maladaptive actions (or maladaptation)	Actions that may lead to increased risk of adverse climate-related outcomes, increased vulnerability to climate change, or diminished welfare, now or in the future. (IPCC, 2014b)

Resilience	The capacity of social, economic and environmental systems to cope with a hazardous event or trend or disturbance, responding or reorganizing in ways that maintain their essential function, identity and structure, while also maintaining the capacity for adaptation, learning and transformation. (IPCC, 2014a)
Risk	The potential for consequences where something of value is at stake and where the outcome is uncertain, recognizing the diversity of values. Risk is often represented as probability or likelihood of occurrence of hazardous events or trends multiplied by the impacts if these events or trends occur. In this report, the term risk is often used to refer to the potential, when the outcome is uncertain, for adverse consequences on lives, livelihoods, health, ecosystems and species, economic, social and cultural assets, services (including environmental services) and infrastructure. (IPCC, 2014a)
Risk management	The plans, actions or policies to reduce the likelihood and/or consequences of risks or to respond to consequences. (IPCC, 2014a)
Sensitivity	The degree to which a system or species is affected, either adversely or beneficially, by climate variability or change. The effect may be direct (e.g., a change in crop yield in response to a change in the mean, range, or variability of temperature) or indirect (e.g., damages caused by an increase in the frequency of coastal flooding due to sea-level rise). (IPCC, 2014b)
Vulnerability	The propensity or predisposition to be adversely affected. Vulnerability encompasses a variety of concepts and elements including sensitivity or susceptibility to harm and lack of capacity to cope and adapt. (IPCC, 2014a)

Introduction

On January 28, 2022, the Prime Minister signed Decision No.148/QD-TTg on issuing the national system for the monitoring and evaluation (M&E) of climate change adaptation activities (hereinafter referred to as the M&E system). This system groups M&E contents together with specific M&E indicators of climate change adaptation activities and stipulates the responsibilities of ministries, ministerial-level agencies, and provincial-level People's Committees in organizing the implementation.

The M&E system aims to monitor and evaluate the progress and results achieved for adaptation activities. The M&E system also provides information to track the achievement of national adaptation goals and international commitments, as well as improve adaptation performance and state management of climate change adaptation. The M&E system is based on international research experiences, relevant legal provisions, strategies, master plans, and plans within different sectors and fields. At the same time, the development of the M&E system is also based on the main goals, tasks, and solutions of the National Adaptation Plan (NAP) for the period 2021–2030, with a vision to 2050 based on Decision No.1055/QD-TTg dated July 20, 2020.

The implementation of the M&E system, along with the implementation of the NAP, is the responsibility of the ministries, ministerial-level agencies, and localities (see Table 1). Ministries and localities have to allocate resources and direct specialized agencies to organize the M&E of climate change adaptation activities under their management, update information and report on implementation results in accordance with the Prime Minister's Decision No.148/QD-TTg, and submit it to the Ministry of Natural Resources and Environment (MONRE) as prescribed.

Until now, climate change adaptation activities in Viet Nam have not been specifically monitored and evaluated. Even when M&E systems have been issued, the implementation of the system in ministries and localities still face many difficulties when it comes to collecting and synthesizing information and developing M&E reports. This M&E system is a new model that is relatively independent of other existing M&E systems and activities in ministries/sectors and localities. In order to operationalize this system, ministries and localities need guidance documents to implement the processes uniformly and to ensure efficiency in monitoring and evaluating adaptation activities to climate change.

This M&E manual was developed to help ministries and localities implement the M&E system. It provides guidance for ministries and localities to monitor and evaluate climate change adaptation activities within their management scope as well as to develop an annual general report on M&E of adaptation activities. It also contributes to capacity building and supports management, coordination, and the effective implementation of climate change adaptation activities in Viet Nam.

In addition to the Introduction and Appendix, the manual has four parts:

- **Part I.** Legal basis, objectives, scope, and users of the manual
- **Part II.** Overview of an M&E system for climate change adaptation
- **Part III.** Guidance on information collection and calculations according to the M&E indicators
- **Part IV.** A guide to the process of monitoring, evaluation, and reporting.

1.0 Legal Basis, Objectives, Scope, and Users of the Manual

1.1 Legal Basis

- Law on Environmental Protection in 2020.
- Decision No.1055/QD-TTg dated July 20, 2020, of the Prime Minister issuing of Vietnam's NAP to climate change for the period 2021–2030, with a vision to 2050.
- Decision No.148/QD-TTg, dated January 28, 2022, of the Prime Minister approving the national M&E system for climate change adaptation activities.

1.2 Objectives of the Manual

1.2.1 Overall Objectives

The M&E manual was developed to help ministries and localities with the implementation of the M&E system issued by the Prime Minister's Decision No.148/QD-TTg. It provides guidance to ministries and localities to monitor and evaluate climate change adaptation activities within their management and gives guidance for developing an annual general report on the M&E of adaptation activities. It also advances capacity building and supports management, coordination, and the effective implementation of climate change adaptation activities in Viet Nam.

1.2.2 Specific Objectives

1. Support ministries and localities in the process of implementing the M&E system on climate change adaptation activities within the scope of their management.
2. Provide guidance for collecting information and update M&E information according to M&E criteria and indicators.
3. Provide guidance to develop periodic reports on the M&E of climate change adaptation activities.
4. Contribute to raising awareness and understanding of climate change adaptation; improve the efficiency of adaptation activities and the national management of climate change adaptation.

1.3 Scope and Users of the Manual

The M&E manual provides guidance for ministries and localities for the M&E of climate change adaptation activities according to the provisions of Decision No.148/QD-TTg dated January 28, 2022, of the Prime Minister.

The M&E manual will be used by agencies and organizations that monitor and evaluate climate change adaptation activities at central and provincial levels. It will advise the staff of ministries, sectors, and localities on how to respond to climate change.

2.0 Overview of the Monitoring, and Evaluation System for Adaptation to Climate Change

2.1 General Concepts Monitoring and Evaluation for Adaptation to Climate Change

2.1.1 Climate Change Adaptation and the NAP

Climate change adaptation is an adjustment in natural or human systems to respond to current or future climate impacts, thereby reducing harm or taking advantage of climate change. Human activities aimed at adapting to climate change are called adaptation activities. At the national level, adaptation is accomplished through policies, master planning, planning, and investments to address the challenges and opportunities that climate change presents (Price-Kelly et al., 2015).

In Viet Nam, climate change adaptation activities are now carried out according to the climate change NAP for the period 2021–2030 with a vision to 2050 (hereafter referred to as the NAP), issued together with Decision No.1055/QĐ-TTg dated July 20, 2020, of the Prime Minister.

The overall objective of the NAP is to reduce vulnerability and risks caused by the impacts of climate change by strengthening the resilience and adaptive capacity of economic and ecological communities and to promote the mainstreaming of climate change adaptation into the strategy and planning system. This goal is fully consistent with the basic objectives of the NAP under the United Nations Framework Convention on Climate Change.¹

The NAP includes three specific objectives:

1. Improve the effectiveness of climate change adaptation by strengthening the state management of climate change, including climate change adaptation activities, promoting the integration of climate change adaptation into the strategy and planning system.
2. Strengthen resilience, enhancing the adaptive capacity of communities, economic sectors, and ecosystems through investment in adaptation actions, science, and technology, raising awareness to be ready to adjust to climate changes.
3. Disaster risk reduction and damage reduction through preparedness to respond to natural disasters and extreme climate increases due to climate change.

¹ (i) Reduce vulnerability to the effects of climate change, through strengthening adaptive capacity and resilience; and (ii) Facilitating the integration of climate change adaptation into appropriate new and existing policies, programs and activities, in particular development strategies and plans in all relevant areas and at different levels as appropriate. (Decision 5/Cp.17, paragraph 1) https://unfccc.int/files/adaptation/cancun_adaptation_framework/national_adaptation_plans/application/pdf/decision_5_cp_17.pdf

The NAP has 142 tasks divided into seven different field groups: i) strengthening state management and resources (12 tasks); ii) agriculture (43 tasks); iii) natural disaster prevention (26 tasks); iv) environment and biodiversity (7 tasks); v) water resources (12 tasks); vi) infrastructures (23 tasks); vii) community health (7 tasks); labor and society (5 tasks); and culture, sports, and tourism (7 tasks).

The NAP for the period of 2021–2030 with a vision to 2050 is structured in phases:

- From 2021 to 2025: The focus is on completing mechanisms and policies on climate change adaptation and change; preparing the legal basis and technical conditions to promote the integration of climate change content into policies, strategies, and planning systems; implementing tasks and prioritizing solutions to adapt to climate change, enhance the capacity to respond to natural disasters, and minimize damage caused by natural disasters and unusual changes of climate and weather.
- From 2026 to 2030: The focus is continuing to strengthen the state management of climate change; coordinating and integrating activities into the implementation of tasks and solutions to improve the capacity of static sectors, economic sectors, communities, and ecosystems to enhance resilience and readiness to adjust to climate changes; continuing to improve the resilience capacity of the infrastructure system, the adaptability of the natural ecosystem, and biodiversity; enhancing the resilience of natural ecosystems and protecting and conserving biodiversity in the context of the impacts of climate change; promoting adaptation actions that have co-benefits for climate change risk reduction and economic, social, and environmental performance; monitoring and evaluating the impacts of climate change response activities in the world on Viet Nam; identifying solutions to minimize impacts; and taking advantage of opportunities for socio-economic development.
- Vision to 2050: the NAP will focus on promoting the results achieved in the period 2021–2030; continuing to enhance the capacity of people, infrastructure, and natural systems to adapt to climate change in order to protect and improve the quality of life, as well as ensure food security, energy security, water security, gender equality, social security, community health, natural resources, sustainable development of the country in the context of climate change, safety from natural disasters, etc. Climate change adaptation will be integrated into all socio-economic activities in order to proactively adapt to climate change and take advantage of opportunities arising from climate change for socio-economic development. Viet Nam will also actively contribute to the international community in responding to climate change and protecting the Earth's climate system.

The responsibilities for the implementation of the NAP are summarized in Table 1.

Table 1. Responsibilities for the implementation of the NAP

Organization	Responsibilities
MONRE	<p>Focal point, overall coordination for the implementation of the NAP, and responsible for:</p> <ul style="list-style-type: none"> • Lead and coordinate with the National Committee on Climate Change (NCCC), relevant ministries, branches, and provincial-level People’s Committees under central authority in monitoring and supervising the implementation of the NAP; periodically review, summarize, and report; and propose to the government, the Prime Minister, and the NCCC the necessary measures to ensure synchronized and effective implementation of the plan. • Lead and coordinate with the Ministry of Planning and Investment (MPI) in monitoring and evaluating the implementation of the NAP; promptly report to and advise the government and the Prime Minister on solutions to deal with inadequacies and problems arising during the implementation process at the central and local levels, ensuring the timely implementation of the NAP and its practical results. • Coordinate with the MPI, Ministry of Finance (MOF), and relevant ministries and sectors in developing mechanisms and policies to support and attract investment for climate change adaptation activities, mechanisms and policies to strengthen the insurance system, and risk-sharing system for climate and natural disasters.
MPI	<ul style="list-style-type: none"> • Lead and coordinate with relevant agencies in reviewing and compiling investment projects under the medium-term public investment plan for each period on the basis of the list of investment projects proposed by ministries and central and local agencies for submission to competent authorities in accordance with the Law on Public Investment and guiding documents on the guidance of the Law on Public Investment. • Coordinate with relevant ministries, branches, and agencies in reviewing socio-economic development master plans and plans to integrate them into the NAP activities and ensure consistency among plans and development plans; develop mechanisms and policies to support and attract investment for climate change adaptation activities. • Coordinate with the MONRE in monitoring and evaluating the implementation of the NAP.
MOF	<ul style="list-style-type: none"> • Lead and coordinate with the MONRE and other ministries and central agencies in considering the availability of annual recurrent expenditure from the central budget and allocate it to implement the tasks outlined in the NAP.
Provincial-level People’s Committees	<ul style="list-style-type: none"> • Allocate funds for the implementation of NAP activities and tasks assigned to localities from local budget sources as prescribed.

Organization	Responsibilities
Ministries, ministerial-level agencies, government-attached agencies, and provincial-level People's Committees	<ul style="list-style-type: none"> • Actively implement the tasks assigned in the list of tasks attached to the NAP; focus on mobilizing and allocating resources for implementation, ensuring quality and progress as required. • Review sectoral, field, and local development master plans and plans to integrate them into the NAP's activities, ensuring synchronous linkage between master plans and plans. • Mobilize and attract the participation of socio-political organizations, social organizations, enterprises, and communities; create conditions for financial institutions and domestic and foreign enterprises to invest in and support the implementation of the NAP. • Supervise and promote awareness of climate change and climate change adaptation during the implementation of the plan.

Based on the objectives and tasks of the NAP, ministries, sectors, and localities shall develop and implement specific and detailed tasks in order to effectively implement the NAP.

Regarding M&E:

- At the national level: MONRE, in collaboration with the NCCC, is responsible for M&E of the implementation of the plan, reporting to the government and the Prime Minister every 2 years.
- At the ministerial/sectoral level: Ministries and sectors are responsible for M&E of the implementation and performance of sectoral-level activities within their assigned functions and tasks; they will summarize the implementation situation and send annual reports to MONRE and the NCCC before December 31.
- At the local level: The Department of Natural Resources and Environment is responsible for advising the provincial People's Committees on how to monitor and evaluate the implementation of tasks at the local and community levels in the province and summarizing the implementation situation for the provincial People's Committees to report annually to MONRE and the NCCC before December 31.

The implementation progress of the NAP will be reported by MONRE to the NCCC at its annual meeting, where they will make necessary adjustment decisions.

2.1.2 The Concept and Purpose of M&E

Monitoring a program, plan, or project (hereinafter collectively referred to as “a plan”) is the continuous or periodic collection of data to measure the progress of the plan and whether that plan has achieved its objectives. Monitoring is used to track changes during plan implementation. The purpose of monitoring is to enable stakeholders to make decisions depending on the effectiveness of the plan and the effectiveness of the use of resources (LDC Expert Group, 2012).

Monitoring is sometimes called process assessment because it focuses on performance and raises the following key questions:

- Are the plans implemented correctly, and to what extent have they been implemented?
- Are there any differences when implementing plans in this area or locality compared to other fields and localities?
- Does the implementation of the plan bring benefits to the right people? What is the implementation cost?

Monitoring is an ongoing process, requiring the collection of data at many stages, including before the implementation of the plan. Monitoring results are used to decide which activities need to be continued and which activities need to be adjusted to achieve the expected results of the plan (Price-Kelly et al., 2015).

Evaluation is the measurement of which plan activities have achieved their intended goals and whether they could have been done better or more efficiently by using an alternative measure (LDC Expert Group, 2012). The different results that occur whether or not the plan is implemented are called “impacts.” Measuring this difference is also known as an “impact assessment” of the plan.

To perform an evaluation, it is necessary to:

- Collect information before the plan is implemented (to provide basic information/a baseline) and at the end of the plan to evaluate the overall effectiveness of the plan. Periodic information collection during plan implementation and periodic evaluation is also very important to evaluate progress, assess the implementation level, and help the plan-makers consider, adjust, and supplement the plan.
- Assess data to see if these changes are due to the implementation of the plan and to assess whether the plan is well designed.

M&E helps the plan-implementing agency make decisions related to the plan activities and deliver the results of the plan to the beneficiaries based on objective evidence. It also ensures the efficient and effective use of resources, and objective evaluation of which fields, regions, localities, and tasks in the plan have had expected results and which have not or have no results, in addition to what issues need to be adjusted (Price-Kelly et al., 2015).

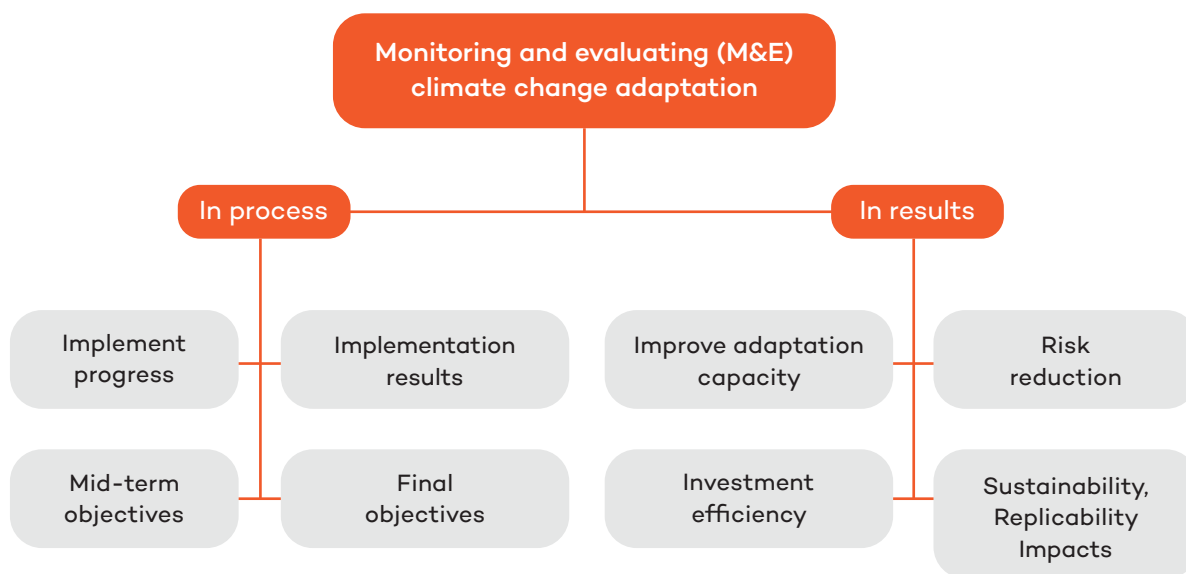
The purpose of M&E is accountability (Price-Kelly et al., 2015)—both upward accountability to the leaders of government, businesses, and donors and downward accountability to stakeholders and citizens. Reporting helps leaders at all levels, as well as businesses and donors, see the effectiveness of the invested funds or encourages them to consider taking a different approach if the investment is not working effectively.

2.1.3 M&E for Climate Change Adaptation Activities

M&E is an important part of the implementation of policies, master plans, plans, and investments for climate change adaptation at all levels. Monitoring the progress of adaptation activities and the impact of these activities on reducing vulnerability enhances the adaptive capacity of economic, social, and natural systems, improving living standards for communities affected by climate change.

M&E for a specific adaptation activity can be generalized according to the process outlined in Figure 1. Process-based M&E will focus on an implementation process that tracks the progress and level of completion of a particular intervention/project/policy/task, etc. Evaluation helps to assess the status of achieved goals and their impacts and considers issues that need to be supplemented and readjusted. Results-based M&E will focus on assessing how the results of the implementation of adaptation activities have contributed to strengthening adaptive capacity, reducing risks from climate change, and improving investment efficiency. It evaluates whether or not the results of adaptation activities are sustainable and replicable

Figure 1. Contents of the M&E of adaptation activities



Source: Adapted from Price-Kelly et al., 2015.

Results-based evaluation is also considered an assessment of the impact of adaptation activities—that is, an assessment of the impacts (economic, social, and environmental) brought about by the implementation of adaptation actions.

The main contents of M&E of adaptation activities according to the above diagram are of a general nature; depending on adaptation activities, specific contents can be adjusted accordingly. For example, M&E of policy-related activities are concerned with the implementation process, achievement of goals, effectiveness, and impact of the policy. Meanwhile, M&E of projects and adaptation models should focus on implementation progress, implementation results, investment efficiency, sustainability, replicability, etc.

In climate change adaptation, M&E can be done independently or in combination to achieve three basic objectives: (i) assessment of the effectiveness of adaptation actions and solutions; (ii) support for adaptive management (checking whether policies, plans, and actions are properly implemented or need to be adjusted based on M&E results); and (iii) raising awareness related to adaptation (better understanding of the context and status of climate change impacts, adaptation needs, and experiences gained in the process of implementing adaptation actions) (Price-Kelly et al., 2015).

In Viet Nam, a number of studies or implementation tasks have examined climate change adaptation M&E at the sectoral and project levels (Huong, 2018). However, the M&E of climate change adaptation activities at the national level has not yet been implemented. On the other hand, the M&E at all levels is not systematic, with specific indicators and a unified process.

In conclusion, the development and implementation of the national system are necessary to monitor and evaluate the progress and results achieved by adaptation activities carried out by the task groups outlined in the NAP. The national M&E system will be the basis for ministries, sectors, and localities to implement timely and systematic monitoring, evaluation, and reporting to improve the efficiency of management, coordination, and implementation adaptation activities. Activities regarding M&E for climate change adaptation in Viet Nam are quite new, and the country lacks of experience. To ensure it meets its objectives, the M&E system should focus on the implementation and progress of adaptation activities (process-based M&E) while also considering the results of adaptation activities in all climate change sectors (results-based M&E).

Key points:

- Climate change adaptation is an adjustment in natural or human systems to respond to current or future climate impacts to reduce harm or take advantage of climate change. Human activities aimed at adapting to climate change are called adaptation activities.
- At the national level, adaptation is accomplished through policies, master planning, planning, and investments to address the challenges and opportunities that climate change presents.
- In Viet Nam, climate change adaptation activities are carried out according to the climate change NAP for the period 2021–2030, with a vision to 2050, which was issued together with the Prime Minister’ Decision No. 1055/QD-TTg, dated July 20, 2020.
- M&E helps the implementing agency to make decisions related to the plan activities and deliver the results of the plan to the beneficiaries based on objective evidence; M&E also contributes to accountability.
- M&E is important for the implementation of policies, master plans, plans, and investments to adapt to climate change at all levels. It monitors the progress of adaptation activities and the impact of these activities on reducing vulnerability; enhancing the adaptive capacity of economic, social, and natural systems; and improving living standards for communities affected by climate change.

2.2 Overview of the M&E System

2.2.1 Concept of the M&E System

A system that allows fully perform both M&E functions of climate change adaptation activities is called an M&E system. The national M&E system will assess adaptation progress in the whole country, including what has been achieved in the implementation of policies, plans, solution and

investments in adaptation, not only related to sectors and fields, but also related to the locality and the community.

The technical guidance for developing and implementing a NAP (LDC Expert Group, 2012) clearly states that the M&E system is an integral part of the NAP process (which also includes the development, implementation, and updating of the NAP). Accordingly, an M&E system was established to collect information during the NAP process and assess and provide results achieved on the country's climate change adaptation. The basic contents of a national M&E system include (i) identifying NAP activities and areas that can be assessed through qualitative and quantitative measurement to focus monitoring; (ii) identifying information and measurement tools to monitor progress and effectiveness; (iii) evaluating the results achieved and the effectiveness of the solutions and adaptive actions; as well as (iv) pointing out the deficiencies that need to be supplemented or adjusted and lessons learned in the NAP process.

A national adaptation M&E system may also include multiple components relating to different aspects of adaptation that fall across different time frames, all of which can combine to provide an overall picture of progress achieved (Leiter, 2020). Common components of a national adaptation M&E system are:

- Regular assessment of the country's vulnerability to climate hazards.
- A focus on monitoring the achievement of the objectives and the implementation of key solutions of the strategy/plan and an overall assessment of the impact of the strategy/plan.
- M&E of the programs or plans in the different sectors.
- M&E of specific adaptation activities, solutions, and projects.

Each of these components serves different purposes and thus provides different information on adaptation. Taken together, these components will complement each other and provide aggregate information on the country's climate change adaptation. In the United Kingdom, for example, a climate hazard assessment is carried out every 5 years, and an assessment of adaptation progress is carried out every year. In Germany, a vulnerability assessment is carried out every 7 years; trends based on national indicators are monitored for 15 sectors under the national adaptation strategy every 5 years; and national adaptation action plan implementation review reports are required every 4 years (Leiter, 2020).

2.2.2 The Basics of M&E Systems

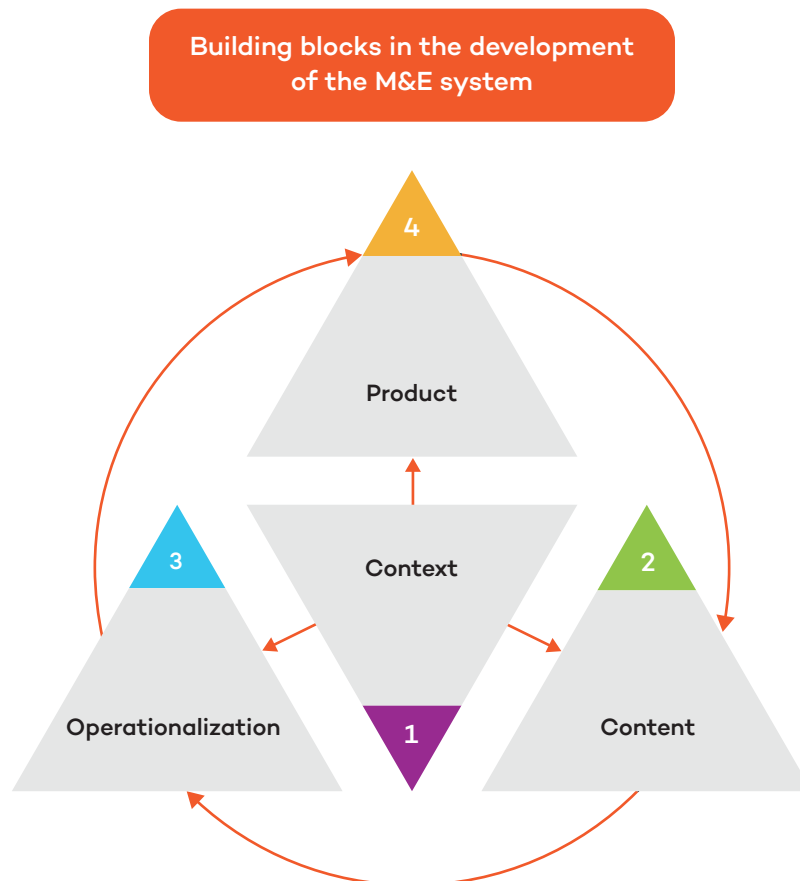
There are many different approaches to developing an M&E system. According to the guidelines for building a national M&E system for climate change adaptation (Price-Kelly et al., 2015), it is necessary to focus on four groups of issues: (i) the policy context and needs, (ii) the contents, (iii) implementation, and (iv) the products of the M&E system, as shown in Figure 2.

Within these four issue groups, the development of an M&E system needs to consider specific issues and answer the following related questions:

- How does the M&E of adaptation fit within the broader policy and M&E environment?
- What is the purpose of the M&E system and the intended use of its results?

- What are the levels of application and aggregation? The level of application of the M&E system refers to the level at which results are expected to appear (e.g., at the national, sub-national, or local level). An M&E system may be aggregated horizontally across thematic areas and sectors or vertically across geographic scales.

Figure 2. Building blocks in the development of the M&E system



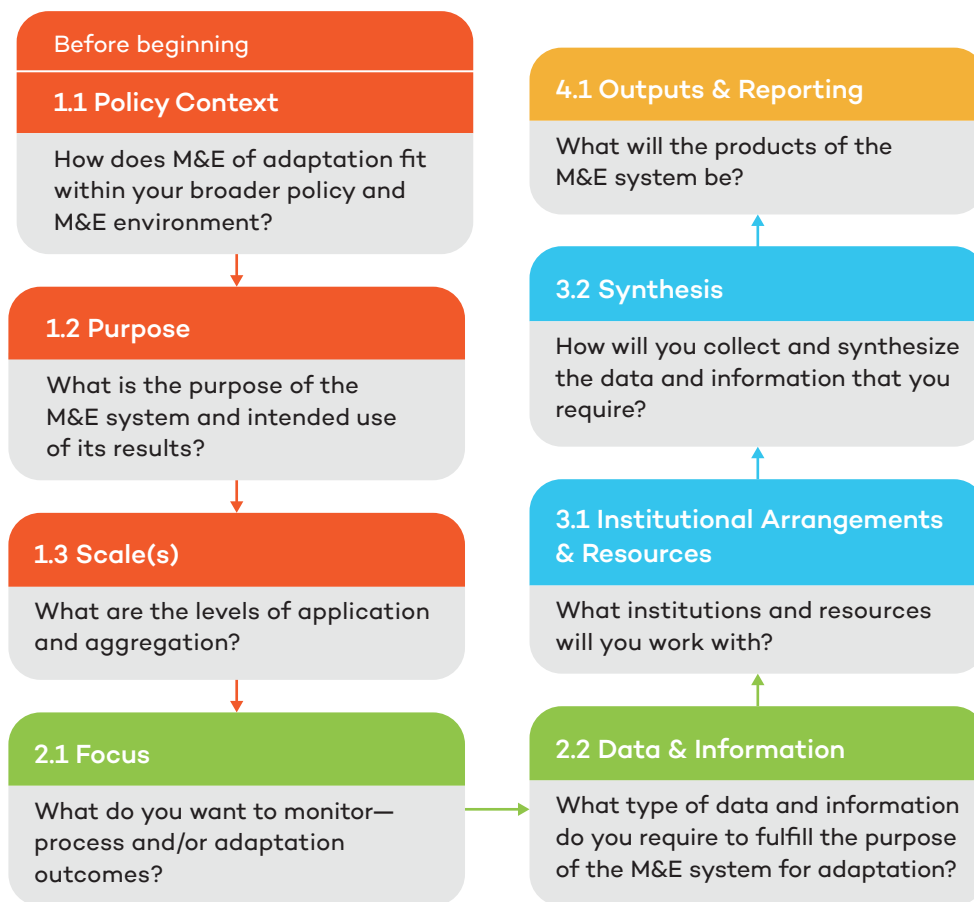
Source: Price-Kelly et al., 2015. *Developing National Adaptation Monitoring and Evaluation System: A guide book.*

- What are the M&E contents to be concerned about? The focus of the adaptation M&E system is related to its general purpose(s). A focus on process refers to monitoring advancement in implementing policies, plans, and/or interventions that address climate change adaptation. A focus on adaptation outcomes refers to assessing achieved results from the implementation of adaptation policies/actions.
- What type of data and information do you require to fulfill the purpose of the M&E system?
- What are the institutional arrangements and resources for implementation? What role will institutions and actors involved in the operationalization of the adaptation M&E system need to play, and what resources will they require to do so?

-
- How will the required data and information be collected and synthesized? This refers to the data and information required to meet the purposes of the M&E system and to the institutions and resources that will be involved in its operationalization.
 - Finally, what will the products of the M&E system be? “Products” refers to the packaging and dissemination of the M&E results (i.e., of the information generated by the adaptation M&E system).

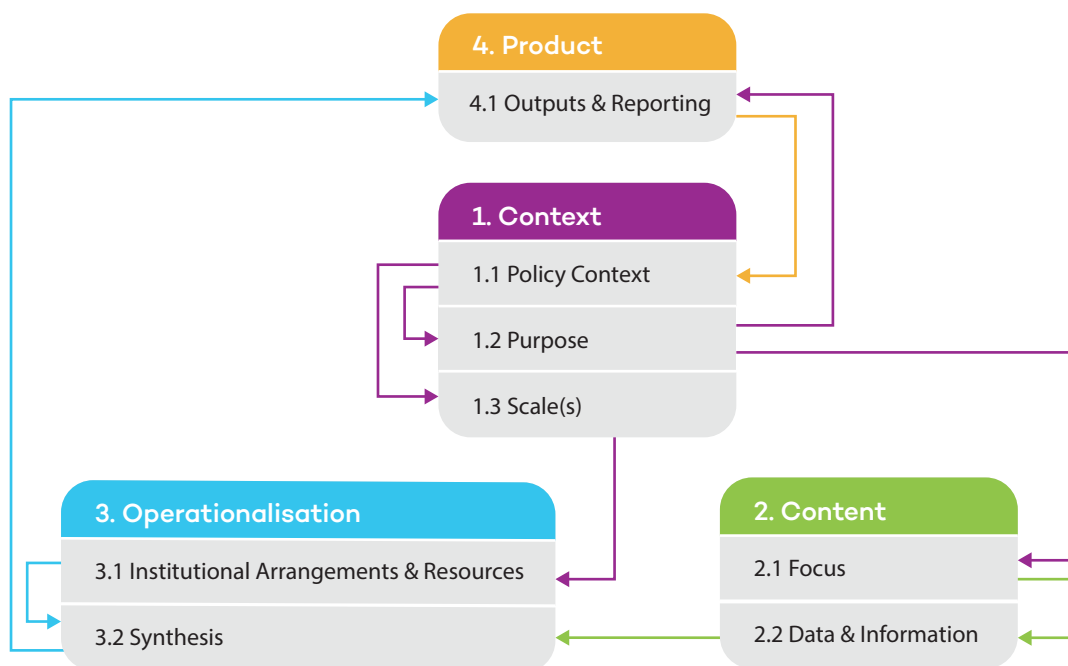
Figure 4 outlines the details of specific issue groups and related questions. The building blocks of an adaptation M&E system do not come together in a linear fashion (as illustrated in Figure 3); therefore, multiple entry points are possible. In the process of M&E development, all questions should be considered. An answer to one question may inform the answer to another and may need to be reconsidered at different stages, as mapped in Figure 4.

Figure 3. Questions to consider in the development of the M&E system



Source: Price-Kelly et al., 2015.

Figure 4. Interlinkages among considerations in the development of the M&E system



Source: Price-Kelly et al., 2015.

2.2.3 Viet Nam’s National System for M&E of Climate Change Adaptation Activities

The national M&E system for climate change adaptation (hereafter referred to as the “M&E system”) was approved by the Prime Minister in Decision No.148/QD-TTg, dated January 28, 2022. The main contents of the M&E system include:

a) The goals of the system

- Establish and operate a national M&E system to monitor and evaluate climate change adaptation activities.
- Provide a basis for the management, coordination, and improvement of the effectiveness of climate change adaptation activities and state management of climate change.

b) Scope and subjects of applying the system

- Determines the M&E contents and indicators and implementation responsibility and establishes an M&E system database of climate change adaptation activities.
- Applies to ministries, ministerial-level agencies, and provincial-level People’s Committees that carry out climate change adaptation activities under their management.

c) M&E contents

The system prescribes six groups of M&E content. The contents of each M&E group are summarized in Table 2:

Table 2. M&E contents

M&E groups	M&E contents
1. Government management of climate change	<ul style="list-style-type: none"> • Developing the legal framework, institutions and policies. • Formulating and issuing strategies, master plans, plans, programs, schemes, projects. • Formulating and issuing national technical standards, regulations, regulations and guidelines. • Preparing report on climate change adaptation. • Integrating content of climate change adaptation into strategies, master plans and plans. • Improving the organization, apparatus and human resources to respond to climate change.
2. Strengthen resilience and capacity to adapt to climate change in all fields	<ul style="list-style-type: none"> • Agriculture, forestry, fishery. • Environment and biodiversity. • Water resources. • Transportation. • Construction, urban. • Industry, commerce, service. • Medicine and public health.
	<ul style="list-style-type: none"> • Labor, society. • Culture, sport and tourism.

M&E groups	M&E contents
3. Reducing disaster risks and minimizing damage caused by climate change	<ul style="list-style-type: none"> • Hydro-meteorological observation; monitoring climate change, sea level rise and saltwater intrusion. • Disaster risk management.
4. Investment resources for climate change adaptation	<ul style="list-style-type: none"> • Investment resources. • Management and use of investment resources.
5. Science, technology and international cooperation	<ul style="list-style-type: none"> • Scientific research, technology application. • International cooperation.
6. Training, propaganda and awareness raising	<ul style="list-style-type: none"> • Professional training on climate change. • Propaganda and awareness raising activities on climate change.

M&E indicators for each M&E content are also issued under the Decision No.148/QD-TTg.

d) M&E database

An M&E database is to be built and operated as an online platform, ensuring information security. The M&E database should have database management software and all M&E information, including progress and results of the implementation of climate change adaptation activities; M&E reports by ministries, ministerial-level agencies, provincial-level People's Committees; and other relevant information.

e) Responsibility for implementation

- MONRE is the focal agency of the M&E system and is responsible for (i) assuming primary responsibility and coordinating with ministries, ministerial-level agencies, and provincial and municipal People's Committees in organizing the implementation of the M&E system under this decision; (ii) organizing the M&E of climate change adaptation activities within the scope of management; (iii) building and managing a database on M&E of climate change adaptation activities to ensure the provision and sharing of updated information on progress and results of implementation of adaptation activities; (iv) developing the online database for reporting the M&E results; (v) supporting ministries, ministerial-level agencies, and provincial and municipal People's Committees to implement the M&E system; (vi) assuming primary responsibility and coordinating with ministries, ministerial-level agencies, and provincial and municipal People's Committees in organizing a comprehensive assessment of the results of implementation of climate change adaptation activities every 5 years; and (vii) synthesizing and developing reports on M&E of climate change adaptation activities for the purposes of government management of climate change.

- Ministries, ministerial-level agencies, and provincial-level People’s Committees are responsible for (i) organizing the M&E of climate change adaptation activities under their management; (ii) updating information on progress and the results of the implementation of climate change adaptation activities in the M&E system database; and (iii) reporting on the results of M&E before December 25 of each year through the online system under the guidance of MONRE.

e) Implementation cost

Funds for the organization and implementation of the M&E system may be used from the state budget and other lawfully mobilized sources in accordance with the regulations of current laws.

Figure 5 shows a summary of the contents and the report flow of national M&E of climate change adaptation activities in Viet Nam. In this figure, the “M&E contents” means the contents that should be aggregated, evaluated, and explained in the M&E reports at the national, ministerial, and provincial levels.

Figure 5. A summary of M&E contents and report flow

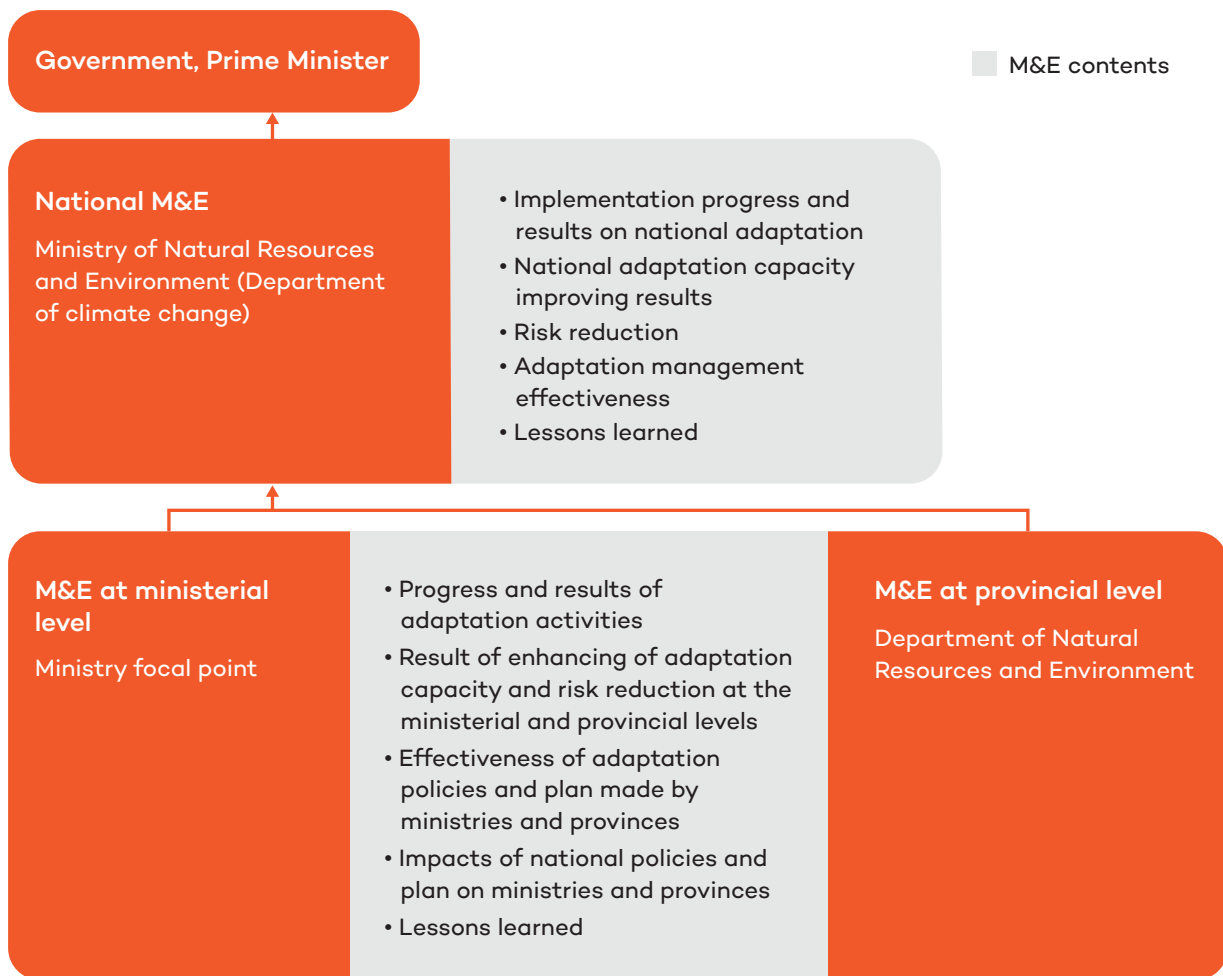
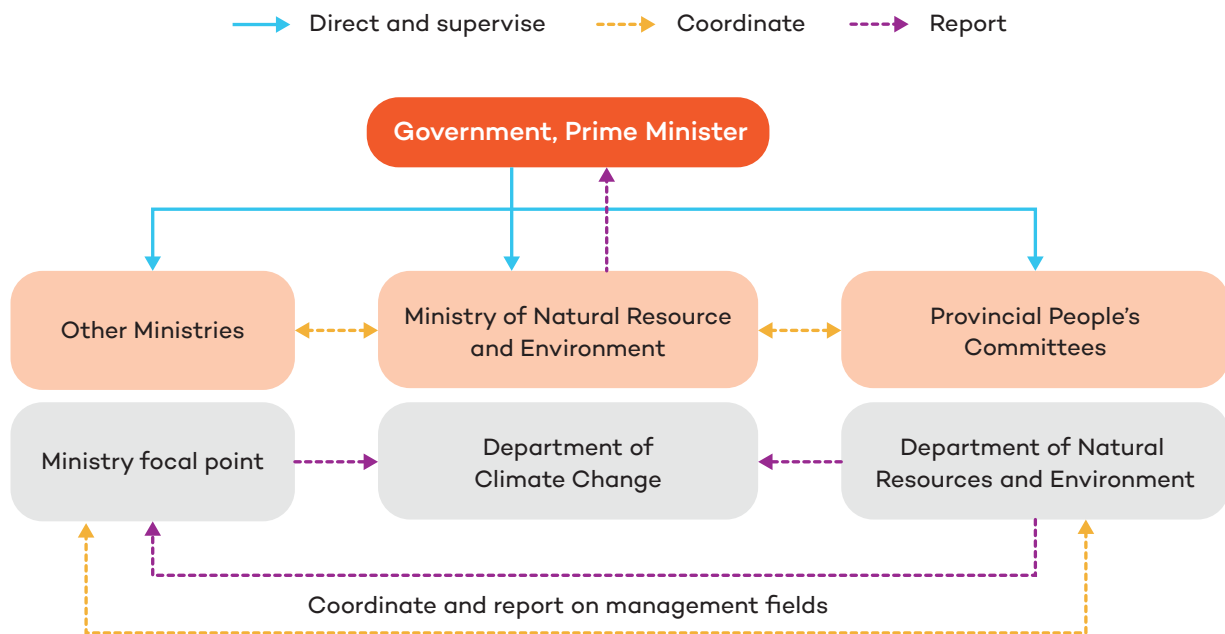


Figure 6 shows a diagram depicting the organization, supervision, and coordination of M&E system implementation. MONRE is the focal agency of the national M&E system; the Department of Climate Change acts as a standing agency, assisting the focal agency. At the ministerial/sectoral level, the focal point for M&E is usually assigned to a departmental unit. For example, for the Ministry of Agriculture and Rural Development (MARD), it is the Department of Science, Technology and Environment; for the Ministry of Transport (MOT), it is the Department of Environment. At the provincial level, the Department of Natural Resources and Environment is the focal point for M&E of climate change adaptation activities.

Figure 6. Organization, supervision, and coordination of the implementation of the M&E system



Key points:

- A system that enables the M&E of different components of climate change adaptation activities is called an M&E system. The national M&E system will support the assessment of progress in adaptation in the whole country.
- The M&E system is an integral part of the NAP process, which also includes developing, implementing, and updating the NAP.
- In setting up an M&E system, the focus should be on the four groups of issues: the policy context and needs, the contents, the implementation, the products of the M&E system.
- In Viet Nam, the national M&E system for climate change adaptation was approved by the Prime Minister in Decision No.148/QD-TTg, dated January 28, 2022.
- Implementation of the M&E system, associated with the implementation of the NAP, is the responsibility of ministries, ministerial-level agencies, and provincial and municipal People's Committees.

2.3 Overview of Adaptation M&E Indicators

2.3.1 The General Concept of M&E Indicators

M&E indicators are developed to quantify the success or effectiveness of a climate change adaptation action. Indicators are used for two purposes: (i) to measure progress toward adaptation objectives; and (ii) to assess the contribution of specific actions to adaptation priority goals (Thuc et al., 2021).

M&E indicators support the practical applicability of the M&E system and serve many purposes (Thuc et al., 2021). Indicators provide information on when results have been achieved or have not been achieved, act as a guide for results, and provide guidance adjustments for current adaptation activities and decisions for future adaptation activities. Indicators are developed for the results-based M&E system at all levels, monitoring progress and effectiveness for inputs, activities, outputs, results, and long-term goals. M&E indicators can provide valuable knowledge for adaptive management. They also provide evaluation evidence for successful adaptation activities and lessons learned to guide future adaptation solutions or policies.

It is also important to note that indicators are only signals (Thuc et al., 2021). M&E indicators cannot reflect all aspects of an adaptation activity. Users sometimes need to analyze different data to get accurate assessment results. The set of M&E indicators is considered a part of the entire M&E system, supporting evidence-based M&E and contributing to raising awareness in climate change adaptation.

There are many types of indicators in the M&E system that are either **qualitative** or **quantitative**. Quantitative indicators represent numerical information (percentages, absolute numbers) while qualitative indicators are descriptive judgments or observations. In the Appendix, examples of quantitative indicators include, among others, the “number of inter-reservoir operating procedures in river basins reviewed and adjusted” and the “percentage of households in disaster-prone areas that have been relocated to a safe place.” An example of a qualitative indicator might be that “medical facilities are capable of treating climate-sensitive diseases.” The **output** indicators measure the quantity and efficiency of goods and services made/produced. Examples of output indicators in adaptation might be the number of hectares of land protected by a saltwater intrusion prevention facility or the number of storm shelters built according to a province’s disaster prevention plan in a given period.

Outcome indicators measure the results achieved in broader terms. For example, they can be used to measure the benefits of an activity or the consequences of achieving specific outputs through the provision of goods and services (Leagnarar et al., 2015). In the example above of the saltwater intrusion prevention project, the outcome indicator can reflect the effectiveness of the project, a change in perception in implementing solutions to prevent saltwater intrusion, etc. **Progress indicators** track progress toward adaptive action goals rather than tracking specific results achieved. Process-based indicators do not measure the effectiveness or end results; rather, they typically track and measure performance at a given point in time (Pringle, 2011). In addition, there are **adaptation action indicators** that statistic on the types of adaptation activities carried out and **impact indicators** that show the important changes

and developments that can be achieved through implementing adaptation. Table 3 compares outcome and impact indicators in adaptation.

Table 3. Examples of outcome and impact indicators

Adaptation activities: Promoting agricultural production efficiently and sustainability	
Outcome indicators	Impact indicators
<ul style="list-style-type: none"> • Improved climate data collection and analysis • Changing people’s perception in implementing adaptive solutions • Improved water resource management 	<ul style="list-style-type: none"> • Stable long-term productivity • Improvement in water and soil • Water quality and flow maintained • Changes in ecological footprint

Source: Leagnavar et al., 2015.

2.3.2 Adaptation M&E Indicators: Development approach

Indicators are developed in accordance with the M&E framework, which proposes a set of M&E indicators that follow both top-down and bottom-up approaches. For example, the top-down frameworks for multilateral funds and institutions make heavy use of quantitative indicators, while the bottom-up frameworks with a focus on cost-benefit analysis will mainly use qualitative indicators. Indicators support M&E systems and provide information on change arising from interventions. Indicators can be used as an accountability tool (measurement of performance and reporting), a management tool (monitoring performance, providing data to direct interventions), and a learning tool (providing evidence of what works and why) (Thuc et al., 2021).

The Tracking Adaptation and Measuring Development (TAMD) framework was developed by the International Institute for Environment and Development and its partners to assess adaptation-related development and adaptation interventions in different situations. TAMD is a “twin-track” framework: (i) Assessment Direction 1 using upstream indicators, assesses the extent and quality of climate risk management processes and actions, combined with (ii) Assessment Direction 2 using downstream indicators to assess adaptation interventions that have been successful in mitigating vulnerability and continuing to develop on schedule in dealing with climate change risks (Brooks et al., 2013). “Upstream” indicators represent progress in integrating climate risk management into development processes, actions, and institutions. “Downstream” indicators represent the impacts of adaptation interventions on development at the site of implementation in terms of impact on outcomes and vulnerability to development.

Building a set of adaptive M&E indicators is a step-by-step process (Thuc et al., 2021). Accordingly, there are four basic steps: (i) assess the adaptation context; (ii) identify contributions to the adaptation process; (iii) develop a results-based M&E framework; and (iv) identify indicators.

Indicators are determined according to the quality criteria of the SMART rule (Olivier et al., 2012):

- Specific: The indicator is developed accurately, without ambiguity
- Measurable: The indicator can be quantified
- Attainable: The indicator is attainable
- Relevance: The indicator is valid and describes the problem properly
- Time-bound: There is a clear time frame.

Sets of M&E indicators for climate change adaptation at national, provincial and project levels have been established and proposed for Viet Nam based on the results-based M&E framework for adaptation projects proposed by Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH (Olivier et al., 2012) and the TAMD framework (Brooks & Fisher, 2014), both top-down and bottom-up approaches (Thuc et al., 2021). Accordingly, the top-down approach is applied to develop (i) a set of indicators for monitoring and evaluating climate change adaptation activities at the national level and (ii) a set of indicators for synthesizing, monitoring, and evaluating adaptation activities at the national level for the strengthening of adaptive capacity at the provincial level. The bottom-up approach was applied to develop (i) a set of indicators for monitoring and evaluating climate change adaptation activities at the provincial level and (ii) a set of indicators to synthesize, monitor, and evaluate adaptation activities at the provincial level for the achievement of national adaptation goals.

M&E indicators can also be determined through consultation to select appropriate indicators. For example, in Kenya, based on the TAMD framework, the NAP M&E indicators are proposed for the provincial, sectoral, and national levels. Following a top-down approach, Kenya has developed 63 country-level indicators, which are process indicators that measure institutional resilience for more than 300 adaptation actions. From these 63 indicators, 28 indicators based on provincial results are proposed. Through consultation activities, the set of indicators is then filtered into 10 indicators. For the bottom-up approach, stakeholder consultation was also carried out to assess and measure a set of indicators of vulnerability to complement the 63 indicators of adaptive capacity related to institutional resilience developed through a top-down approach. Accordingly, 62 provincial indicators (from the bottom up) on vulnerability assessment have been developed. Based on these provincial indicators, 27 national outcome-based indicators are identified, and then 10 are selected through consultation. The objective of these indicators is to assess and measure the effectiveness of adaptation actions at the local and provincial levels in contributing to efforts to reduce vulnerability at the national level (OECD, 2015b; Thuc et al. al., 2021).

2.3.3 Challenges in Developing M&E Indicators

Challenges in the development of M&E indicators go hand in hand with common difficulties in developing and operating M&E systems, such as limited awareness and experience, a lack of data for analysis, a lack of active participation of stakeholders, etc. In addition, the nature of climate change adaptation is that it creates obstacles to developing M&E systems, including choosing the appropriate M&E indicators.

There are often difficulties encountered in the process of building an M&E system (Leagnarar et al., 2015; OECD, 2015a; Spearman & McGray, 2011; Thuc et al., 2021), including:

- Adaptation to climate change is a long-term process that affects many different aspects and is accomplished by a series of different actions working toward the same adaptation goal. Besides, climate change is often not the only cause of adaptation challenges—some other causes may be due to socio-economic development and carry a need to address the structural causes of vulnerability, such as poverty and inequality. Therefore, it is difficult to identify a desired change as being due to a particular adaptation action. It is therefore also possible to approach assessment with a focus on determining how an adaptation action will contribute to an expected outcome.
- Identifying the problem of adaptation in some cases may not be appropriate (maladaptation) and sometimes adaptation actions can be unsuccessful due to the failure to achieve the stated objectives or due to unwanted negative side effects.
- A non-adaptive assumption is not easy one. A non-adaptive assumption is a comparison between what would actually happen when adaptation actions are taken and what would happen if no adaptive actions are taken. In fact, some adaptation to climate change will always happen, including through both the intentional and unintentional adaptation activities of humans and the self-adjustment and self-adaptation of the natural system.
- Since national adaptation policies often do not indicate specific and measurable targets, it is often difficult to develop baselines for adaptation. Adaptation policies almost exclusively offer methods to achieve the adaptation goals of reducing vulnerability and increasing resilience. For adaptation to climate change, when natural baseline conditions change in new and uncertain directions, comparisons between the effectiveness of adaptation to the baseline prior to adaptation intervention can be less accurate.
- Some results of adaptation activities can only be seen and evaluated a number of years after completion. This timeline sometimes goes beyond that required by the M&E plan or program. For example, a project to build a reservoir for agricultural irrigation in an arid area will take about 3–5 years. The effectiveness of that reservoir for agriculture in the area may only be observed in the years following the project.
- Climate change adaptation is essentially a dynamic goal because exposure to climate change-related hazards can change during adaptation planning. The goals set at the beginning of a plan or project may not coincide with the goals set at the end. For example, a dam projected to prevent long-term saltwater intrusion may have to be rebuilt after 25 years of operation because of an increase in the level of saltwater intrusion. That increase could be partly due to an increase in storm intensity that causes the water level to increase in the seashore area and partly due to the lack of river water from upstream. These changes may all be caused by climate change.
- The inter-ministerial and interdisciplinary nature of adaptation can pose some challenges. Adaptation covers a wide variety of subjects from national to local levels, between ministries and sectors, and between the public and private sectors. Identifying measures for mainstreaming climate risk and vulnerability in existing plans and policies is part of the solution. M&E therefore needs to look at the whole system and consider the linkages between different institutional arrangements.

-
- Distinguishing adaptation tasks/projects from normal socio-economic development tasks/projects is also a challenge. In essence, development tasks/projects in the context of climate change are mainly socio-economic (for example, basic construction, urban development, rural development, etc.), and adapting to climate change is an attached and binding requirement. Climate change adaptation tasks/projects mainly aim to strengthen the resilience capacity of the socio-economic system and reduce vulnerability to the impacts of climate change that are currently taking place or are imminent, while the goal of socio-economic development is accompaniment goal and/or combine goal.

In reality, development is also about enhancing people's capacity to respond to external influences, including climate impacts, thus contributing to climate change adaptation. Likewise, adaptation to climate change can facilitate the achievement of development goals through increased resilience. A climate change adaptation task/project, when implemented, will have an impact on the socio-economic development process of the country, sector, and locality. Distinguishing development from climate change adaptation can help better track resources and measure return on investment or climate change adaptation outcomes of tasks/projects, but sometimes it is hard to implement.

- In addition, some adaptation actions may not have baseline data as a basis for comparison and assessment. The impact or effects of some adaptation activities is difficult to assess specifically and clearly.

2.3.4 A Set of Monitoring Indicators to Assess Viet Nam's National Climate Change Adaptation Activities

The set of M&E indicators issued together with the Prime Minister's Decision No.148/QD-TTg includes 72 indicators divided into six large groups:

Group 1. State management of climate change

There are 17 M&E indicators on the following contents: developing the legal framework, institutions and policies (3); formulating and issuing strategies, master plans, plans, programs, schemes, and projects (4); formulating and issuing national technical standards and regulations, regulations, and technical guidelines (3); reports on climate change adaptation (3); mainstreaming climate change adaptation into strategies, master plans, and plans (2); improving the organization, apparatus, and human resources for climate change response (2).

Group 2. Strengthening resilience and capacity to adapt to climate change in all fields

There are 32 M&E indicators according in the fields of agriculture, forestry, fisheries (6); environment and biodiversity (5); water resources (4); transportation (2); construction, urban (3) industry, commerce, service (3) health and community health (3) labor and society (3) Culture, sports, and tourism (3).

Group 3. Mitigating natural disaster risks, minimizing damage caused by climate change

There are 10 M&E indicators according to the following contents: hydrometeorological observation; climate change, sea level rise, and saltwater intrusion monitoring (3); disaster risk management (7).

Group 4. Investment resources for climate change adaptation

There are four M&E indicators according to the following contents: investment resources (3); management and use of investment resources (1).

Group 5. Science, technology, and international cooperation

There are five monitoring indicators according to the following contents: scientific research, technology application (3); international cooperation (2).

Group 6. Training, propaganda, and awareness raising

There are four M&E indicators according to the following contents: professional training on climate change (2); propaganda and awareness-raising activities on climate change (2).

Most of the M&E indicators issued under Decision No.148/QD-TTg are quantitative indicators, and the focus of M&E is mainly based on results. In the process of annual M&E, some indicators are required to report on the status of implementation, which partly represents the M&E process. For example, Group 1, content “improving institutions and policies,” indicator 1.2 “number of legal documents related to climate change adaptation developed and issued,” is required to report by the title of document type (result) and status of “under construction” or “released” (process).

Detailed instructions on data collection and calculation of M&E indicators are provided in Section 3 of this M&E manual

Key points:

- M&E indicators are developed to quantify the success or effectiveness of climate change adaptation actions. Indicators are used to measure progress toward adaptation objectives and assess the contribution of specific actions to adaptation priority goals.
- M&E indicators are only signals and cannot reflect all aspects of an adaptation activity. Users sometimes need to analyze different data to get accurate assessment results. The set of M&E indicators is considered a part of the entire M&E system, supporting evidence-based M&E and contributing to raising awareness in climate change adaptation.
- Indicators are developed in accordance with the M&E framework in a step-by-step manner and can also be developed through a consultation to select appropriate indicators.
- In Viet Nam, the set of M&E indicators was issued alongside the Prime Minister’s Decision No.148/QD-TTg approving the M&E system.
- The set includes 72 indicators divided into six groups: state management of climate change; strengthening resilience, capacity to adapt to climate change in all fields; mitigating natural disaster risks, minimizing damage caused by climate change; investment resources for climate change adaptation; science, technology, and international cooperation; and training, propaganda, and awareness raising.

3.0 Guidelines for Information Collection and Data Calculation on M&E Indicators

3.1 Common Issues

Instructions for information collection and data calculation are made for each M&E indicator as specified in Appendix I, issued under Decision No.148/QD-TTg.

Specific guidance contents for each indicator include:

- Name of M&E indicator: According to the name in Appendix I, Decision No.148/QD-TTg.
- Explanation of indicators: Explain the meaning or purpose of the indicator.
- Data/information to be collected: List the data/information to be collected. The data/information to be collected not only serves the calculation according to the prescribed requirements for the indicator but also satisfies the contents to be aggregated in the M&E report specified in Appendix II, Decision No.148/QD-TTg.
- Method of calculation: Instructions for calculating or aggregating statistics according to the collected information. Some indicators only measure performance and will not include computation.
- Reporting period: The period of time within which information needs to be collected, summarized, and reported. According to the provisions of Decision No.148/QD-TTg, the reporting period is annual.
- Data sources/documents: Agencies, units, and focal points that can provide information and documents for M&E indicators (collectively referred to as related agencies and units).
- Responsible authority: The agency that aggregates, synthesizes information, calculates indicators, and prepares M&E reports. At the ministerial/sectoral level, that is the agency assigned to be in charge or be the focal point for climate change. At the local level (provincial level), the agency is the Department of Natural Resources and Environment.

For M&E indicators, both ministries/sectors and localities are required to jointly implement; ministries/sectors and localities only collect information and data under their management to ensure that there are no duplicates (information and data are counted twice).

3.2 Guidelines for Information Collection and Data Calculation for the M&E Indicators at the Ministerial/ Sectoral Level

Guidelines have been developed for 72 M&E indicators for implementation at the ministry/ sector levels in accordance with Decision No.148/QD-TTg. Details can be found in Table A1 in the Appendix of this manual.

3.3 Guidelines for Information Collection and Data Calculation for M&E Indicators at the Local Level

Guidelines have been developed for 58 M&E indicators for implementation at the local level according to the provisions of Decision No. 148/QD-TTg. Details can be found in Table A2 in the Appendix of this manual.

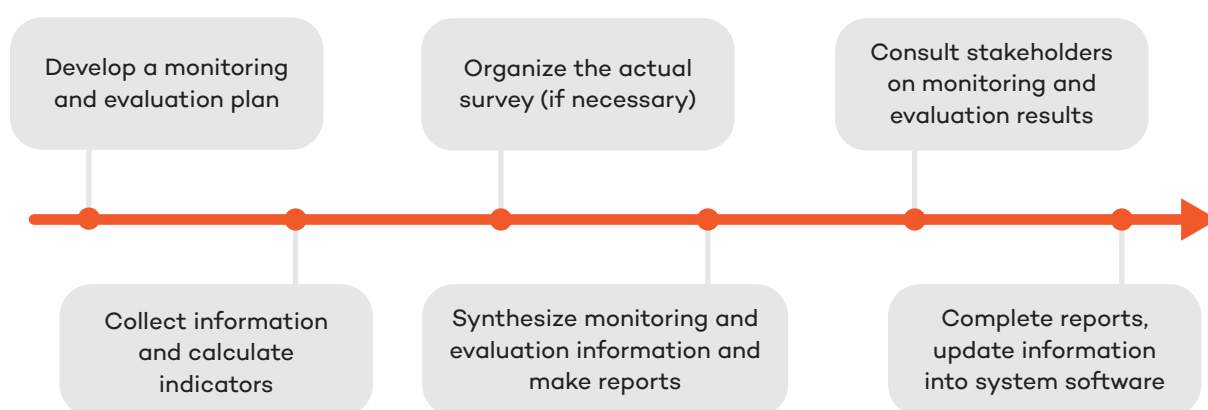
4.0 Instructions for the Monitoring, Evaluation and Reporting Process

4.1 The M&E Process for Ministries/Sectors and Localities

4.1.1 Process Summary

The process of monitoring, evaluating, and reporting includes the steps depicted in Figure 7.

Figure 7. The process of monitoring, evaluating, and reporting



Basically, the monitoring, evaluation, and reporting process for ministries/sectors and localities consists of the same six steps. In each step, the specific implementation content of the ministry/sectoral level and the local level, if there is any difference, will be mentioned in the detailed step-by-step instructions. The content of the steps is summarized in Figure 8.

The ministries' climate change agency/focal point and the localities' natural resources and environment departments should take these steps in the monitoring, evaluation, and reporting process.

Figure 8. Summary of content of monitoring and evaluation by steps



4.1.2 Detailed Instructions on the Contents of the Steps

STEP 1. Developing an M&E Plan

Defining goals and content

Objectives of M&E adaptation activities of ministries and localities must be closely aligned with the objectives defined in Decision No.148/QD-TTg.

M&E contents are determined based on M&E contents and indicators under the responsibility of ministries and localities as prescribed in Decision No.148/QD-TTg.

Identifying stakeholders in the M&E process

Based on the contents and requirements of collecting information for M&E indicators to identify relevant agencies and units (hereinafter referred to as related parties) in the process of M&E. At the ministerial/sectoral level, stakeholders include general departments, agencies, departments managing fields related to adaptation, and units and enterprises participating in the implementation of adaptation tasks/projects under the management of ministries or branches.

At the provincial level, stakeholders include provincial departments, districts, towns (collectively referred to as the district level), and units and enterprises participating in the implementation of adaptation tasks/projects within the management scope of the province.

Determining the method of information collection

Based on the set of M&E indicators, the data/information needs to be collected for each indicator according to the guidelines, the operationalization of the organization, the management model, and the availability of information to determine the method of collecting information. Information can be collected through available reports according to the regulations of ministries, branches, and localities. Examples include statistical yearbooks; periodical reports (quarterly reports, 6-month reports); annual reports of units under ministries, branches, and localities; and reports on the implementation progress of tasks/projects of the unit or enterprise in charge of implementation. The focal point carrying out the M&E work can also send a document to the relevant parties requesting/requiring a report, providing specific data related to the M&E contents.

Determining the assessment method

Based on the content and the set of indicators, the main evaluation method will be the “objectives–results” method. The assessment is based on the progress and results of the implementation compared to the targets set by the climate change adaptation plan of the ministries, branches, and localities on the basis of the NAP. The “before–after” method is applied to analyze and evaluate through the comparison of performance results between the current year and previous years. The comparison also need to be done with the results of strengthening resilience, improving the adaptive capacity of communities, economic sectors and ecosystems; the results of reducing disaster risk and reducing damage caused by natural disasters in the current year and the results of that in previous year or in the period before the implementation of adaptation activities. Another method is to compare a locality that carries out adaptation activities with other localities with similar natural and social conditions without performing adaptation actions.

Developing a detailed plan

The detailed plan should include the following contents: the objectives of M&E activities, the scope of M&E activities, content and tasks to be implemented, methods of implementation, products and requirements to be met, implementation progress, human resources, and implementation costs. Funding sources for M&E shall comply with the provisions of Decision No.148/QĐ-TTg. The focal point for M&E should actively develop a plan in accordance with current regulations to ensure adequate resources and establish a time frame for implementation.

STEP 2. Collecting Data/Information and Calculations for Indicators

Collecting data/information

Collect data and information related to M&E indicators according to the instructions in the tables specified in Section 3 of this M&E manual (the content of “data/information need to be collected” in each monitoring indicator).

Handling issues when detecting suspicious data and information

When detecting incomplete, incorrect, contradictory, or duplicate data and information (collectively called suspicious/questionable information), the agency performing the synthesis and evaluation work should contact, exchange, and consult with agencies, authorities, or the focal point providing information for clarification. This can be a face-to-face meeting or a written request for explanation and supplementation. If the questions still cannot be clarified through consultation, the actual survey can be carried out according to the provisions of Step 3.

Calculate the indicator

Calculate indicators according to specific instructions in the tables specified in Section 3 of this M&E manual. Some indicators have specific calculation formulas; some indicators do not have a calculation formula but only statistical and aggregated results.

STEP 3. Field Survey

If suspicious/questionable information is detected and consultation with the supplier and related parties does not clarify it, field surveys can be carried out when it is deemed necessary to collect additional information for M&E. The focal point for M&E should develop a survey plan in advance with a clear survey period, content, personnel, and location. Stakeholders or people who are expected to work with or interview in the survey need to be informed about the survey plan in advance to be well prepared. The content of the survey, investigation, and interview should clarify the results of adaptation activities and the accuracy of collected data and information for M&E. At the same time, the survey could collect additional information to help the evaluation agency have a realistic view of the implementation situation to analyze, synthesize, and develop M&E reports.

STEP 4. Synthesizing the M&E Information and Report

Reporting framework

The reporting framework is provided in Appendix II of Decision No.148/QD-TTg of the Prime Minister. Ministries, sectors, and localities share this reporting framework. The content of the report on M&E results aligns with the M&E indicators specified for ministries, branches, and localities (Appendix I, issued together with Decision No.148/QD-TTg).

Synthesize information into the reporting framework

The results of M&E are synthesized into a report according to indicators (following the instructions in Section 3 of this M&E manual) and according to specific requirements in the items and tables listed in the reporting framework. For the contents related to the formulation and issue of legal documents and other documents such as: policy mechanisms; strategies, plans, programs, schemes, and projects; national technical standards and regulations, technical regulations, guidelines; and adaptation reports, it should be clearly addressed the status of documents at the time of reporting. If the document is in the process of being developed, it is necessary to clearly report the status, such as: whether it had an approved developing plan or what times of the drafted version; whether it is seeking internal consultations, consulting ministries, branches, localities or is submitting to competent authorities for consideration and approval. If the document has been approved, clearly report the date, decision

number, and approval level. Where the relevant M&E indicators have collected data and information that are questionable, it is necessary to include full notes or additional explanations. For localities, some contents in the tables of M&E reports without relevant M&E indicators will be left blank.

Evaluate

This is the most important part of the M&E report. This section is composed of three elements: (i) evaluation of the implementation results, (ii) analysis of difficulties and problems, and (iii) recommendations and proposals.

i) Evaluation of the implementation results

First, it is necessary to make a general assessment of the results of implementing climate change adaptation activities according to the M&E indicators. Evaluate what specific results are achieved (right volume and schedule), any results that exceed the plan, and which results are partially achieved (percentage) and which are not according to the plan.

Second, it is necessary to compare/contrast the objectives of the adaptation plan to identify and evaluate the situation and results of adaptation activities that have contributed to achieving the identified goals. At the ministerial and sectoral level, the targets align with the management sectors in the adaptation plans of the ministries and branches. At local level, the targets align with the sectors, local areas (if any) in the local adaptation plan. These statements and assessments need to be illustrated with specific data/information.

Third, an overall assessment of how the implementation of adaptation activities by ministries, sectors, and localities has contributed to the achievement of the NAP objectives, including:

- Evaluating how the activities strengthen state management on climate change adaptation (issuing of legal documents, mechanisms and policies, standards, regulations, etc.) and mainstreaming climate change adaptation into the system of strategies and planning have contributed to improving the effectiveness of climate change adaptation.
- Evaluating how the investment in adaptation activities, research, application of science and technology, propaganda, awareness raising, etc., have contributed to strengthening resilience and improving the adaptive capacity of fields under the management of ministries (for the ministerial level) and of economic sectors, ecosystems, and communities in the local area, including evaluation of who has benefited and who has not from adaptation actions (for provincial level).
- Assessing the results of disaster risk reduction, loss and damage reduction, and preparedness to respond to natural disasters and climate extremes that have increased due to climate change in the management field (ministerial level, sectoral level) and in the management area (provincial level).

Fourth, lessons learned for M&E must be highlighted for all stages, including organizing, managing, and implementing climate change adaptation activities at ministries, sectors,

and localities. It is also necessary to point out lessons learned related to gender equality and social security and those that may contribute to broadening the scope of the interventions (adaptation activities) and upscaling program successes for greater impacts.

From the second evaluation year onwards, the evaluation section should include a comparison of the achieved results alongside the results of the preceding year. Contents for comparison and evaluation include results, progress, and implementation (innovations, improvements, and adjustments, if any).

ii) Analyzing difficulties and problems

The report should point out the difficulties and problems in organizing, managing, implementing, monitoring, and evaluating climate change adaptation activities in ministries, sectors, and localities. It should clearly state and analyze difficulties and specific problems in terms of processes, procedures, coordination mechanisms, financial regulations, resources (human, financial), professional issues, etc. In addition, it is necessary to analyze the shortcomings of M&E results, such as the reliability of data, problems with limitations, a lack of information, etc.

The agency in charge of monitoring should also indicate the causes of difficulties and problems in implementing adaptation activities and M&E. Causes can be divided into two groups:

1. Problems with the planning and content of adaptation activities; requirements in M&E and M&E indicators identified but still deficient (e.g., inappropriate, infeasible, not close to the reality of ministries, branches, sectors, and localities, etc.).
2. Unsatisfactory organizational performance (e.g., unclear assignment of responsibility, poor management, poor compliance with requirements, compliance due to lack of budget, unresponsive human resources, etc.).

iii) Proposals and recommendations

On the basis of the results of implementation and the above-mentioned difficulties and shortcomings, recommendations are made according to the following groups of issues:

- Recommendations and proposals for solutions to management at all levels to overcome and remove difficulties and problems in order to continue effectively implementing adaptation activities as planned.
- Recommendations and proposals for the adjustments of the current adaptation plan (if any) and issues that need to be considered and perfected in the development of the next adaptation plan; proposals for adjustments and supplements to improve the M&E system and the set of M&E indicators at the national and ministerial, branch, and local levels (if any).
- Recommendations and proposals for the implementation of adaptation activities and M&E within the scope of management at the ministerial, local, and national levels (if any).

STEP 5. Consultation of M&E Results

Defining the content, requesting consultations

Content to be consulted includes M&E results according to indicators, results of the information synthesis, and M&E reports. Consultation must ensure objective requirements and the full participation of stakeholders. At the ministerial level, stakeholders are: agencies and units involved in providing M&E data/information and other state management agencies related to adaptation activities under the ministry. At the provincial level, stakeholders are: agencies and units that provide M&E data/information; other departments and branches related to adaptation activities; socio-political organizations (youth, women, etc.) and non-state organizations that carry out adaptation activities in the community (if applicable).

Organizing consultations

The focal agency in charge of M&E can organize consultations in two forms:

- a) Consultation in writing: Send a consultation request and the M&E drafted report to the agency or unit in need of consultation for an official opinion. The request for consultation should clearly state the issues to be considered and the time limit for a reply and the form of the written response (official letter, email, etc.).
- b) Direct consultation through meetings or workshops. In this case, the lead agency should carefully prepare the content to be considered, invite the right participants, arrange a reasonable time, choose an appropriate form and scale of meeting/workshop to ensure the quality of the consultation and meaningful participation by groups that are typically excluded.

STEP 6. Finalizing the Report and Updating Information on the Online Reporting Platform

On the basis of comments and information collected, supplemented, and updated during the consultation process, the focal agency completes the M&E report and applies for approval from the competent authority. It then updates M&E information in the online reporting system.

4.2 Update Information and Submit a Report on the Online Reporting System

According to Decision No.148/QĐ-TTg, MONRE is responsible for developing software to report M&E results online and guiding ministries, ministerial-level agencies, and provincial People's Committees in implementing the M&E system.

Deploying the assigned tasks, the Department of Climate Change has coordinated with experts, agencies, ministries, and provinces to develop an online M&E system. The system is integrated into the web portal of the database on climate change adaptation (<http://adaptation.dcc.gov.vn>) with versions in both English and Vietnamese. The system is built using a Content Management System within a core WordPress system. WordPress has open-source code for blogs/website publishing. The system is written in PHP programming language using MySQL for the database, ensuring functions and high security, ample storage for information data, fast access

and processing speed, and a beautiful interface. It is stable, easy to use, and works on many operating systems providing a large system. The system allows ministries, sectors, and localities online access to declare , edit, make statistics , manage, and submit online M&E reports.

4.2.1 Objectives

The M&E online system, as shown in Figure 9, has been developed to support agencies and localities in updating M&E report information online. The system is designed to:

- Allow management staff to collect and synthesize data and more quickly develop reports on the M&E of climate change adaptation activities.
- Allow ministries, ministerial-level agencies, and provincial and municipal People’s Committees to update and report basic information on M&E online.
- Ensure information protection in development and online operations.

4.2.2 Contents of the M&E Online System

The M&E online system is a part of the climate change adaptation database. Basically, the M&E online system supports ministries and localities in making online M&E reports. Each ministry or locality is provided with an account to access the system and implement steps on reporting. In this system, users can explore efficient tools in the reporting process. It is an efficient way to help focal points synthesize and finalize M&E reports.

The online M&E interface system includes seven main functions, as shown in Figure 10, including account login and management; report generating; data entering according to management scope; approved report attachment; report reviewing, editing, and submitting; report exploring; and data storing.

Figure 9. The M&E online system

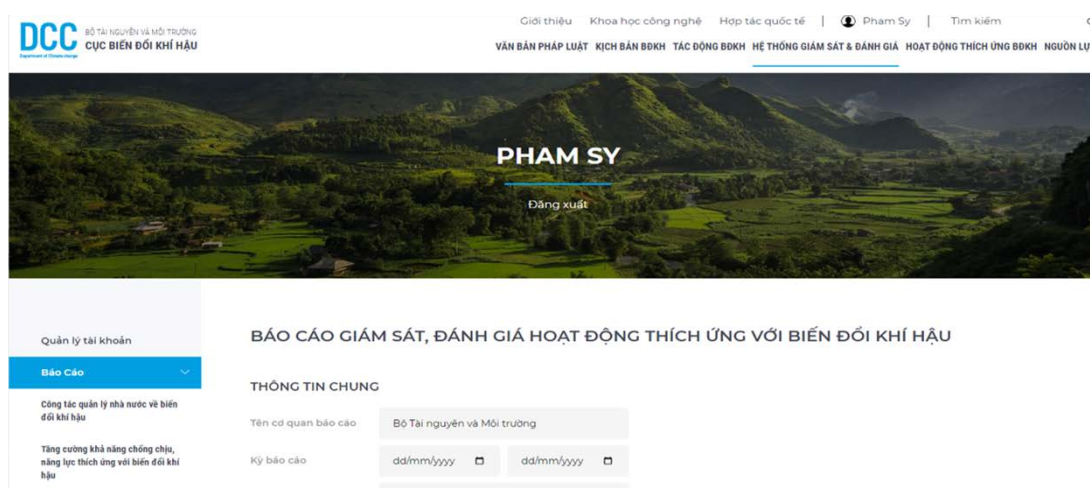


Figure 10. Functions of the M&E online system

The screenshot shows the top navigation bar with the following items: Giới thiệu, Khoa học công nghệ, Hợp tác quốc tế, Đăng nhập, and Tìm kiếm. Below this is a secondary menu with: THỂ CHẾ - CHIẾN LƯỢC - QUY HOẠCH - KẾ HOẠCH, KỊCH BẢN BĐKH, TÁC ĐỘNG BĐKH, **HỆ THỐNG GIÁM SÁT & ĐÁNH GIÁ**, HOẠT ĐỘNG THÍCH ỨNG BĐKH, and NGUỒN LỰC. A callout box points to the 'HỆ THỐNG GIÁM SÁT & ĐÁNH GIÁ' menu item with the text 'Click on menu'.

The main content area displays a form titled 'BÁO CÁO GIÁM SÁT, ĐÁNH GIÁ HOẠT ĐỘNG THÍCH ỨNG VỚI BIẾN ĐỔI KHÍ HẬU'. Under the heading 'THÔNG TIN CHUNG', there are input fields for:

- Tên cơ quan báo cáo
- Kỳ báo cáo (with dropdown menus for year and month)
- Họ tên người tổng hợp (pre-filled with 'Quản Trị Viên')
- Điện thoại liên hệ (pre-filled with '0168937008')
- Email liên hệ (pre-filled with 'admin.nca@gmail.com')

 A blue button labeled 'Tạo Báo Cáo Mới' is located at the bottom of the form.

Below the form is a red button with the text 'Tracing access <http://adaptation.dcc.gov.vn/>'.

To the right of the form is a vertical list of seven functions:

1. Account login and management
2. Report generating
3. Data entering according functions
4. Approved report attachment
5. Report reviewing, editing and submitting
6. Report exploring
7. Data storing

The M&E reporting system includes the following steps, as depicted in Figure 11. There are seven steps to implement the online M&E report. In each step, users can apply functions to quickly and easily create an M&E report.

Figure 11. Process of updating information and reporting on the online reporting system

This screenshot is identical to Figure 10, showing the same navigation bar, menu, and form for reporting on the M&E online system.

Below the form is a red button with the text 'Tracing access <http://adaptation.dcc.gov.vn/>'.

To the right of the form is a vertical list of seven steps:

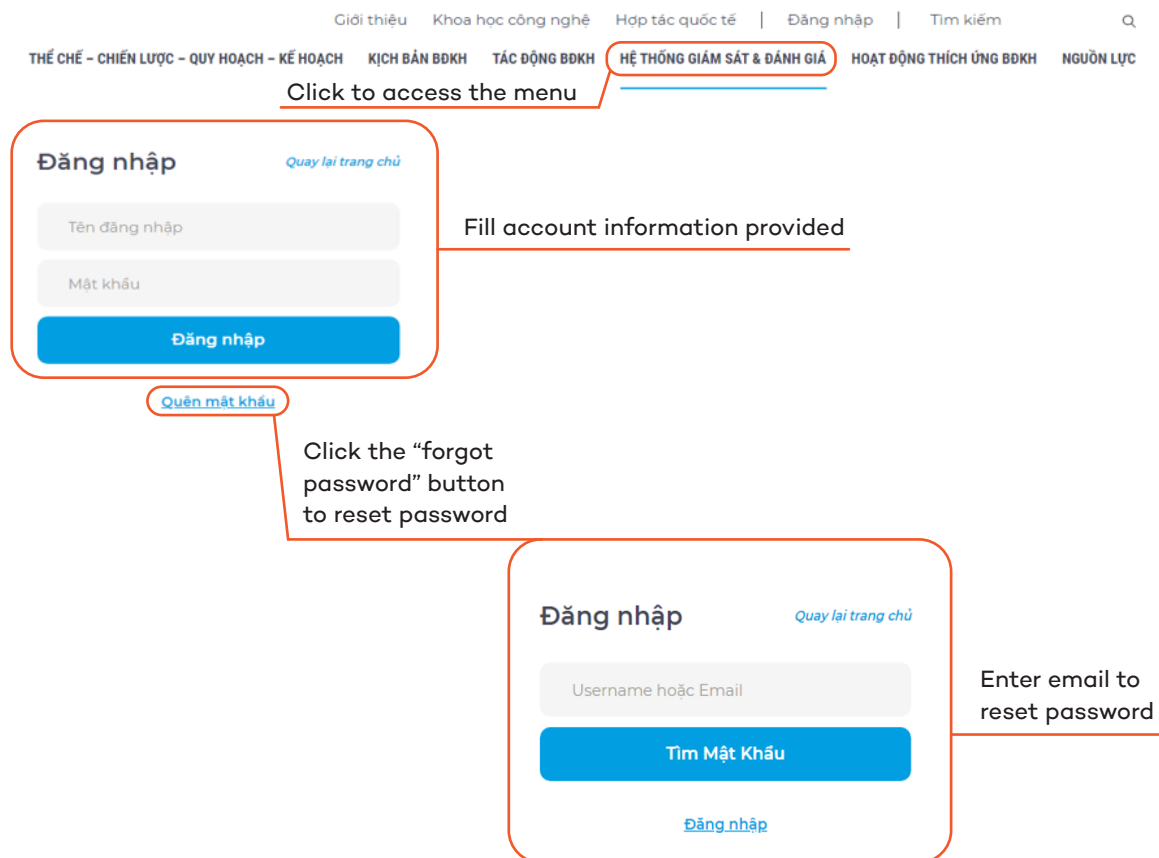
1. Access on website
2. Account management on menu
3. Create report general information
4. Report implementation
5. Report management
6. Present analytic and synthesis reports
7. Data storing

4.1.3 Contents of the Steps

STEP 1. Access the Website

Users access the system through the account provided to them using the steps shown in Figure 12. Users enter their user name and password to access the M&E system. If the user has forgotten their password, they can enter their email to request a new password.

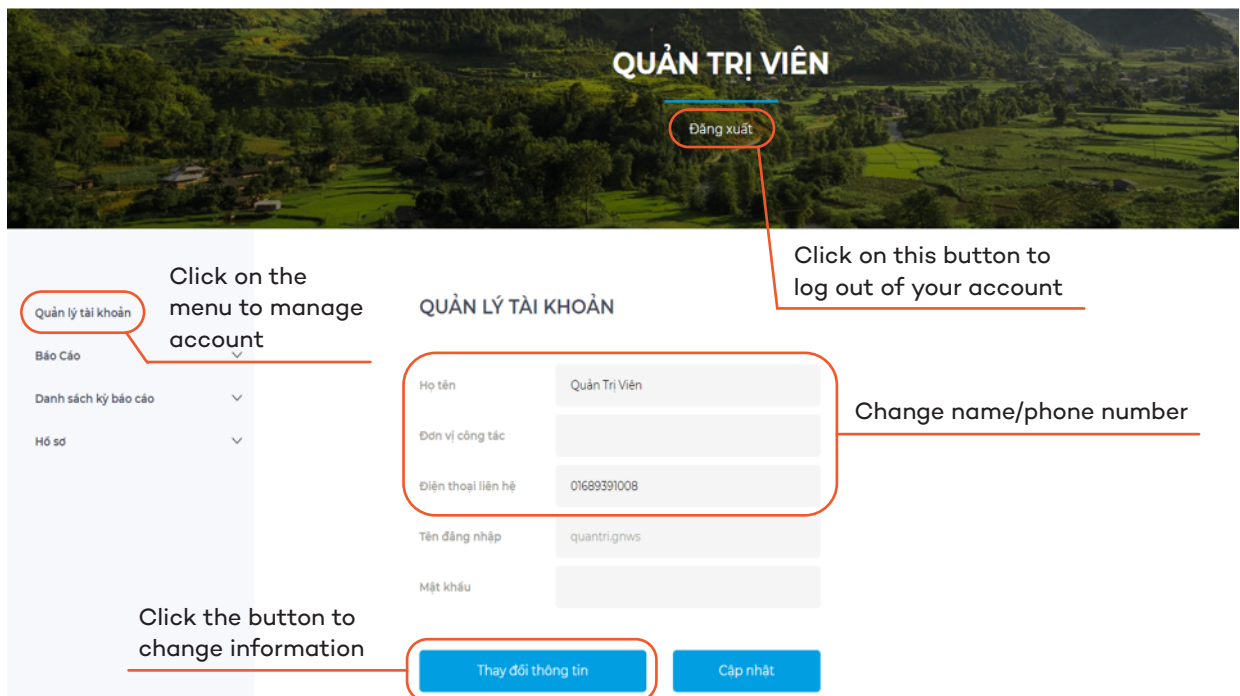
Figure 12. Accessing the system



STEP 2. Account Management

As shown in Figure 13, users can manage their accounts using the account login and management function. They can change name and phone number. That might help keep information of the person who implement reporting M&E, then viewers can contact if necessary.

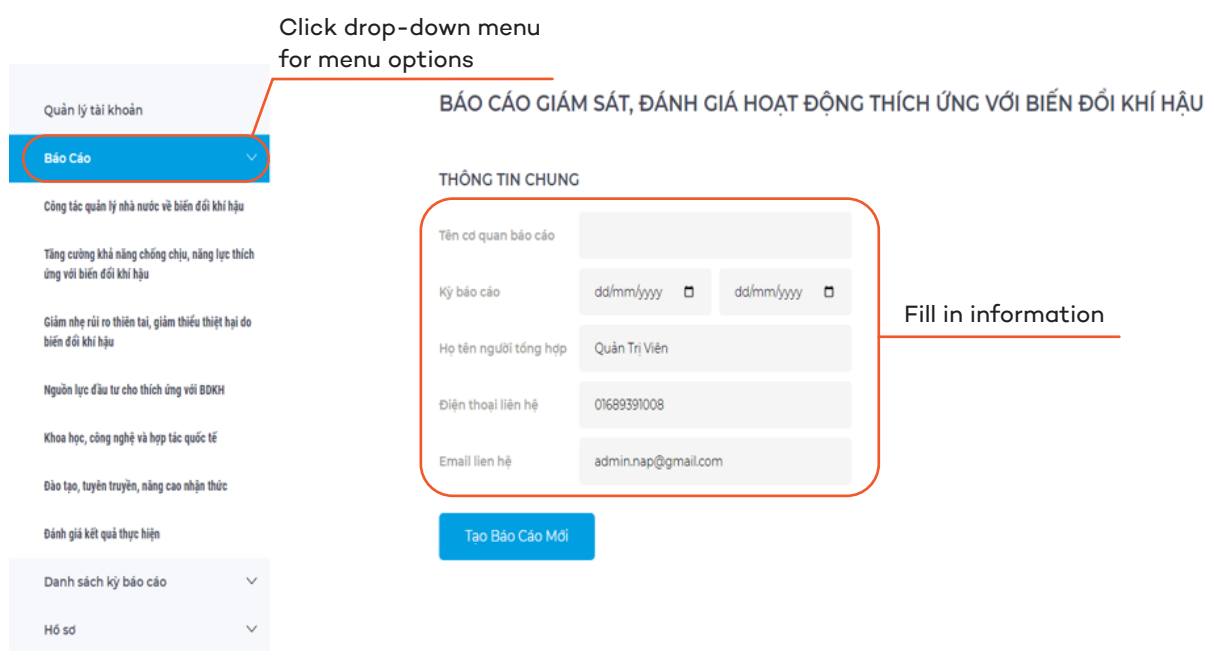
Figure 13. Account management



STEP 3. Generating Reports—General Information

Figure 14 shows an important step in M&E online report process. In this step, the user fills in all general information relating to the M&E report, including the name of the organization, the time period of the report, and the reporter's name, phone, and email to ensure the responsibility of the reporter.

Figure 14. Entering the initial report information



STEP 4. Report Implementation

The step is shown in Figure 15. In Decision 148/QĐ-TTg, there are 72 indicators divided into six large groups. All groups and indicators are listed in the online system, and the user may enter data for each indicator belonging to their management scope. All information for indicators and attached file are required to fill up.

Figure 15. Step for entering data

Quản lý tài khoản

Báo Cáo

Công tác quản lý nhà nước về biến đổi khí hậu

Tăng cường khả năng chống chịu, năng lực thích ứng với biến đổi khí hậu

Giảm nhẹ rủi ro thiên tai, giảm thiểu thiệt hại do biến đổi khí hậu

Nguồn lực đầu tư cho thích ứng với BĐKH

Khoa học, công nghệ và hợp tác quốc tế

Đào tạo, tuyên truyền, nâng cao nhận thức

Đánh giá kết quả thực hiện

CÔNG TÁC QUẢN LÝ NHÀ NƯỚC VỀ BIẾN ĐỔI KHÍ HẬU

1. HOÀN THIỆN THỂ CHẾ, CHÍNH SÁCH

1.1. Danh mục các văn bản quy phạm pháp luật được xây dựng, ban hành

STT	Tên văn bản quy phạm pháp luật	Tình trạng	File đính kèm
	Quyết định số 1456/QĐ-BTNMT	Hoàn Thành	Tải file 1.Chương trình hội thảo_final.doc

Thêm văn bản

Cập nhật

Click to add more documents if need

Attach file if it is available

Click button to update after each document is uploaded

STEP 5. Report Management

The step is shown in Figure 16. After entering data, the user can manage the report, including editing and reviewing data. This step helps users to change information in the report before submitting it. The reviewing, editing, and submitting functions can help users implement this step.

Figure 16. Report management

DANH SÁCH KỶ BÁO CÁO

STT	Kỳ báo cáo	Tình trạng	Người tổng hợp	Điện thoại	
1	Kỳ 2022-05-04 - 2022-12-31	Đang xây dựng	Quản Trị Viên	01689391008	Xóa
2	Kỳ 2022-01-01 - 2022-12-31	Đang xây dựng	Hương	01689391008	Xóa
3	Kỳ 2022-03-16 - 2022-03-22	Đang xây dựng	Quản Trị Viên	01689391008	Xóa
4	Kỳ 2022-03-26 - 2022-03-27		Quản Trị Viên	01689391008	Xóa
5	Kỳ 2022-03-02 - 2022-03-31		Trần Văn A	01689391008	Xóa
6	Kỳ 2022-02-25 - 2022-02-28		Nhân Viên Z	01689391008	Xóa
7	Kỳ 2022-02-16 - 2022-02-23		Quản Trị Viên	01689391008	Xóa

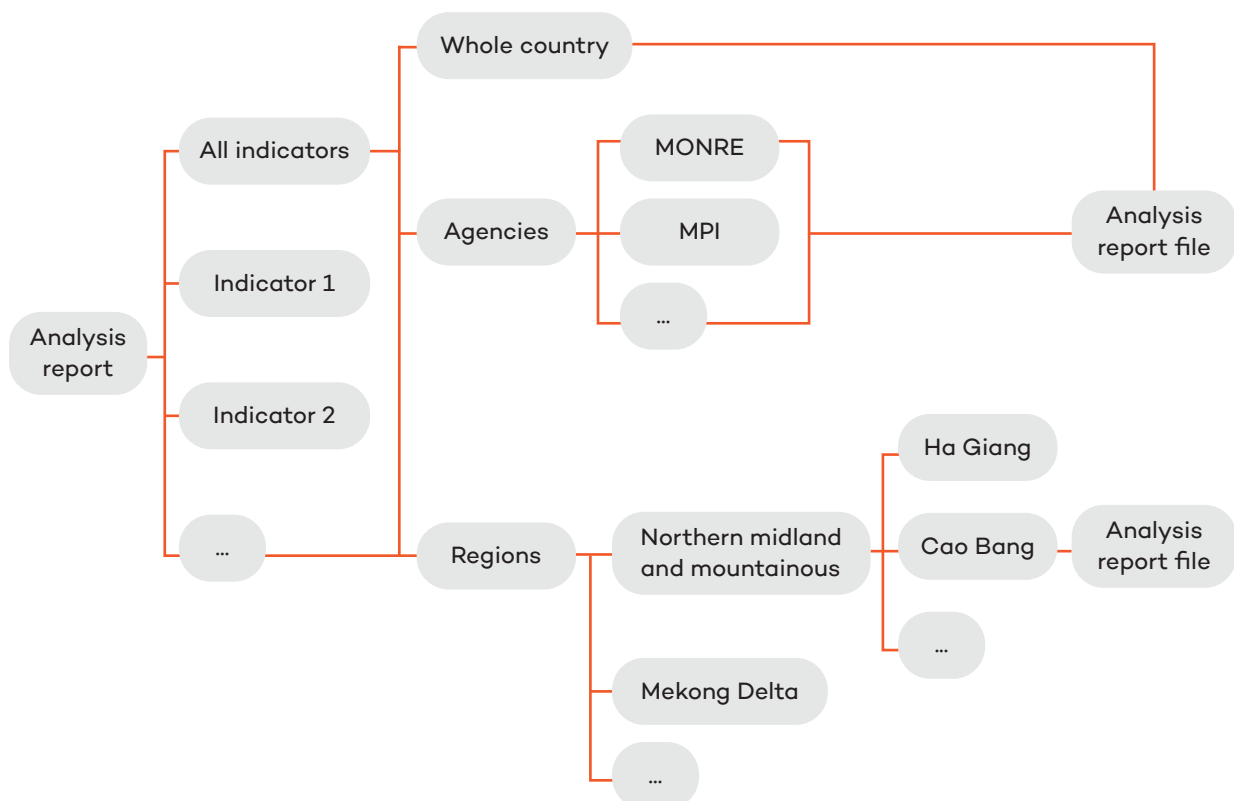
Annotations:

- Click on the time period to edit
- Click the drop-down menu for option of report list
- Use erase button to delete information

STEP 6. Present Analytic and Synthesis Report

The step is shown in Figure 17. In the M&E online system, users can explore functions for both aggregate reports and analytic reports. These reports are filtered by indicators and agencies in charge. The “report exploring” function helps users to synthesize information and obtain results more quickly and easily.

Figure 17. Creating analytic reports



STEP 7. Data Storage

The step is shown in Figure 18. All M&E reports and attached files are uploaded to the data record tool. Users can store and easily explore data in the record tool.

Figure 18. Storing data

The screenshot shows the 'ĐĂNG VĂN BẢN HỒ SƠ' (Register Document Case) interface. On the left, a sidebar menu contains 'Quản lý tài khoản', 'Báo Cáo', 'Danh sách kỳ báo cáo', and 'Hồ sơ'. The 'Hồ sơ' item is highlighted in blue and has a red circle around it with the text 'Hồ sơ chưa duyệt'. Below this, a text box says 'Click on the menu to see documents awaiting approval'. The main area has a blue header with the title 'ĐĂNG VĂN BẢN HỒ SƠ' and a navigation bar with 'Tên văn bản-hồ sơ', 'File đính kèm', 'Loại văn bản', 'Cơ quan', and 'Hình ảnh'. Below this is a form with a text input field containing 'Nhập', a 'Tải lên' button, a dropdown menu with 'Báo Cáo', a 'Vinh Phúc' button, and another 'Tải lên' button. A red box highlights the 'Thêm văn bản' button with the text 'Click to add more documents' and 'Attach documents'. Below that, a red box highlights the 'Cập nhật' button with the text 'Click button to update'.

Conclusion

M&E is an important part of the process of implementing climate change adaptation activities. It is critical to monitor the level of adaptation and the effectiveness and impact of such activities on reducing vulnerability and strengthening the adaptability of the nation's economic, social, and natural systems in order to improve living standards for communities affected by climate change.

The national M&E system will monitor and evaluate the adaptation activities of ministries, sectors, and localities; strengthen the effectiveness of state management of climate change adaptation; assess the effectiveness of adaptation activities; and provide lessons learned in formulating and implementing climate change adaptation activities nationwide.

The national M&E system was issued by the Prime Minister in Decision No.148/QĐ-TTg, dated January 28, 2022. This system provides M&E content groups accompanied by specific monitoring indicators to assess climate change adaptation activities. It stipulates the responsibilities of ministries and ministerial-level agencies and provincial-level People's Committees in organizing implementation.

Ministries, sectors, and localities are responsible for implementing the national M&E system alongside the NAP. Ministries, sectors, and localities need to manage the M&E of adaptation activities, update information, and report the results of M&E to MONRE, which will synthesize the data and report to the National government annually and every five years.

This manual was developed to help ministries, sectors, and localities implement the M&E system. It guides ministries, sectors, and localities in the M&E of adaptation activities within their scope of management and in developing an annual comprehensive report on M&E. It contributes to capacity building and supports the management, coordination, and effective implementation of climate change adaptation activities in Viet Nam.

Agencies and organizations carrying out the M&E of adaptation activities in ministries, branches, and localities and staff that advises, manages, supervises, and evaluates should be consulted about implementation in accordance with the guidelines in the manual to ensure that the M&E work is carried out uniformly and achieves the purposes and requirements of the national M&E system. If there are issues or proposals to amend or supplement the manual during implementation, all proposals should be sent to the Department of Climate Change, MONRE, to contribute to reviewing, adjusting, and completing the manual.

References

- Brooks, N., Anderson, S., Burton, I., Fisher, S., Rai, N., & Tellam, I. (2013). *An operational framework for Tracking Adaptation and Measuring Development (TAMD)* (Issue 5). International Institute for Environment and Development (IIED).
- Brooks, N., & Fisher, S. (2014). *Tracking Adaptation and Measuring Development (TMAD): a step-by-step guide*. Print Toolkit. International Institute for Environment and Development (IIED).
- Huong, C. T. T. (2018). *Researching the scientific basis in evaluating solutions to adapt to climate change—Applied to Quang Ngai province*. PhD thesis (In Vietnamese).
- IPCC (2014a): *Annex II: Glossary* [Mach, K.J., S. Planton and C. von Stechow (eds.)]. In: *Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* [Core Writing Team, R.K. Pachauri and L.A. Meyer (eds.)]. IPCC, Geneva, Switzerland, pp. 117–130.
- IPCC (2014b): *Climate Change 2014: Synthesis Report*. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, R.K. Pachauri and L.A. Meyer (eds.)]. IPCC, Geneva, Switzerland, 151 pp.
- LDC Expert Group. (2012). *National adaptation plans. Technical guidelines for the national adaptation plan process*.
- Leagnavar, P., Bours, D., & McGinn, C. (2015). *Good practice study on principles for indicator development, selection, and use in climate change adaptation monitoring and evaluation* (A. Viggh (ed.)). Climate-Eval Community of Practice.
- Lim, B, and Spanger-Sieghred, E (eds) (2005). *Adaptation Policy Framework for Climate Change. Developing Strategies, Policies and Measures*. Cambridge: Cambridge University Press. Available at http://www.preventionweb.net/files/7995_APF.pdf.
- Government of Viet Nam, 2020. *National Adaptation Plan period 2021–2030, with the vision to 2050*, approved in Decision No. 1055/QĐ-TTg dated July 20, 2020 of the Prime Minister (In Vietnamese).
- Organisation for Economic Co-operation and Development. (2015a). *National climate change adaptation: Emerging practices in monitoring and evaluation*. In *National Climate Change Adaptation* (Issue June). OECD Publishing.
- Organisation for Economic Co-operation and Development. (2015b). *National Climate Change Adaptation: Emerging Practices in Monitoring and Evaluation*. OECD Publishing, Paris.
- Olivier, J., Leiter, T., & Linke, J. (2012). *Adaptation made to measure: A guidebook to the design and results-based monitoring of climate change adaptation projects* (2nd ed.). Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH.
- Price-Kelly, H., Hammill, A., Dekens, J., Leiter, T., & Olivier, J. (2015). *Developing National Adaptation Monitoring and Evaluation System: A guide book*. Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH.
- Pringle, P. (2011). *AdaptME toolkit: Adaptation monitoring and evaluation*. UKCIP, Oxford, UK.155

Spearman, M., & McGray, H. (2011). *Making adaptation count: Concepts and options for monitoring and evaluation*. Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH.

Thuc, T., Quang, V. D. D., Huong, H. T. L., Tue, N.V., Nga, T. T. T., Thinh, D. Q., Anh, N. T., Huong, D. T., & Thuy, N. T. (2021). *Indicators set in the climate change adaptation M&E system*. 2021. Publishing house of natural resources, environment, and cartography (In Vietnamese).

Leiter, T. (2020). *Developing a climate adaptation monitoring and evaluation system for Grenada's National Adaptation Plan*. A technical report based on expert interviews and the results of a Government consultation on July 24–26, 2019. Ministry of Climate Resilience, the Environment, Forestry, Fisheries, Disaster Management and Information of Grenada.

Additional Reading

Climate Change Secretariat Ministry of Mahaweli Development and Environment (2016).

National Adaptation Plan for Climate Change Impacts in Sri Lanka 2016-2025. <https://www4.unfccc.int/sites/NAPC/Documents%2ONAP/National%20Reports/National%20Adaptation%20Plan%20of%20Sri%20Lanka.pdf>

Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH. (2014). *Monitoring and evaluating adaptation at aggregated levels: A comparative analysis of ten systems.*

Hammill, A., Dekens, J., Leiter, T., Olivier, J., Klockemann, L., Stock, E., & Gläser, A. (2014).

Repository of adaptation indicators. Real case examples from national monitoring and evaluation systems. Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH in cooperation with IISD.

Ministry of Economy's Climate Change and International Cooperation Division (2020).

Monitoring and evaluation framework for Fiji's National Adaptation Plan process. <https://naglobalnetwork.org/wp-content/uploads/2020/04/ME-Fiji-NAP-Process.pdf>

Quang, V. D. D., & Huong, H. T. L. (2020). *Development of a framework for climate change adaptation actions' effectiveness evaluation.* Viet Nam Journal of HydroMeteorology, 6, 46–56. <http://vnjhm.vn/data/article/1053/5.%20Proofreading.pdf>

Appendix

Table A1. Guidelines for information collection and calculation for monitoring and evaluation (M&E) indicators at the ministerial/ sectoral level

STT	M&E indicator	Explanation of indicators	Data/information to be collected	Method of calculation	Reporting period	Sources of data/ documents	Responsible authority
I. Government management of climate change							
1. Developing the legal framework, institutions and policies							
1.1	The Law on Climate Change to be included in the National Assembly's Law and Ordinance formulation program	Evaluation of the progress of developing the proposed Law on Climate Change according to the provisions of the Law on Legislative Promulgation	<ul style="list-style-type: none"> Current status of the contents that have been and are being implemented up to the reporting period 		Annual	Department of Climate Change	Department of Climate Change, MONRE
1.2	Number of legal documents related to climate change adaptation developed and implemented	Statistics on legal documents (decree, circular, decision, etc.) with contents related to climate change adaptation	<ul style="list-style-type: none"> Title of the document Current status (under development or issued. If issued, specify the number and date of issue) Summary of the related content 	Statistics on the total number of documents and calculate the quantity according to the type of normative legal documents (decrees, circulars, etc.)	Annual	State management units directly under the ministries	Climate change agency/focal point of the ministries

STT	M&E indicator	Explanation of indicators	Data/information to be collected	Method of calculation	Reporting period	Sources of data/ documents	Responsible authority
1.3	Number of mechanisms and policies on resource mobilization and engagement in all economic sectors in climate change adaptation, insurance, and disaster risk reduction	Statistics on mechanisms and policies with the intent of mobilizing resources and encouraging the participation of all economic sectors (including all relevant organizations and individuals) for climate change adaptation activities; mechanisms and policies related to insurance and disaster risk sharing	<ul style="list-style-type: none"> Name of mechanism, policy Policy objectives (resource mobilization or insurance, disaster risk sharing) Current status (under development or issued. If issued, specify the number and date of issue) 	Statistics on the total number of mechanisms and policies and calculate the number by type of documents (decrees, circulars, decisions, etc.)	Annual	Departments under the ministries	Climate change agency/ focal point of the Ministry ministries

2. Formulate and issue strategies, master plans, plans, programs, schemes, projects

2.1	Number of strategies related to climate change adaptation issued	Statistics on strategies with content related to climate change adaptation being developed or issued	<ul style="list-style-type: none"> Strategy name Summary of related content Update status: under development or issued 	Statistics on total strategies related to climate change adaptation; number of strategies under development; number of strategies issued	Annual	Units under the ministries	Climate change agency /focal point of the ministries
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STT	M&E indicator	Explanation of indicators	Data/information to be collected	Method of calculation	Reporting period	Sources of data/ documents	Responsible authority
2.2	Number of master plans related to climate change adaptation issued	Statistics on master plans with contents related to climate change adaptation being developed or issued	<ul style="list-style-type: none"> Name of the plan Summary of related content Update status: under development or issued 	Statistics on the total number of master plans with contents related to climate change adaptation; the number of master plans under development; number of issued plans	Annual	Units under the ministries	Climate change agency/focal point of the ministries
2.3	Number of plans related to climate change adaptation issued	Statistics on plans with content related to climate change adaptation being developed or issued	<ul style="list-style-type: none"> Name of the plan Summary of related content Update status: under development or issued 	Statistics on the total number of plans related to climate change adaptation; number of plans under development; number of plans issued	Annual	Units under the ministries	Climate change agency/focal point of the ministries
2.4	Number of programs, schemes, and projects to adapt to climate change implemented	Statistics on programs, schemes, and projects with contents related to climate change adaptation that are being implemented or have been implemented	<ul style="list-style-type: none"> Name of program, scheme, project Summary of related content Status update: ongoing or implemented 	Statistics on the total number of programs, schemes and projects with contents related to climate change adaptation; quantity being made; quantity made	Annual	3. Formulating and issuing national technical standards, regulations, regulations, and guidelines	Climate change agency/focal point of the ministries

STT	M&E indicator	Explanation of indicators	Data/information to be collected	Method of calculation	Reporting period	Sources of data/ documents	Responsible authority
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3. Formulating and issuing national technical standards, regulations, regulations, and guidelines

3.1	Number of national regulations on climate change adaptation issued	Statistics on national regulations with content related to climate change adaptation being developed or issued	<ul style="list-style-type: none"> Names of regulations Update status: under development or issued 	Statistics on the total number of regulations with contents related to climate change adaptation; number of regulations under development; number of issued regulations	Annual	Units under the ministries	Climate change agency/focal point of the ministries
3.2	Number of national and local standards on climate change adaptation issued	Statistics on <i>national standards</i> with content related to climate change adaptation being developed or promulgated	<ul style="list-style-type: none"> Names of standards Update status: under development or issued Summary of related content 	Statistics on the total number of standards with content related to climate change adaptation; number of standards under development; number of issued standards	Annual	Units under the ministries	Climate change agency/focal point of the ministries

STT	M&E indicator	Explanation of indicators	Data/information to be collected	Method of calculation	Reporting period	Sources of data/ documents	Responsible authority
3.3	Number of technical guidelines on climate change adaptation issued	Statistics on technical guidelines related to climate change adaptation that are being developed or issued	<ul style="list-style-type: none"> Names of technical guidelines/ instructions Update status: under development or issued Summary of related content 	Statistics on the number of technical guidelines related to climate change adaptation; number under development; number issued	Annual	Units under the ministries	Climate change agency/focal point of the ministries

4. Prepare report on climate change adaptation

4.1	National communication on climate change response	Assess the state of national report development to respond to climate change	<ul style="list-style-type: none"> Current status: under construction or issued Summary of work done (if under development); country report content (if completed) 		Annual	Department of Climate Change	Department of Climate Change, MONRE
4.2	Adaptation communication is developed and periodically updated, submitted to the Secretariat of the United Nations Framework Convention on Climate Change	Assess the state of preparation of the National Climate Change Adaptation Report	<ul style="list-style-type: none"> Current status: under construction or issued Summary of work done (if under development); content of the country adaptation report (if completed) 		Annual	Department of Climate Change	Department of Climate Change, MONRE

STT	M&E indicator	Explanation of indicators	Data/information to be collected	Method of calculation	Reporting period	Sources of data/ documents	Responsible authority
4.3	Report on the climate change response within the scope and field of management	Statistics on reports related to climate change response within the scope of the ministry	<ul style="list-style-type: none"> Statistics for reports (quarterly, 6-monthly, annually) of the ministry and its fields (if any); status (under development, completed) 	Calculate the total number of reports by type, in the fields; number under development, number completed	Annual	Related units in the ministries	Climate change agency/focal point of the ministries

5. Integrate the content of climate change adaptation into strategies, master plans, and plans

5.1	Guidelines for mainstreaming climate change adaptation into strategies, master plans, and plans are issued	Assess the status of development and issuance of guidelines for mainstreaming climate change adaptation into strategies, master plans, and plans	<ul style="list-style-type: none"> Status: under construction or issued Summary of work done (if under construction); guide content (if completed) 		Annual	Department of Climate Change	Department of Climate Change, MONRE
5.2	Percentage of strategies, master plans, and plans that incorporate climate change adaptation content	Assess the degree of mainstreaming climate change adaptation content into the strategies, master plans, and plans of management scope of the ministry	<ul style="list-style-type: none"> Names of strategies, master plans, and plans that incorporate climate change adaptation content Adaptive content is integrated in strategies, master plans, plans (summary) 	$C (\%) = B/A \times 100$	Annual	Units under the ministries and agencies and organizations under the management of the ministries	Climate change agency/focal point of the ministries

STT	M&E indicator	Explanation of indicators	Data/information to be collected	Method of calculation	Reporting period	Sources of data/ documents	Responsible authority
			<ul style="list-style-type: none"> Total number of issued strategies, master plans and plans (A) 				

6. Improve the organization, apparatus and human resources to respond to climate change

6.1	Number of specialized agencies involved in climate change response	Statistics on the agency in charge or specialized focal point on climate change response under the ministry	<ul style="list-style-type: none"> Name of specialized agency or focal point on climate change Number of agencies assigned to be in charge of or focal points on climate change 	Calculate the number of specialized agencies or focal points on climate change	Annual	Units under the ministries and agencies and organizations under the management of the ministries	Climate change agency/focal point of the ministries
6.2	Number of civil servants, public employees, and employees working in the field of climate change response	Statistics on the number of civil servants, public employees, and employees working in the field of climate change response, including hydro-meteorology and disaster prevention field of the ministry	<ul style="list-style-type: none"> Number of civil servants, public employees and employees working in the field of climate change response (disaggregated by gender) 	Calculate the total number of civil servants, public employees and employees working in the field of climate change	Annual	Units under the ministries and agencies and organizations under the management of the ministries	Climate change agency/focal point of the ministries

STT	M&E indicator	Explanation of indicators	Data/information to be collected	Method of calculation	Reporting period	Sources of data/ documents	Responsible authority
II. Strengthen resilience and capacity to adapt to climate change in all fields							
1. Agriculture, forestry, fishery							
1.1	Number and types of new plant and animal varieties to adapt to climate change are selected	Develop statistics and synthesize the number and types of plant and animal varieties selected by the ministry to be able to adapt to climate change	<ul style="list-style-type: none"> Name and number of varieties of crops adapted to climate change Name and number of livestock breeds adapted to climate change 	Statistics on names and number of plant varieties and livestock	Annual	The units in charge of statistics on new plant and animal varieties in the Ministry of Agriculture and Rural Development (MARD) or related units	Agency in charge/ focal point on climate change of MARD
1.2	Percentage of application of new plant and animal varieties adapted to climate change	Determine the level of ability of new plant varieties and new livestock breeds to adapt to climate change created by the ministry	<ul style="list-style-type: none"> Planting area for each new plant variety (ha) Total planted area with all new plant varieties (ha) Number of livestock of each new breed (heads) Total number of new livestock of all kinds (heads) 	Calculate the total area of crops and the number of livestock of new breeds	Annual	The units in charge of statistics on new plant and animal varieties or related units of MARD	Agency in charge / focal point on climate change of MARD

STT	M&E indicator	Explanation of indicators	Data/information to be collected	Method of calculation	Reporting period	Sources of data/ documents	Responsible authority
1.3	Number and percentage of production and farming models adapted to climate change	Determine the level application by the ministry of production and farming conversion to adapt to climate change	<ul style="list-style-type: none"> Name of each model of converted production and farming, applied locations (commune, district, province) Scale of application for each production and cultivation model: cultivation is calculated by planting area (ha); livestock production is calculated by the number of livestock (head). Total area and total number of heads of livestock of converted production and farming models. 	Calculate the total number of models, total cultivated area, total number of livestock applied the models	Annual	Relevant units under MARD	Agency in charge/ focal point on climate change of MARD
1.4	Number and percentage of technology, useful solutions in production and farming applied	Determine the scale of application by the ministry of useful technologies and solutions in farming production to adapt to climate change	<ul style="list-style-type: none"> Name of each technology, useful solution in production, and farming applied; 	Calculate the total number of solutions and technologies, total cultivated area, total number of livestock to which solutions and technologies are applied	Annual	Relevant units under MARD	Climate change agency/focal point of MARD

STT	M&E indicator	Explanation of indicators	Data/information to be collected	Method of calculation	Reporting period	Sources of data/ documents	Responsible authority
			<ul style="list-style-type: none"> • Location of application of useful technology and solutions (commune, district, province) • The scale of application is calculated by area (ha) for cultivation, number of livestock (heads) for animal husbandry. 				
1.5	Areas of special-use forests, coastal protection forests, and watershed protection forests to be protected, replanted, and restored for the purpose of climate change adaptation	Determine the size of the area of forests (including special-use forests, coastal protection forests, watershed protection forests) that are protected, newly planted, and restored for the purpose of climate change adaptation	<ul style="list-style-type: none"> • For each type of forest (special-use forest, coastal protection forest, watershed protection forest) it is necessary to identify: <ul style="list-style-type: none"> ◦ Protected area (ha) ◦ Newly planted area (ha) ◦ Restored area (ha) 	<ul style="list-style-type: none"> • Calculate the total area of protection, new planting, and restoration for each type of forest • Calculate the total area of protection, restoration, and new planting for all three types of forests 	Annual	Relevant units under MARD	Climate change agency/focal point of MARD

STT	M&E indicator	Explanation of indicators	Data/information to be collected	Method of calculation	Reporting period	Sources of data/ documents	Responsible authority
1.6	Quantity and scale of high technology in forecasting, prevention, and control of forest fires applied	Determine the type and scale of high technologies applied by the ministry in forest fire forecasting, prevention, and control	<ul style="list-style-type: none"> Name of high technology in forest fire forecasting and prevention Scale of area where technology is to be applied (ha) 	<ul style="list-style-type: none"> Statistical names of types of high technology in forecasting and preventing forest fires Determination of the area (ha) of forest to which the technology is applied 	Annual	Relevant units under MARD	Agency in charge/ focal point on climate change of MARD

2. Environment and biodiversity

2.1	The climate change risk zoning map for natural ecosystems is built	Assess the current status of building climate change risk zoning maps for natural ecosystems.	<ul style="list-style-type: none"> Risk zone map name Construction status (under construction, completed) Scope of map application (for what kind of ecosystem, applicable area) 		Annual	Department of Ecological Conservation	Department of Climate Change, MONRE
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STT	M&E indicator	Explanation of indicators	Data/information to be collected	Method of calculation	Reporting period	Sources of data/ documents	Responsible authority
2.2	Number and size of protected areas, rescued areas, off-site conservation and breeding areas of threatened species are established	Scale up conservation, rescue, and peripheral conservation areas that raise and breed newly threatened species established by the ministry	<ul style="list-style-type: none"> Name, area (ha), and location of the protected area for threatened species Name, area (ha), and location of the rescued areas for threatened species Name, area (ha), and location of the peripheral reserve for raising and breeding threatened species Total area of conservation, rescue, and conservation areas in the periphery of raising and breeding (ha) 	<ul style="list-style-type: none"> Statistics on names, areas, and locations of conservation, rescue and conservation areas in the periphery for raising and breeding Calculate total number of zones and total area of zones 	Annual	Relevant units under MARD	Agency in charge / focal point on climate change of MARD
2.3	Number of biodiversity conservation models in areas with high biodiversity and vulnerable to climate change deployed	Statistics on biodiversity conservation models in areas with high biodiversity and vulnerable to climate change deployed by the ministry	<p>For each model type it is necessary to define:</p> <ul style="list-style-type: none"> Model name Model application area (ha) Implementation location (commune, district, province) 	<ul style="list-style-type: none"> General statistics of model name, application area, and application location Calculate the total number of model types and the total applicable area. 	Annual	Relevant units under MONRE and MARD	Agency in charge/ focal point on climate change of MONRE, MARD

STT	M&E indicator	Explanation of indicators	Data/information to be collected	Method of calculation	Reporting period	Sources of data/ documents	Responsible authority
2.4	Percentage (%) of degraded important natural ecosystems restored	Evaluate the results of restoration of degraded important natural ecosystems implemented by the ministry	<ul style="list-style-type: none"> • The name of the degraded ecosystem is restored • Location of the ecosystem • Total degraded area (ha) (A) • Restored degraded area (ha) (B) • Proportion of area restored (C) 	$C (\%) = B/A \times 100$	Annual	Relevant units under MONRE and MARD	Agency in charge/ focal point on climate change of MONRE, MARD
2.5	Number and scale of ecosystem-based climate change adaptation models deployed	Determine the scale of application by the ministry of climate change adaptation models based on ecosystems	<ul style="list-style-type: none"> • Names of climate change models based on ecosystems • Area of application (ha) • Location of model application (commune, district, province) 	<ul style="list-style-type: none"> • Statistics on model name, application area, model application location. • Calculate the total number of models and the total area of application of the models 	Annual	Relevant units under MONRE and MARD	Agency in charge / focal point on climate change of MONRE, MARD

STT	M&E indicator	Explanation of indicators	Data/information to be collected	Method of calculation	Reporting period	Sources of data/ documents	Responsible authority
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3. Water resources

3.1	Number and scale of models of economical and efficient exploitation and use of water deployed	Determine the diversity and scale of applying models of economical and efficient exploitation and use of water	<ul style="list-style-type: none"> Name of the model of economical and efficient exploitation and use of water being deployed Scale of application (for example: area to be applied the model [ha] if it is cultivation; area of farm [ha], and number of livestock [head], area of ponds and lakes [ha] in case of livestock or aquaculture...) 	Statistics on the total number of models and calculation of the total planted area, number of livestock, etc. applying the model	Annual	Department of Water Resources Management, Center for Investigation and Planning of Water Resources and related units	Department of Climate Change, MONRE
3.2	Number and scale of water storage works deployed in the situation of water scarcity, drought, and saltwater intrusion increase due to climate change	Determine the potential of water storage works built by the ministry to adapt to conditions of water scarcity, drought, and increased saltwater intrusion due to climate change	<ul style="list-style-type: none"> Name of the water storage facility Location of the project Design capacity (capability) of water storage (m³) 	Calculating total number of works and total design water storage capacity (m ³)	Annual	Relevant agencies and units of MONRE, MARD	Agency in charge/ focal point on climate change of MONRE, MARD

STT	M&E indicator	Explanation of indicators	Data/information to be collected	Method of calculation	Reporting period	Sources of data/ documents	Responsible authority
3.3	Number of stations to monitor and monitor water resources (surface water and underground water) built and operated	Tally the number of water resource monitoring stations built and operated by the ministry	<ul style="list-style-type: none"> Name of monitoring station Monitoring factors Construction location Total investment (million VND) 	<ul style="list-style-type: none"> Statistics on monitoring stations Calculate the total number of stations built and operated and the total investment of stations 	Annual	Relevant agencies and units in MONRE, MOIT, MARD	Agency in charge/ focal point on climate change of MONRE
3.4	Number of inter-reservoir operating procedures in river basins reviewed and adjusted	Tally the reviewed and revised inter-reservoir operating procedures developed by the ministry and the river basins to which they are applied	<ul style="list-style-type: none"> Name of inter-reservoir operation procedure reviewed and adjusted Name of river basin and scope of application Number of inter-reservoir operation procedures reviewed and adjusted 	Calculate the total number of processes and the total number of watersheds applied	Annual	Relevant agencies and units in MONRE, MOIT, MARD	Agency in charge/ focal point on climate change of MONRE

STT	M&E indicator	Explanation of indicators	Data/information to be collected	Method of calculation	Reporting period	Sources of data/ documents	Responsible authority
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4. Transportation

4.1	Number of road and waterway transport works/ projects in areas often threatened by floods, sea level rise, landslides built, rehabilitated, and upgraded	Determine the quantity and cost of construction of road and waterway transport works or projects in areas often threatened by floods, sea level rise, landslides (under 3 categories: construction, improvement, upgrading) under the provisions of Decision 1055/QD-TTg including: Northern Mountains, Central Highlands, and Mekong River Delta	<ul style="list-style-type: none"> Name of the work or project Type of implementation (new construction, improvement, upgrading) Construction cost (million VND) 	Statistics on total number of works/ projects built, improved, and upgraded and total investment costs in the Northern Mountains, Central Highlands and Mekong Delta regions	Annual	Relevant agencies and units in Ministry of Transport (MOT)	Agency in charge/ focal point on climate change of MOT
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STT	M&E indicator	Explanation of indicators	Data/information to be collected	Method of calculation	Reporting period	Sources of data/ documents	Responsible authority
4.2	Volume (km) of roads in areas often threatened by floods, sea level rise, landslides built, improved, and upgraded	Determine the number of kilometers of bridges, roads, waterways newly built, improved, and upgraded by the ministry in areas often threatened by floods, sea level rise, and landslides according to the provisions of Decision 1055/QĐ-TTg, including: Mountain areas North, Central Highlands, and Mekong Delta	<ul style="list-style-type: none"> Road, waterway name Type of implementation (new construction, improvement or upgrading) Number of kilometers built Investment cost (million VND) 	Calculate the total volume (km) implemented according to the type of implementation and the total investment cost.	Annual	Relevant agencies and units in MOT	Agency in charge/ focal point on climate change of MOT

5. Construction, urban

5.1	Number of technical infrastructure works for flood prevention and control in urban areas built and upgraded	Determine the number of urban flood prevention and control constructions built or upgraded by the ministry	<ul style="list-style-type: none"> Name of the project Type of implementation (new construction or upgrading) Construction location Investment cost (million VND) 	Statistics on works by type of implementation and total investment cost	Annual	Relevant agencies and units in Ministry of Construction (MOC)	Agency in charge/ focal point on climate change of MOC
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STT	M&E indicator	Explanation of indicators	Data/information to be collected	Method of calculation	Reporting period	Sources of data/ documents	Responsible authority
5.2	Proportion (%) of the population in areas frequently affected by storms, storm surges, floods, riverbank erosion, coastal erosion, flash floods, and landslides are located, relocated	Determine the level of placement, relocation, arrangement population in areas frequently affected by storms, storm surge, floods, riverbank and coastal erosion, flash floods, landslides	<ul style="list-style-type: none"> Name of area or place Total population of the area or place (person) (A) Total number of population to be located and relocated (B) Determine the percentage to be located and relocated (C) 	$C (\%) = B/A \times 100$	Annual	Relevant agencies and units in MOC	Agency in charge/ focal point on climate change of MOC
5.3	Number of houses that are safe from storms, floods, and sea level rise built	Count the number of houses that are safe from storms, floods and sea level rise built by the ministry	<ul style="list-style-type: none"> Area for construction of safe houses (by province, city) Number of safe houses built (piece/ house) Construction cost (million VND) 	<ul style="list-style-type: none"> Statistics on the number of houses that are safe from storms, floods and sea level rise built for each province and city. Calculate the total construction cost in each province and city. Total construction cost implemented. 	Annual	Relevant agencies and units in MOC and MARD	Agency in charge / focal point on climate change of MOC and MARD

STT	M&E indicator	Explanation of indicators	Data/information to be collected	Method of calculation	Reporting period	Sources of data/ documents	Responsible authority
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6. Industry, commerce, service

6.1	Number of energy infrastructure projects built and upgraded to adapt to climate change	Statistics on the number of energy sector projects built or upgraded by the ministry for climate change adaptation purposes	<ul style="list-style-type: none"> Name of energy infrastructure project for climate change adaptation Location of work Type of implementation (construction or upgrading) Total investment cost (million VND) 	<ul style="list-style-type: none"> Counting the total number of energy infrastructure projects for climate change adaptation purposes newly built or upgraded Calculate total investment cost (million VND) 	Annual	Relevant agencies and units in Ministry of Industry and Trade (MOIT)	Agency in charge/ focal point on climate change of MOIT
6.2	Number of industrial production infrastructure projects built and upgraded to adapt to climate change	Statistics on industrial production infrastructure works built and upgraded by the ministry for climate change adaptation purposes	<ul style="list-style-type: none"> Name of industrial production infrastructure works to adapt to climate change Location of works Type of implementation (new construction or upgrading) Total investment cost (million VND) 	<ul style="list-style-type: none"> Counting the total number of industrial production infrastructure works for climate change adaptation purposes built or upgraded. Calculate the total investment cost 	Annual	Relevant agencies and units in MOIT	Agency in charge/ focal point on climate change of MOIT

STT	M&E indicator	Explanation of indicators	Data/information to be collected	Method of calculation	Reporting period	Sources of data/ documents	Responsible authority
6.3	Number of commercial and service infrastructure projects built and upgraded to adapt to climate change	Statistics on commercial and service infrastructure projects for climate change adaptation purposes built and upgraded by the ministry	<ul style="list-style-type: none"> Name of commercial and service infrastructure works to adapt to climate change Location of works Type of implementation (new construction or upgrading) Total investment cost (million VND) 	<ul style="list-style-type: none"> Count the total number of commercial and service infrastructure works to adapt to climate change built or upgraded. Calculate total investment cost (million VND) 	Annual	Relevant agencies and units in MOIT	Agency in charge/ focal point on climate change of MOIT

7. Medicine and public health

7.1	Number of newly built and upgraded medical facilities for medical exams and treatment and disease prevention and control in areas at high risk of impacts of climate change	Statistics on health facilities for medical examination and treatment and disease prevention and control, newly built or upgraded by the ministry in areas at high risk of climate change impacts	<ul style="list-style-type: none"> Name of the medical facility for medical examination and treatment and disease prevention Facility location Type of implementation (new construction or upgrading) Total investment cost (million VND) 	<ul style="list-style-type: none"> Count the total number of newly built or upgraded facilities for medical examination and treatment and disease prevention. Calculation of total investment capital (million VND) 	Annual	Relevant agencies and units in Ministry of Health (MOH)	Climate change agency/focal point of MOH
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STT	M&E indicator	Explanation of indicators	Data/information to be collected	Method of calculation	Reporting period	Sources of data/ documents	Responsible authority
7.2	Number of medical facilities for medical examination and treatment provided with equipment for the prevention and treatment of diseases related to climate change.	Statistics on the number of medical facilities for medical examination and treatment capable of treating climate-sensitive diseases, including malaria, diarrhea, respiratory, cardiovascular diseases	<ul style="list-style-type: none"> Name of medical facility for medical examination and treatment capable of treating climate-sensitive diseases Facility location Total investment cost (million VND) 	<ul style="list-style-type: none"> Count medical facilities for medical examination and treatment capable of treating malaria, diarrhea, respiratory and cardiovascular diseases Calculate total investment cost (million VND) 	Annual	Relevant agencies and units in MOH	Climate change agency/focal point of MOH
7.3	Number of bulletins warning of disease and health risks due to extreme weather and climate	Statistics on the number of newsletters and media articles issued by the ministry warning of disease risks, health due to weather, extreme climate	<ul style="list-style-type: none"> Names of newsletters and articles related to health due to climate change impacts Number of newsletters and articles Release time Warning content and scope 	Tally statistics on news bulletins, articles related to disease risk, health due to weather, extreme climate	Annual	Relevant agencies and units in MOH	Climate change agency/focal point of MOH

STT	M&E indicator	Explanation of indicators	Data/information to be collected	Method of calculation	Reporting period	Sources of data/ documents	Responsible authority
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8. Labor and society

8.1	Number of vocational training and livelihood transformation programs for communities and groups vulnerable to the impacts of climate change	Statistics on the number of vocational training programs, number of training programs made by the ministry on livelihood transformation for communities, vulnerable groups due to climate change impacts	<ul style="list-style-type: none"> Name of the vocational training program Name of livelihood transformation program 	Calculate the total number of vocational training programs and the total number of implemented livelihood transformation programs	Annual	Relevant agencies and units in Ministry of Labor, Invalids and Social Affairs (MOLISA)	Agency in charge / focal point on climate change of MOLISA
8.2	Percentage of people and women in vulnerable areas due to climate change who received vocational training and changed livelihoods	Determine the proportion of women compared to the total number of people participating in vocational training and livelihood transformation programs organized by the ministry	<p>For each vocational training program and livelihood transformation program:</p> <ul style="list-style-type: none"> Total number of people participating (A) Number of women participating (B) Participation rate (%) that is female (C) 	$C (\%) = B/A \times 100$	Annual	Relevant agencies and units in MOLISA	Agency in charge/ focal point on climate change of MOLISA

STT	M&E indicator	Explanation of indicators	Data/information to be collected	Method of calculation	Reporting period	Sources of data/documents	Responsible authority
8.3	Percentage (%) of people and women in vulnerable areas due to climate change impacts who are trained in soft skills on climate change adaptation and disaster prevention	Determine the proportion of women compared to the total number of people participating in programs/training courses on climate change adaptation and disaster prevention organized by the ministry	For each program/training course: <ul style="list-style-type: none"> Name of training program/course Total number of people participating (A) Number of women participating (B) Participation rate (%) that is female (C) 	$C (\%) = B/A \times 100$	Annual	Units under the ministries and agencies and organizations under the management of the ministries	The ministry's focal point/in charge of climate change

9. Culture, sport, and tourism

9.1	Number of historical-cultural relics and scenic spots in areas affected by climate change preserved, repaired, and restored	Count the number of historical-cultural relics and scenic spots in areas affected by climate change preserved, repaired, or restored by the ministry	<ul style="list-style-type: none"> Name of historical-cultural site or scenic spot Place Type of implementation (preserved, repaired, restored) Investment cost (million VND) 	Calculate the total number of historical-cultural relics, or scenic spots according to each type of implementation (preserved, repaired, restored) and calculate the total investment cost	Annual	Relevant agencies and units in Ministry of Culture, Sports and Tourism (MOCST)	Agency in charge/focal point on climate change of MOCST
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STT	M&E indicator	Explanation of indicators	Data/information to be collected	Method of calculation	Reporting period	Sources of data/ documents	Responsible authority
9.2	Number of tourism infrastructure works in areas affected by climate change built and upgraded	Count the number of tourism infrastructure works in climate change-affected areas built and upgraded by the ministry	<ul style="list-style-type: none"> Name of tourism infrastructure Location Type of implementation (new construction or upgrading) Investment cost (million VND) 	Calculate the total number of tourist infrastructure works by type of implementation and total investment cost	Annual	Relevant agencies and units in MOCST	Agency in charge/ focal point on climate change of MOCST
9.3	Number of sports facilities in areas affected by climate change that have been renovated and upgraded	Count the number of sports facilities in areas affected by climate change to be renovated and upgraded by the ministry	<ul style="list-style-type: none"> Name of the sports facility Location Type of implementation (renovation, upgrading) 	Calculate the total number of sports facilities by type of implementation and total investment cost	Annual	Relevant agencies and units in MOCST	Agency in charge/ focal point on climate change of MOCST
			<ul style="list-style-type: none"> Investment cost (million VND) 				

III. Reducing disaster risks, minimizing damage caused by climate change

1. Hydrometeorological observation, monitoring climate change, sea level rise, and saltwater intrusion

1.1	The monitoring system for climate change and sea level rise is built and operated	Evaluate progress in building a monitoring system for climate change and sea level rise	<ul style="list-style-type: none"> Construction progress Investment cost 		Annual	National Hydrometeorological Agency	Department of Climate Change, MONRE
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STT	M&E indicator	Explanation of indicators	Data/information to be collected	Method of calculation	Reporting period	Sources of data/ documents	Responsible authority
1.2	Climate change and sea level rise scenarios are updated periodically	Evaluate progress in the development and updating of scenarios of climate change and sea level rise	<ul style="list-style-type: none"> • What is the updated version/ script? • Developing and updating progress (if issued, it is necessary to specify the date, month and year of issue) • Investment cost (million VND) 		Annual	Relevant agencies and units in MONRE	Department of Climate Change, MONRE
1.3	Number of newly built and upgraded hydrometeorological monitoring stations and saline intrusion monitoring stations	Count the number of new or upgraded hydrometeorological and saltwater intrusion monitoring stations	<ul style="list-style-type: none"> • Number of newly built stations • Number of stations to be upgraded • Total investment cost (million VND) 	Calculate the total number of hydrometeorological monitoring stations and saline intrusion monitoring stations built and upgraded and the total investment cost (million VND)	Annual	National Hydrometeorological Agency	Department of Climate Change, MONRE

STT	M&E indicator	Explanation of indicators	Data/information to be collected	Method of calculation	Reporting period	Sources of data/ documents	Responsible authority
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2. Disaster risk management

2.1	Number of messages of weather forecasts, other hydrometeorological forecast; forecasts and early warnings of natural disasters and extreme weather and climate phenomena are released	Statistics on the number of messages of weather forecasts, other hydrometeorological forecasts, forecasts and warnings of natural disasters and extreme weather and climate phenomena	<ul style="list-style-type: none"> Type of forecast, warning message Number of messages for each type of forecast and warning Alert forecast area of each message type 	Calculate the total number of messages for each type of forecast and warning	Annual	National Hydrometeorological Agency	Department of Climate Change, MONRE
2.2	Percentage (%) of people in areas at risk of natural disasters caused by climate change that have access to forecasting and warning information	Determine the percentage of people who have access to forecasts and warning information in forecasted and warning areas	<ul style="list-style-type: none"> Number of people in forecast and warning areas who have access to information (A) Total number of people in the area (B) Percentage of people having access to information (C) 	$C (\%) = A/B \times 100$	Annual	Related agencies and units in MONRE	Department of Climate Change, MONRE

STT	M&E indicator	Explanation of indicators	Data/information to be collected	Method of calculation	Reporting period	Sources of data/ documents	Responsible authority
2.3	Percentage of households in disaster-prone areas that have been relocated to a safe place.	Determine the extent of population relocation to safe places in disaster-prone areas	<ul style="list-style-type: none"> • Number of households relocated to a safe place in the event of a disaster (A) • Total number of households in the relocation area (B) • Percentage of households being relocated (C) 	$C (\%) = A/B \times 100$	Annual	Relevant agencies and units in MARD	Agency in charge/ focal point on climate change of MARD
2.4	Number of disaster risk zoning maps for the whole country, detailed to the commune level, especially for high-risk areas, that have been developed	Tally the number of disaster risk zoning maps	<ul style="list-style-type: none"> • Name of map type of disaster risk zoning • Rate of the map • Zoning scope (national, regional, provincial, district, or commune level) • Number of maps of each type 	Calculate the number of disaster risk zoning maps for each type and the total number of all zoning maps created	Annual	Relevant agencies and units in MONRE, MARD	Agency in charge/ focal point on climate change of MONRE and MARD

STT	M&E indicator	Explanation of indicators	Data/information to be collected	Method of calculation	Reporting period	Sources of data/ documents	Responsible authority
2.5	Number of irrigation, hydroelectricity, and disaster prevention projects built, upgraded, and made safe	Statistics on construction and upgrading of irrigation, hydroelectricity and natural disaster prevention and control works under the management of ministry; number of works to be kept in safe through natural disasters	<ul style="list-style-type: none"> • Name of construction and upgrading works • Type of works (irrigation, hydroelectricity, disaster prevention) • Project site • Type of construction (new construction, upgrading) • Implementation cost (million VND) • Number of works to be kept in safe 	<ul style="list-style-type: none"> • Calculate the total number of new construction for each type of upgrading work and the total cost for implementation • Calculate the total number of works kept safe 	Annual	Relevant units in MARD and MOIT	Agency in charge/ focal point on climate change of MARD and MOIT
2.6	Loss and damage caused by climate change are statistically and periodically reported	Statistics on loss and damage caused by climate change	<ul style="list-style-type: none"> • Damage type • Number of people damaged (dead, injured) • Number of damaged houses and structures along with the value of damage • Area (ha) of crops damaged with damage value 	Statistics on loss and damage and make report on damage statistics	Annual	Relevant agencies and units in the ministries	Climate change agency/focal point of the ministries

STT	M&E indicator	Explanation of indicators	Data/information to be collected	Method of calculation	Reporting period	Sources of data/ documents	Responsible authority
			<ul style="list-style-type: none"> • Number of livestock damaged (heads) with damage value • Total length (m) of the highways damaged due to landslide, flood • Total length (m) of the national rail track damaged, flooded • Total number of bridges and drains on national highways and railways damaged • Total number of signs and signals on the central inland waterways, maritime routes, and in the aviation sector drifting and damaged • Other damage, if any 				

STT	M&E indicator	Explanation of indicators	Data/information to be collected	Method of calculation	Reporting period	Sources of data/ documents	Responsible authority
2.7	Number of reservoirs with flood prevention plan for downstream in case of emergency discharge and dam failure	Quantify statistics on reservoirs under the management of the ministry as a flood prevention plan for downstream in case of emergency discharge and dam failure	<ul style="list-style-type: none"> Reservoir name Place 	Statistics on the total number of reservoirs with the plan	Annual	Relevant agencies and units in the ministries	Climate change agency/focal point of the ministries

IV. Investment resources for climate change adaptation

1. Investment resources

1.1	State budget	Determine the state budget to spend on activities related to climate change, including development of plans, strategies, programs, and projects under the management of the ministry	<ul style="list-style-type: none"> Total state budget spent on activities related to climate change under the management of the ministry (A) Total operating budget of the ministry (B) Ratio of budget spending on climate change (C) 	$C (\%) = A/B \times 100$	Annual	Relevant agencies and units in the ministries	Climate change agency/focal point of the ministries
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STT	M&E indicator	Explanation of indicators	Data/information to be collected	Method of calculation	Reporting period	Sources of data/ documents	Responsible authority
1.2	International aid (official development assistance loan and non-refundable)	Determine international funding sources for activities related to climate change under the management of the ministry	<ul style="list-style-type: none"> • Total international support capital spent on activities related to climate change under the management of the ministry (A) • Total international support capital for the operation of the ministry (B) • Ratio spending on climate change (C) 	$C (\%) = A/B \times 100$	Annual	Relevant agencies and units in the ministries	Climate change agency/focal point of the ministries
1.3	Investment from the private sector	Identify sources of private investment for activities related to climate change under the management of the ministry	<ul style="list-style-type: none"> • Total private investment capital spent on activities related to climate change under the management of the ministry (A) • Total private investment for the operation of the ministry (B) • Ratio spending on climate change (C) 	$C (\%) = A/B \times 100$	Annual	Relevant agencies and units in the ministries	Climate change agency/focal point of the ministries

STT	M&E indicator	Explanation of indicators	Data/information to be collected	Method of calculation	Reporting period	Sources of data/ documents	Responsible authority
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2. Management and use of investment resources

2.1	Ratio of disbursement of funds for climate change adaptation	Determine the disbursement ratio of funds spent on climate change adaptation under the management of the ministry	<ul style="list-style-type: none"> Total disbursed amount corresponding to each capital source (1.2, 1.2, 1.3 above) for climate change adaptation (D). Disbursement ratio corresponding to each funding source for climate change adaptation (E) 	$E (\%) = D/A$	Annual	Relevant agencies and units in the ministries	Climate change agency/focal point of the ministries
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V. Science, technology, and international cooperation

1. Scientific research, technology application

1.1	Number of programs and tasks of science and technology for climate change adaptation implemented	Tally the number of scientific and technological programs and tasks for climate change adaptation implemented	<ul style="list-style-type: none"> Name of program, task Investment funds for each program and task 	Calculate the total number of science and technology programs and tasks for climate change adaptation and the total investment budget for programs and tasks	Annual	Relevant agencies and units in Ministry of Science and Technology (MOST)	Agency in charge/ focal point on climate change of MOST
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STT	M&E indicator	Explanation of indicators	Data/information to be collected	Method of calculation	Reporting period	Sources of data/ documents	Responsible authority
1.2	Number of applied technologies for climate change adaptation activities	Count the number of new technologies applied to climate change adaptation activities in the ministry	<ul style="list-style-type: none"> • New technology name for climate change adaptation activities • Summary of scale and beneficiaries • Place of application 	Calculate total type of new technology for climate change adaptation activities	Annual	Relevant agencies and units in the ministries	Climate change agency /focal point of the ministries
1.3	Number of inventions and utility solutions for climate change adaptation filed, granted, and applied in practice	Count the number of inventions and useful solutions for climate change adaptation	<ul style="list-style-type: none"> • Name of invention, utility solution for climate change adaptation • Summary of scale and beneficiaries • Place of application 	Calculate the total number of inventions and utility solutions for climate change adaptation activities	Annual	Relevant agencies and units in MOST	Agency in charge/ focal point on climate change of MOST

2. International cooperation

2.1	Number of international treaties and agreements on climate change	List of international treaties and agreements on climate change	<ul style="list-style-type: none"> • Name of the treaty, international agreement on climate change • Participating agency • Effective time 	Calculate the total number of treaties and agreements for climate change adaptation activities	Annual	Department of Climate Change	Department of Climate Change, MONRE
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STT	M&E indicator	Explanation of indicators	Data/information to be collected	Method of calculation	Reporting period	Sources of data/ documents	Responsible authority
2.2	Number of international cooperation programs and projects on climate change adaptation implemented	Tally the number of international cooperation programs and projects on climate change adaptation	<ul style="list-style-type: none"> Name of climate change adaptation program and project Implementation time Implementation location Investment budget (million VND) 	Calculating the total number of programs, projects, and total investment funds for climate change adaptation activities.	Annual	Relevant agencies and units in the ministries	Climate change agency/focal point of the ministries

VI. Training, propaganda, and awareness raising

1. Professional training on climate change

1.1	Number of civil servants, public employees, and employees who have been trained, fostered on climate change	Count the number of civil servants, public employees, and employees participating in training or participating in seminars/workshops on climate change	Number of civil servants, public employees, and employees participating in each training class/course or workshop on climate change	Calculate the total number of civil servants, public employees, and employees participating in training courses/workshops/seminars on climate change	Annual	Relevant agencies and units in the ministries	Agency in charge/focal point on climate change of the ministries
1.2	Number of educational and training institutions that teach about climate change	Count the number of institutions in the ministry training on climate change issues under their management	Name and type of each educational and training institution that teaches climate change	Calculate the total number of institutions that teach on climate change	Annual	Relevant agencies and units in the ministries	Climate change agency/focal point of the ministries

STT	M&E indicator	Explanation of indicators	Data/information to be collected	Method of calculation	Reporting period	Sources of data/ documents	Responsible authority
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2. Propaganda and awareness-raising activities on climate change

2.1	Number of programs and activities to raise awareness about climate change adaptation	Count the number of programs, activities, seminars by the ministry with information content, raising awareness about adaptation to climate change	<ul style="list-style-type: none"> Name of program, activity, workshop on climate change Place of performance 	Calculate the total number of programs, activities, seminars on climate change	Annual	Relevant agencies and units in the ministries	Climate change agency/focal point of the ministries
2.2	Percentage of people receiving information and raising awareness about climate change adaptation	Assess the level of propaganda to raise awareness about climate change in the cadres, civil servants, public employees, and employees	<ul style="list-style-type: none"> Total number of cadres, civil servants, public employees, and employees participating in propaganda and awareness-raising activities (A) Total number of cadres, civil servants, public employees, and employees of the ministry (B) Participation rate (C) 	$C (\%) = A/B \times 100$	Annual	Relevant agencies and units in the ministries	Climate change agency/focal point of the ministries

Table A2. Guidelines for information collection and calculation for M&E indicators at the local level

STT	M&E indicator	Explanation of indicators	Data/information to be collected	Method of calculation	Reporting period	Sources of data/documents	Responsible authority
I. Climate change management							
1. Perfecting institutions and policies							
2. Formulate and issue strategies, master plans, plans, programs, schemes, projects							
2.2	Number of master plans related to climate change adaptation issued	Statistics on local master plans with contents related to climate change adaptation being developed or issued	<ul style="list-style-type: none"> Name of the plan Summary of related content Update status: under development or issued 	Statistics on the total number of master plans with contents related to climate change adaptation; the number of plans under development; number of issued plans	Annual	Local departments, branches and related agencies	Natural Resources and Environment Department
2.3	Number of plans related to climate change adaptation issued	Statistics on local plans with content related to climate change adaptation being developed or issued	<ul style="list-style-type: none"> Name of the plan Summary of related content Update status: under development or issued 	Statistics on the total number of plans related to climate change adaptation; number of plans are developing, number of plans issued	Annual	Local departments, branches and related agencies	Natural Resources and Environment Department

STT	M&E indicator	Explanation of indicators	Data/information to be collected	Method of calculation	Reporting period	Sources of data/ documents	Responsible authority
2.4	Number of programs, schemes, and projects to adapt to climate change implemented	Statistics on programs, schemes and projects with contents related to climate change adaptation being implemented or have been implemented locally	<ul style="list-style-type: none"> Name of program, schemes, project Summary of related content Status update: ongoing or implemented 	Statistics on the total number of programs, schemes and projects with contents related to climate change adaptation; quantity being made; quantity made	Annual	Local departments, branches, and related agencies	Natural Resources and Environment Department

3. Formulating and promulgating national technical standards, regulations, regulations, and guidelines

3.2	Number of national standards, local standards on climate change adaptation issued	Statistics on local standards with content related to climate change adaptation being developed or issued	<ul style="list-style-type: none"> Names of standards Update status: under development or issued 	Statistics on the total number of standards with content related to climate change adaptation; number of standards under development; issued standards	Annual	Local departments, branches, and related agencies	Natural Resources and Environment Department
3.3	Number of technical guidelines on climate change adaptation issued	Statistics on local technical guidelines related to climate change adaptation being developed or issued	<ul style="list-style-type: none"> Names of technical guidelines/ instructions Update status: under development or issued 	Statistics on the number of technical guidelines related to climate change adaptation; number under development; number issued	Annual	Local departments, branches, and related agencies	Natural Resources and environment Department

STT	M&E indicator	Explanation of indicators	Data/information to be collected	Method of calculation	Reporting period	Sources of data/ documents	Responsible authority
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4. Prepare report on climate change adaptation

4.3	Report on the response to climate change within the scope and field of management	Statistics on reports related to climate change response of local areas	<ul style="list-style-type: none"> Statistics on reports (quarterly, 6-monthly, annually) of the local areas; status (under development, completed) 	Calculate the total number of reports by type, in the fields; number under development, number completed	Annual	Local departments, branches, and related agencies	Natural Resources and Environment Department
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5. Integrating content of climate change adaptation into strategies, master plans and plans

5.2	Percentage of strategies, master plans, and plans that mainstream climate change adaptation content	Assess the degree of mainstreaming of climate change adaptation content into local strategies, master plans, and plans of management fields	<ul style="list-style-type: none"> Names of strategies, master plans, and plans that incorporate climate change adaptation content Adaptive content is mainstreaming in strategies, master plans, plans Total number of issued strategies, master plans, and plans (A) Total number of strategies, master plans, and plans that mainstream climate change adaptation content (B) 	$C (\%) = B/A \times 100$	Annual	Local departments, branches, and related agencies	Natural Resources and Environment Department
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STT	M&E indicator	Explanation of indicators	Data/information to be collected	Method of calculation	Reporting period	Sources of data/ documents	Responsible authority
			<ul style="list-style-type: none"> Mainstreaming rate (C) 				

6. Improve the organization, apparatus and human resources to respond to climate change

6.1	Specialized agency to respond to climate change	Statistics on agencies in charge or specialized focal points on climate change response at departments and agencies under local management	<ul style="list-style-type: none"> Name of agency, specialized unit, or focal point on climate change Number of agencies, units assigned to be in charge of, or focal points on climate change 	Calculate the number of agencies, specialized units or focal points on climate change	Annual	Local departments, branches, and related agencies	Natural Resources and Environment Department
6.2	Number of civil servants, public employees, and employees working in the field of response to climate change	Statistics on the number of civil servants, public employees, and employees working in the field of response to climate change in the locality	<ul style="list-style-type: none"> Number of civil servants, public employees and employees working in the field of climate change response 	Calculating the total number of civil servants, public employees and employees working in the field of climate change	Annual	Local departments, branches, and related agencies	Natural Resources and Environment Department

STT	M&E indicator	Explanation of indicators	Data/information to be collected	Method of calculation	Reporting period	Sources of data/ documents	Responsible authority
II. Strengthen resilience, capacity to adapt to climate change in all fields							
1. Agriculture, forestry, fishery							
1.1	Number and types of new plant and animal varieties to adapt to climate change are selected	Statistics on and synthesis of the quantity and types of locally selected plant and animal varieties that can adapt to climate change	<ul style="list-style-type: none"> Name and number of varieties of crops adapted to climate change. Name and number of livestock breeds adapted to climate change 	Statistical names and types of plant varieties and livestock	Annual	Local departments, branches, and agencies in charge of local new plant and animal breed statistics	Natural Resources and Environment Department
1.2	Scale of application of new plant and animal varieties adapted to climate change	Determine the level of application of new plant varieties and new livestock breeds to adapt to climate change	<ul style="list-style-type: none"> Planting area for each new plant variety (ha) Total planted area with all new plant varieties (ha) Number of livestock of each new breed (heads) Total number of new livestock of all kinds (heads); 	Calculate the total area of crops and the number of livestock applying the new variety	Annual	Local departments, branches, and agencies in charge of local new plant and animal breed statistics	Natural Resources and Environment Department

STT	M&E indicator	Explanation of indicators	Data/information to be collected	Method of calculation	Reporting period	Sources of data/ documents	Responsible authority
1.3	The number and scale of production and farming models adapted to climate change are transformed	Determine the level of production and farming conversion to adapt to climate change locally	<ul style="list-style-type: none"> Name of each model converted production and cultivation, applied location (commune, district) Scale of application for each production and cultivation model: cultivation is calculated by planting area (ha); livestock production is calculated by the number of livestock (heads) Total area and total number of livestock of converted production and farming models 	Calculate the total number of models, total cultivated area, total number of livestock applied the models	Annual	Department of Agriculture and Rural Development and relevant local agencies	Natural Resources and Environment Department
1.4	Quantity and scale of technology, useful solutions in production, and farming applied	Determine the scale of application of useful technologies and solutions in farming production to adapt to climate change made by locality	<ul style="list-style-type: none"> Name of each technology, useful solution in production and farming applied Location of application of useful technology and solutions (commune, district) 	Calculate the total number of solutions and technologies; total cultivated area, total number of livestock to which solutions and technologies are applied	Annual	Department of Agriculture and Rural Development and relevant local agencies	Natural Resources and Environment Department

STT	M&E indicator	Explanation of indicators	Data/information to be collected	Method of calculation	Reporting period	Sources of data/ documents	Responsible authority
			<ul style="list-style-type: none"> Application scale is calculated by area (ha) for cultivation, number of livestock (heads) for animal husbandry 				
1.5	Areas of special-use, coastal, and watershed protection forests protected, replanted, and restored for the purpose of climate change adaptation	Determine the size of the area of forests (including special-use forests, coastal protection forests, watershed protection forests) that are protected, planted, and restored by the locality for the purpose of climate change adaptation	<p>For each type of forest (special-use forest, coastal protection forest, watershed protection forest) it is necessary to identify:</p> <ul style="list-style-type: none"> Protected area (ha) Newly planted area (ha) Restored area (ha) 	<ul style="list-style-type: none"> Calculate the total area of protection, new planting and restoration for each type of forest Calculate the total area of protection, restoration, and new planting for all three types of forests 	Annual	Department of Agriculture and Rural Development and relevant local agencies	Natural Resources and Environment Department
1.6	Quantity and scale of high technology in forecasting, prevention, and control of forest fires applied	Determine the type and scale of local high technologies applied in forest fire forecasting, prevention and control	<ul style="list-style-type: none"> Name of high technology in forest fire forecasting and prevention Scale of area to be applied technology (ha) 	<ul style="list-style-type: none"> Statistical names of types of high technology in forecasting and preventing forest fires 	Annual	Department of Agriculture and Rural Development and relevant local agencies	Natural Resources and Environment Department

STT	M&E indicator	Explanation of indicators	Data/information to be collected	Method of calculation	Reporting period	Sources of data/ documents	Responsible authority
				<ul style="list-style-type: none"> Determination of the area (ha) of forest to which the technology is applied 			

2. Environment and biodiversity

2.2	Number and size of protected areas, rescued areas, off-site conservation, and breeding of threatened species established	Scale up and establish conservation, rescue, and peripheral conservation areas that raise and breed newly threatened species	<ul style="list-style-type: none"> Name, area (ha) and location of the protected area for threatened species Name, area (ha) and location of the rescued areas for threatened species Name, area (ha) and location of the peripheral reserve for raising and breeding of threatened species Total area of conservation, rescue, and conservation areas in the periphery of raising and breeding (ha) 	<ul style="list-style-type: none"> Statistics on names, areas and locations of conservation, rescue, and conservation areas in the periphery of raising and breeding. Calculate total number of zones and total area of zones 	Annual	Department of Natural Resources and Environment and relevant local agencies	Natural Resources and Environment Department
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STT	M&E indicator	Explanation of indicators	Data/information to be collected	Method of calculation	Reporting period	Sources of data/ documents	Responsible authority
2.3	Number of biodiversity conservation models in areas with high biodiversity and vulnerable to climate change deployed	Statistics on biodiversity conservation models in areas with high biodiversity and vulnerable to climate change deployed locally	For each model type it is necessary to define: <ul style="list-style-type: none"> • Model name • Model application area (ha) • Implementation location (commune, district) 	<ul style="list-style-type: none"> • General statistics of model name, application area (ha) and application location • Calculate the total number of model types and the total applicable area 	Annual	Department of Natural Resources and Environment, Department of Agriculture and Rural Development, relevant local agencies	Natural Resources and Environment Department
2.4	Percentage of degraded important natural ecosystems restored	Assess the results of restoration of degraded important natural ecosystems by the locality	<ul style="list-style-type: none"> • The name of the degraded ecosystem is restored • Location of the ecosystem • Total degraded area (ha) (A) • Restored degraded area (ha) (B) • Proportion of area restored (C) 	<ul style="list-style-type: none"> • $C (\%) = B/A \times 100$ 	Annual	Department of Natural Resources and Environment, Department of Agriculture and Rural Development, relevant local agencies	Natural Resources and Environment Department

STT	M&E indicator	Explanation of indicators	Data/information to be collected	Method of calculation	Reporting period	Sources of data/ documents	Responsible authority
2.5	Number and scale of ecosystem-based climate change adaptation models deployed	Determine the scale of application of climate change adaptation models based on the local ecosystem	<ul style="list-style-type: none"> Names of climate change models based on ecosystem Area of application (ha) Where to apply the model 	Statistics on model name, application area (ha), model application location. Calculate total number of models and total area of model application (ha)	Annual	Department of Natural Resources and Environment, Department of Agriculture and Rural Development, relevant local agencies	Natural Resources and Environment Department

3. Water resources

3.1	Number and scale of models of economical and efficient exploitation and use of water deployed	Determine the diversity and scale of applying local models of economical and efficient water exploitation and use	<ul style="list-style-type: none"> Name of the model of economical and efficient exploitation and use of water being deployed Scale of application (for example: area to be applied the model (ha) if it is cultivation; area of farm (ha) and number of livestock (head), area of ponds and lakes (ha) in case of livestock or aquaculture, etc.) Location of model application 	Statistics on the total number of models and calculate the total area (ha), the number of livestock (head) applied the model, etc.	Annual	Department of Natural Resources and Environment, Department of Agriculture and Rural Development, relevant local agencies	Natural Resources and Environment Department
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STT	M&E indicator	Explanation of indicators	Data/information to be collected	Method of calculation	Reporting period	Sources of data/ documents	Responsible authority
3.2	Number and scale of water storage works in the situation of water scarcity, drought, and saltwater intrusion increase due to climate change deployed	Determine the water storage potential of local construction projects to adapt to conditions of water scarcity, drought, and increased saltwater intrusion due to climate change	<ul style="list-style-type: none"> Name of the water storage facility Location of the project Design capacity (capability) of water storage (m³) 	Calculating total number of works and total design water storage capacity (m ³)	Annual	Department of Natural Resources and Environment, Department of Agriculture and Rural Development, relevant local agencies	Natural Resources and Environment Department
3.3	Number of stations to monitor water resources (surface water and underground water) built and operated	Tally the number of local water resource monitoring stations built and operated	<ul style="list-style-type: none"> Name of monitoring station Monitoring factors Construction location Total investment (million VND) 	<ul style="list-style-type: none"> Statistics on monitoring stations Calculate the total number of stations built and operated and the total investment of stations 	Annual	Departments of Natural Resources and Environment, Agriculture and Rural Development, Industry and Trade and relevant local agencies	Natural Resources and Environment Department

STT	M&E indicator	Explanation of indicators	Data/information to be collected	Method of calculation	Reporting period	Sources of data/ documents	Responsible authority
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4. Transportation

4.1	Number of road and waterway transport works/ projects in areas often threatened by floods, sea level rise, landslides built, improved, and upgraded	Determine the quantity and cost of road and waterway traffic works or projects in areas often threatened by floods, sea level rise, landslides (under 3 categories: construction, improvement, upgrading) done locally	<ul style="list-style-type: none"> Name of the work or project Type of implementation (new construction, renovation, upgrading) Construction cost (million VND) 	Statistics on total number of works/ projects built, renovated, upgraded, and total investment cost	Annual	Department of Transport and relevant local agencies	Natural Resources and Environment Department
4.2	Volume (km) of roads in areas often threatened by floods, sea level rise, landslides built, improved, and upgraded	Determine the number of kilometers of roads and bridges newly built, improved, and upgraded by the locality in areas often threatened by floods, sea level rise, landslides	<ul style="list-style-type: none"> Road name Type of implementation (new construction, improving or upgrading) Number of kilometers made Investment cost (million VND) 	Calculate the total volume (km) implemented according to the type of implementation and the total investment cost	Annual	Department of Transport and relevant local agencies	Natural Resources and Environment Department

STT	M&E indicator	Explanation of indicators	Data/information to be collected	Method of calculation	Reporting period	Sources of data/ documents	Responsible authority
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5. Construction, urban

5.1	Number of technical infrastructure works for flood prevention and control in urban areas built and upgraded	Determine the name and number of urban flood prevention and control construction works built or upgraded by the locality	<ul style="list-style-type: none"> Name of the project Type of implementation (new construction or upgrading) Construction location Investment cost (million VND) 	Statistics on works by type of implementation and total investment cost	Annual	Department of Construction and relevant local agencies	Natural Resources and Environment Department
5.2	Proportion (%) of the population in areas frequently affected by storms, storm surges, floods, riverbank erosion, coastal erosion, flash floods, landslides located, relocated, arranged	Determine the level of placement, relocation, and arrangement population by local authorities in areas frequently affected by storms, storm surges, floods, riverbank and coastal erosion, flash floods, landslides	<ul style="list-style-type: none"> Name of area or place Total population of the area or place (person) (A) Total number of population to be relocated, relocated, and arranged (B) Determine the percentage to be relocated or arranged (C) 	$C (\%) = B/A \times 100$	Annual	Relevant local authorities	Natural Resources and Environment Department

STT	M&E indicator	Explanation of indicators	Data/information to be collected	Method of calculation	Reporting period	Sources of data/ documents	Responsible authority
5.3	Number of houses that are safe from storms, floods, and sea level rise built	Tally the number of houses that are safe from storms, floods, and sea level rise built by the locality	<ul style="list-style-type: none"> • Area for construction of safe houses (by commune, district) • Number of safe houses built (piece/ house) • Construction cost (million VND) 	<ul style="list-style-type: none"> • Statistics on the number of houses that are safe from storms, floods and sea level rise built in the province • Calculate total construction cost 	Annual	Local Department of Construction and Department of Agriculture and Rural Development	Natural Resources and Environment Department

6. Industry, commerce, service

6.1	Number of energy infrastructure projects built and upgraded to adapt to climate change	Statistics on the number of local energy projects built or upgraded for climate change adaptation purposes	<ul style="list-style-type: none"> • Name of energy infrastructure project for climate change adaptation • Location of work • Type of implementation (construction or upgrading) • Total investment cost (million VND) 	<ul style="list-style-type: none"> • Counting the total number of new or upgraded energy infrastructure projects for climate change adaptation purposes. • Calculate total investment cost (million VND) 	Annual	Department of Industry and Trade and related agencies	Natural Resources and Environment Department
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STT	M&E indicator	Explanation of indicators	Data/information to be collected	Method of calculation	Reporting period	Sources of data/ documents	Responsible authority
6.2	Number of industrial production infrastructure projects built and upgraded to adapt to climate change	Statistics on infrastructure works for industrial production for climate change adaptation purposes built and upgraded by localities	<ul style="list-style-type: none"> Name of industrial production infrastructure works to adapt to climate change Location of works Type of implementation (new construction or upgrading) Total investment cost (million VND) 	<ul style="list-style-type: none"> Tally the total number of industrial production infrastructure works for climate change adaptation purposes built or upgraded Calculate the total investment cost 	Annual	Department of Industry and Trade and related agencies	Natural Resources and Environment Department
6.3	Number of commercial and service infrastructure projects built and upgraded to adapt to climate change	Statistics on commercial and service infrastructure projects for climate change adaptation purposes built and upgraded by localities	<ul style="list-style-type: none"> Name of commercial and service infrastructure works to adapt to climate change Location of works Type of implementation (new construction or upgrading) Total investment cost (million VND) 	<ul style="list-style-type: none"> Count the total number of commercial and service infrastructure works to adapt to climate change built or upgraded. Calculate total investment cost (million VND) 	Annual	Department of Industry and Trade and related agencies	Natural Resources and Environment Department

STT	M&E indicator	Explanation of indicators	Data/information to be collected	Method of calculation	Reporting period	Sources of data/ documents	Responsible authority
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7. Medicine and public health

7.1	Upgraded medical facilities for medical examination and treatment, and disease prevention and control in areas at high risk of impacts of climate change	Statistics on health facilities for medical examination and treatment and disease prevention and control, newly built or upgraded by localities in areas at risk of climate change impacts	<ul style="list-style-type: none"> Name of the medical facility for medical examination and treatment and disease prevention Facility location Type of implementation (new construction or upgrading) Total investment cost (million VND) 	<ul style="list-style-type: none"> Count the total number of local medical facilities for, medical examination and treatment and disease prevention, newly built or upgraded. Calculate the total investment capital (million VND) 	Annual	Department of Health and related agencies	Natural Resources and Environment Department
7.2	Number of medical facilities for medical examination, and treatment provided with equipment for the prevention and treatment of diseases related to climate change	Statistics on the number of local medical facilities for, medical examination, and treatment capable of treating climate-sensitive diseases, including malaria, diarrhea, respiratory, cardiovascular diseases	<ul style="list-style-type: none"> Name of medical facilities for medical examination, and treatment capable of treating climate-sensitive diseases Facility location Total investment cost (million VND) 	<ul style="list-style-type: none"> Count medical facilities for medical examination, and treatment capable of treating malaria, diarrhea, respiratory and cardiovascular diseases. Calculate total investment cost (million VND) 	Annual	Department of Health and related agencies	Natural Resources and Environment Department

STT	M&E indicator	Explanation of indicators	Data/information to be collected	Method of calculation	Reporting period	Sources of data/ documents	Responsible authority
7.3	Number of bulletins warning of disease and health risks due to extreme weather and climate	Statistics on the number of local news bulletins and media articles related to warnings of disease risks, health due to weather, extreme climate	<ul style="list-style-type: none"> Names of newsletters and articles related to health due to climate change impacts Number of newsletters and articles Release time Warning content and scope 	Tally statistics of news bulletins, articles related to disease risk, health due to weather, extreme climate	Annual	Department of Health and related agencies	Natural Resources and Environment Department

8. Labor and society

8.1	Number of vocational training and livelihood transformation programs for communities and groups vulnerable to the impacts of climate change	Statistics on the number of vocational training programs and number of training programs on livelihood transformation for communities and vulnerable groups due to climate change impacts conducted by the locality	<ul style="list-style-type: none"> Name of the vocational training program Name of livelihood conversion program 	Calculate the total number of vocational training programs and the total number of implemented livelihood transformation programs	Annual	Department of Labor, Invalids and Social Affairs and related agencies	Natural Resources and Environment Department
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STT	M&E indicator	Explanation of indicators	Data/information to be collected	Method of calculation	Reporting period	Sources of data/ documents	Responsible authority
8.2	Percentage of people and women in vulnerable areas due to climate change who received vocational training and changed livelihoods	Determine the percentage of women compared to the total number of people participating in vocational training and livelihood transformation organized by the locality	For each vocational training program and livelihood transformation program: <ul style="list-style-type: none"> • Total number of people participating (A) • Number of women participants (B) • Participation (%) rate of women (C) 	$C (\%) = B/A \times 100$	Annual	Relevant local authorities	Natural Resources and Environment Department
8.3	Percentage of people and women in vulnerable areas due to climate change impacts who are trained in soft skills on climate change adaptation and disaster prevention	Determine the proportion of people and women compared to the total number of people who can attend local programs/training courses on climate change adaptation and disaster prevention	For each program/ training course: <ul style="list-style-type: none"> • Name of training program/course • Total number of people participating (A) • Number of women participating (B) • Participation (%) rate of women (C) 	$C (\%) = B/A \times 100$	Annual	Relevant local authorities	Natural Resources and Environment Department

STT	M&E indicator	Explanation of indicators	Data/information to be collected	Method of calculation	Reporting period	Sources of data/ documents	Responsible authority
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9. Culture, sports, tourism

9.1	Number of historical-cultural relics and scenic spots in areas affected by climate change preserved, repaired, and restored	Count the number of historical-cultural relics and scenic spots in the area affected by climate change that are preserved, repaired, or restored by the locality	<ul style="list-style-type: none"> Name of historical-cultural site or scenic spot Place Type of implementation (preserved, repaired, restored) Investment cost (million VND) 	Calculate the total number of historical-cultural relics, or scenic spots according to each type of implementation (preserved, repaired, restored) and calculate the total investment cost	Annual	Department of Culture, Sports and Tourism	Natural Resources and Environment Department
9.2	Number of tourism infrastructure works in areas affected by climate change built and upgraded	Count the number of tourism infrastructure works in the area affected by climate change that is built and upgraded by the locality	<ul style="list-style-type: none"> Name of tourism infrastructure work Location Type of implementation (new construction or upgrading) Investment cost (million VND) 	Calculate the total number of tourist infrastructure by type of implementation and total investment cost	Annual	Department of Culture, Sports and Tourism	Natural Resources and Environment Department

STT	M&E indicator	Explanation of indicators	Data/information to be collected	Method of calculation	Reporting period	Sources of data/ documents	Responsible authority
9.3	Number of sports facilities in areas affected by climate change that have been renovated and upgraded	Count the number of sports facilities in the area affected by climate change that have been renovated and upgraded by the locality	<ul style="list-style-type: none"> Name of the sports facility Location Type of implementation (renovation, upgrading) Investment cost (million VND) 	Calculate the total number of sports facilities by type of implementation and total investment cost	Annual	Department of Culture, Sports and Tourism	Natural Resources and Environment Department

III. Reducing disaster risks, minimizing damage caused by climate change

1. Hydrometeorological observation; monitoring climate change, sea level rise and saltwater intrusion

1.3	Upgraded hydrometeorological monitoring stations and saline intrusion monitoring stations	Tally the number of hydrometeorological and saline intrusion monitoring stations built or upgraded by the locality	<ul style="list-style-type: none"> Number of newly built stations Number of stations to be upgraded Total investment cost (million VND) 	Calculate the total number of hydrometeorological monitoring stations and saline intrusion monitoring stations built and upgraded and the total investment cost (million VND)	Annual	Department of Natural Resources and Environment	Natural Resources and Environment Department
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STT	M&E indicator	Explanation of indicators	Data/information to be collected	Method of calculation	Reporting period	Sources of data/ documents	Responsible authority
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2. Disaster risk management

2.1	Number of messages of weather forecasts and other hydrometeorological forecasts, forecasts and early warnings of natural disasters, and extreme weather phenomena released	Statistics on the number of messages of weather forecasts and other hydrometeorological forecast, forecasts and early warnings of natural disasters, and extreme weather and climate phenomena issued by local forecasting agencies	<ul style="list-style-type: none"> Type of forecast, warning message Number of messages for each type of forecast and warning Alert forecast range of each message type 	Calculate the total number of messages for each type of forecast and warning	Annual	Provincial Hydro-Meteorological Observatory	Natural Resources and Environment Department
2.2	Percentage of people in areas at risk of natural disasters caused by climate change with access to forecasting and warning information	Determine the percentage of people who have access to forecasts and warning information in forecasted and warning areas	<ul style="list-style-type: none"> Number of people in forecast and warning areas who have access to information (A) Total number of people in the area (B) Percentage of people having access to information (C) 	$C (\%) = A/B \times 100$	Annual	Department of Natural Resources and Environment	Natural Resources and Environment Department

STT	M&E indicator	Explanation of indicators	Data/information to be collected	Method of calculation	Reporting period	Sources of data/ documents	Responsible authority
2.3	Percentage of households in disaster-prone areas that have been relocated to a safe place	Determine the extent to which people can be relocated to a safe place when there is a risk of natural disaster	<ul style="list-style-type: none"> • Number of households relocated to a safe place in the event of a disaster (A) • Total number of households in the relocation area (B) • Percentage of households being relocated (C) 	$C (\%) = A/B \times 100$	Annual	Department of Agriculture and Rural Development and related agencies	Natural Resources and Environment Department
2.4	Number of disaster risk zoning maps for the whole country, detailed to the commune level, especially for high-risk areas, that have been developed	Tally the number of disaster risk zoning maps developed by locality	<ul style="list-style-type: none"> • Name of map type of disaster risk zoning • Rate of the map • Zoning scope (district level or up to commune level) • Number of maps of each type 	Calculate the number of disaster risk zoning maps for each type and the total number of all zoning maps made	Annual	Department of Natural Resources and Environment and Department of Agriculture and Rural Development	Natural Resources and Environment Department

STT	M&E indicator	Explanation of indicators	Data/information to be collected	Method of calculation	Reporting period	Sources of data/ documents	Responsible authority
2.5	Number of irrigation, hydroelectricity, and disaster prevention projects built, upgraded, and safe	Statistics on irrigation, hydropower, and disaster prevention projects built and upgraded by the locality; number of works to be kept safe through natural disasters	<ul style="list-style-type: none"> Name of construction and upgrading works Type of works (irrigation, hydroelectricity, disaster prevention) Project site Type of construction (new construction, upgrading) Implementation cost (million VND) Number of works to be kept in safe 	<ul style="list-style-type: none"> Calculate the total number of works of each type newly built, upgraded, and the total cost of implementation Calculate the total number of works are kept in safe through natural disasters 	Annual	Department of Agriculture and Rural Development and Department of Information Technology	Natural Resources and Environment Department
2.6	Loss and damage caused by climate change are periodically reported and accounted for	Statistics on loss and damage due to climate change in the locality/ province	<ul style="list-style-type: none"> Damage type Number of people damaged (dead, injured) Number of damaged houses and structures along with the value of damage Area (ha) of crops damaged with damage value 	Damage statistics with reports	Annual	Relevant local authorities	Natural Resources and Environment Department

STT	M&E indicator	Explanation of indicators	Data/information to be collected	Method of calculation	Reporting period	Sources of data/ documents	Responsible authority
			<ul style="list-style-type: none"> • Number of livestock (heads) damaged with damage value • Total length (m) of the road (except highways) is landslide, flooded, damaged • Total number of bridges and drains on road (not on national highways and railways) was damaged • Total number of signs and signals on the road (except highways), local inland waterways drifting and damaged • Other damage, if any 				

STT	M&E indicator	Explanation of indicators	Data/information to be collected	Method of calculation	Reporting period	Sources of data/ documents	Responsible authority
2.7	Number of reservoirs with flood prevention plans for downstream in case of emergency discharge and dam failure	Quantify statistics on reservoirs managed by the locality with flood prevention plans for downstream in case of emergency discharge and dam failure	<ul style="list-style-type: none"> Reservoir name Place 	Statistics on the total number of reservoirs with the plan	Annual	Department of Agriculture and Rural Development and Department of Information Technology	Natural Resources and Environment Department

IV. Investment resources for climate change adaptation

1. Investment resources

1.1	State budget	Determine the state budget to spend on activities related to climate change including development of plans, strategies, programs, and projects in the locality	<ul style="list-style-type: none"> Total state budget spent on activities related to climate change under local management (A) Total local operating budget (B) Ratio of budget spending on climate change (C) 	$C (\%) = A/B \times 100$	Annual	Departments, branches and relevant local agencies	Natural Resources and Environment Department
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STT	M&E indicator	Explanation of indicators	Data/information to be collected	Method of calculation	Reporting period	Sources of data/ documents	Responsible authority
1.2	International aid (official development assistance loan and non-refundable)	Determine the international aid for local climate change-related activities	<ul style="list-style-type: none"> • Total international support capital spent on activities related to climate change under local management (A) • Total international support capital for local operations (B) • Ratio of spending on climate change (C) 	$C (\%) = A/B \times 100$	Annual	Departments, branches and relevant local agencies	Natural Resources and Environment Department
1.3	Capital from the private sector	Identify sources of private investment for local climate change-related activities	<ul style="list-style-type: none"> • Total private investment for climate change-related activities under local management (A) • Total private investment for local operations (B) • Ratio of spending on climate change (C) 	$C (\%) = A/B \times 100$	Annual	Departments, branches and relevant local agencies	Natural Resources and Environment Department

STT	M&E indicator	Explanation of indicators	Data/information to be collected	Method of calculation	Reporting period	Sources of data/ documents	Responsible authority
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2. Management and use of investment resources

2.1	Ratio of disbursement of funds for climate change adaptation	Determine the disbursement ratio of capital sources (1.1, 1.2, 1.3 above) for local climate change adaptation	<ul style="list-style-type: none"> Total disbursed amount corresponding to each funding source for climate change adaptation (D). Disbursement ratio corresponding to each funding source for climate change adaptation (E) 	$E (\%) = D/A$	Annual	Departments, branches and relevant local agencies	Natural Resources and Environment Department
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V. Science, technology, and international cooperation

1. Scientific research, technology application

1.2	Number of applied technologies for climate change adaptation activities	Count the number of new technologies applied by locality to climate change adaptation activities	<ul style="list-style-type: none"> New technology name for climate change adaptation activities Summary of scale and beneficiaries Place of application 	Calculate total new technology for climate change adaptation activities	Annual	Departments, branches and relevant local agencies	Natural Resources and Environment Department
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STT	M&E indicator	Explanation of indicators	Data/information to be collected	Method of calculation	Reporting period	Sources of data/ documents	Responsible authority
1.3	Number of inventions and utility solutions for climate change adaptation filed, granted, and applied in practice	Count the number of inventions and utility solutions made by locality for climate change adaptation	<ul style="list-style-type: none"> Names of inventions and utility solutions for climate change adaptation Current status (applications, degrees) Summary of size and beneficiaries Place of application 	Calculating the total number of inventions and utility solutions for climate change adaptation activities	Annual	Department of Science and Technology and relevant local agencies	Natural Resources and Environment Department

2. International cooperation

2.2	Number of international cooperation programs and projects on climate change adaptation implemented	Tally the number of international cooperation programs and projects on climate change that are managed by local authorities	<ul style="list-style-type: none"> Name of climate change adaptation program and project Implementation time Implementation location Investment budget (million VND) 	Calculating the total number of programs, projects, and total investment funds	Annual	Departments, branches and relevant local agencies	Natural Resources and Environment Department
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STT	M&E indicator	Explanation of indicators	Data/information to be collected	Method of calculation	Reporting period	Sources of data/ documents	Responsible authority
VI. Training, propaganda, awareness raising							
1. Professional and professional training on climate change							
1.1	Number of civil servants, public employees, and employees who have been trained, fostered on climate change	Count the number of people participating in training or participating in workshops on climate change organized by the locality	<ul style="list-style-type: none"> Number of people participating in training courses, workshops, or seminars on climate change 	Calculate the total number of people participating in training courses, workshops, or seminars on climate change	Annual	Departments, branches and relevant local agencies	Natural Resources and environment Department
1.2	Number of educational and training institutions that teach about climate change	Count the number of educational and training institutions under local management that teach about climate change	<ul style="list-style-type: none"> Name and type of each educational and training institution that teaches on climate change 	Calculating the total number of institutions teaching about climate change	Annual	Departments, branches and relevant local agencies	Natural Resources and Environment Department

STT	M&E indicator	Explanation of indicators	Data/information to be collected	Method of calculation	Reporting period	Sources of data/ documents	Responsible authority
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2. Propaganda and awareness-raising activities on climate change

2.1	Number of programs and activities to raise awareness about climate change adaptation	Tally the number of programs, activities, and seminars organized by the locality with content to propagate and raise awareness of adaptation to climate change	<ul style="list-style-type: none"> Name of program, activity, workshop on climate change Place of performance 	Calculating the total number of programs, activities, seminars on climate change	Annual	Departments, branches and relevant local agencies	Natural Resources and Environment Department
2.2	Percentage of people receiving propaganda and raising awareness about climate change adaptation	Assess the level of propaganda to raise awareness about climate change for people in the area	<ul style="list-style-type: none"> Total number of people participating in propaganda and awareness-raising activities about climate change, organized by both central and local governments (A) Total population of the locality (B) Ratio (C) 	$C (\%) = A/B \times 100$	Yearly	Departments, branches and relevant local agencies	Natural Resources and Environment Department

