Chapter 11

Climate change Adaptation Policies in Viet Nam

from national perspective to local practices

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Abstract

Chapter 11 looks at various legislation, policies and programmes that have fostered climate change adaptation over the last two decades in Viet Nam. We aim to introduce fundamental guiding principles for adaptation policies, and address the achievements and limitations in their implementation. Many significant results have already been attained in strengthening resilience and enhancing the adaptive capacity of communities, economic sectors and ecosystems; proactively responding to natural disasters, reducing natural disaster risks, and damage due to climate change. However, several critical limitations in policy implementation need to be addressed. For example, the findings of our case studies in the North, the Centre and the Mekong Delta indicate a significant lack of technical and financial resources, capacity-building, and an integrated institutional scheme dedicated to climate change. Consequently, short-term reactive responses often override proactive and preventive strategies, while only a few actions address structural drivers of vulnerability. To advance the translation of adaptation policies into practice, we recommend the following actions: developing a system-based approach that integrates vulnerability and risk assessment as well as climatic and socio-economic uncertainty considerations into adaptation decision-making; adjusting adaptation policies to more sufficiently reflect both local context and the needs of vulnerable groups; mainstreaming adaptation into sectoral and local development planning; establishing an appropriate adaptation monitoring and evaluation system; promoting a holistic application of hard and soft adaptation measures; and strengthening the capacity of, and increasing financial and technical support for, all stakeholders.

Tóm tắt

Chương 11 tổng quan các luật, chính sách và chương trình khác nhau nhằm thúc đẩy thích ứng với biến đổi khí hậu ở Việt Nam trong hai thập kỷ qua. Chúng tôi đưa ra các nguyên tắc cơ bản mang tính định hướng đối với chính sách thích ứng và phân tích những thành tựu và hạn chế trong quá trình thực hiện các chính sách đó. Một số kết quả quan trọng đã đạt được trong tăng cường khả năng chống chịu và nâng cao năng lực thích ứng của cộng đồng, các thành phần kinh tế và hệ sinh thái; chủ động ứng phó với thiên tai, giảm thiểu rủi ro thiên tai và thiệt hại do biến đổi khí hậu. Tuy nhiên, vẫn còn tồn tại một số hạn chế trong quá trình thực thi chính sách cần được giải quyết. Ví dụ, kết quả từ nghiên cứu điển hình của chúng tôi ở miền Bắc, miền Trung và Đồng bằng sông Cửu Long chỉ ra rằng các định hướng chính sách quốc gia chỉ được thực hiện một phần do thiếu hụt đáng kể về nguồn lực kỹ thuật và tài chính, thiếu các hoạt động nâng cao năng lực và thiếu một khung thể chế tích hợp dành riêng cho biến đổi khí hậu. Do đó, các hành động có tính chất phản ứng ngắn hạn thường được ưu tiên thực hiện hơn các hành động mang tính chiến lược và chủ động phòng

ngừa. Rất ít hành động thích ứng ở cấp địa phương giải quyết được vấn đề cấu trúc của tính dễ bị tổn thương. Để thúc đẩy đưa các chính sách thích ứng vào thực tiễn, chúng tôi đề xuất một số hành động sau: áp dụng cách tiếp cận hệ thống tăng cường tích hợp các đánh giá về tính dễ bị tổn thương và rủi ro cũng như xem xét sự không chắc chắn về khí hậu và kinh tế xã hội vào quá trình ra quyết định thích ứng; điều chỉnh các chính sách thích ứng để phản ánh đầy đủ hơn bối cảnh địa phương và nhu cầu của các nhóm dễ bị tổn thương; lồng ghép thích ứng vào quy hoạch phát triển ngành và địa phương; thiết lập một hệ thống giám sát và đánh giá thích hợp đối với các hoạt động thích ứng; thúc đẩy áp dụng toàn diện các biện pháp thích ứng cứng và mềm; và tăng cường năng lực và tăng cường hỗ trợ tài chính và kỹ thuật cho tất cả các bên liên quan.

Résumé

Le chapitre 11 examine les diverses législations, politiques et programmes visant à favoriser l'adaptation au changement climatique au cours des deux dernières décennies au Viet Nam. Il introduit les principes de ces politiques et présente les principales réalisations ainsi que les limites dans leur mise en œuvre. Des résultats significatifs ont déjà été obtenus dans le renforcement de la résilience et l'amélioration des capacités d'adaptation des communautés, des secteurs économiques et des écosystèmes ainsi que dans la mise en place d'initiatives proactives visant à réduire les risques et les dommages liés aux aléas climatiques. Cependant, la mise en œuvre des politiques d'adaptation rencontre certaines difficultés majeures. Par exemple, les résultats de nos études de cas dans le Nord, le Centre et le delta du Mékong témoignent d'un manque important de ressources techniques et financières, de la faiblesse des actions de renforcement des capacités et de l'absence de dispositifs institutionnels dédiés au changement climatique. Il en résulte que les réponses à court terme pour faire face aux effets du changement climatique supplantent les initiatives proactives, les mesures préventives et les actions visant les facteurs structurels de vulnérabilité. Pour améliorer le mise en œuvre des politiques d'adaptation, nous recommandons les actions suivantes : développer une approche systémique qui intègre l'évaluation de la vulnérabilité et des risques, améliorer la prise en compte des incertitudes climatiques et socio-économiques; ajuster les politiques d'adaptation afin qu'elles correspondent davantage aux contextes locaux et aux besoins des groupes vulnérables ; intégrer l'adaptation dans les plans de développement sectoriel et locaux ; mettre en place un système de suivi et d'évaluation des programmes d'adaptation ; promouvoir une approche holistique des mesures d'adaptation; renforcer les capacités des agents en charge de l'adaptation et accroître le soutien financier et technique.

1. Adaptation policies in Viet Nam

1.1 National adaptation policies in Viet Nam

Over the last two decades, Viet Nam has enacted various legislation and plans to foster climate change adaptation (see Table 11.1). The submission of the Viet Nam Initial National Communication to the United Nations Framework Convention on climate change (UNFCCC) in 2003 was an important milestone, further accelerating climate actions in Viet Nam. A fundamental component of these documents is fostering climate change responses in line with the socio-economic development plans of Viet Nam. Since then, a significant number of important policies have been developed and approved. Some of the most important policies are:

- The National Target Program to Respond to Climate Change (NTPRCC) was first approved in 2008 and then updated in 2012 for the period up to 2015. In 2016 the Green Growth component was added to the 2016–2020 NTPRCC that became the National Target Program to Respond to Climate Change and Green Growth (NTPRCC-GG). The key adaptation-related tasks under these programs include: developing and updating climate change and Sea Level Rise scenarios (CC&SLR); developing, updating, and implementing national, sectorial, and provincial level action plans to respond to climate change; and building capacity and rising awareness about climate change responses.

- The National Strategy on climate change (NSCC) endorsed in 2011 by the Prime Minister is one of the most important adaptation policies, as it sets key principles, visions, and objectives to be followed in other policies. Key principles of the Strategy are promoting climate change adaptation and greenhouse gas mitigation through strengthening people's and natural systems' adaptability to climate change, and thus developing a low-carbon economy in order to protect and improve quality of life, guarantee national security and sustainable development in the context of global climate change, and proactively work with the international community in protecting the earth's climate system.

- The National Action Plan on climate change (NAPCC) was first approved in 2012 for the 2012–2020 period, and updated in 2020 for the 2021–2030 period to concretize actions to implement the strategic tasks defined in the NSCC;

- The National Plan for the Implementation of the Paris Agreement (PIPA) was approved in 2016 by the Vietnamese government to execute Viet Nam's commitments under the Paris Agreement. Adaptation is one of the five main components of the PIPA. Another important task of this plan is to establish and operate a M&E system (*i.e.* monitoring and evaluation – M&E) to monitor and evaluate adaptation efforts. This M&E system is expected to play a very important role in planning, tracking, and governing adaptation activities. Currently, the M&E system is under development;

- The Law on Environmental Protection (LEP) was approved in 2020 by the National Assembly of Viet Nam. The climate change adaptation stipulated in this law includes assessment of impacts, vulnerabilities, risks, losses and damage from climate change; implementation of adaptation activities; and the development of a M&E system for climate change adap-

[Table 11.1]

Matrix of climate change related policies

Level	Document	Adaptation Mitigation
National	Resolution	The Resolution No.24-NQ/TW of Viet Nam's Central Committee of the Communist Party of Viet Nam on proactively responding to climate change, strengthening natural resources management and environmental protection (2013) The Resolution No.134/2016/QH13 of the National Assembly on adjusting the national land-use master plan to 2020 and the land-use plan for the final period 2016–2020 (2016) The Resolution No.36-NQ/TW of the Conference No.8 of the Communist Party's Central Committee, Legislature XII on the Strategy for sustainable development of Viet Nam's marine economy until 2030 with a vision to 2045 (2018) The Resolution No.76/NQ-CP on natural disaster prevention and control (2018) Resolution No.120/NQ-CP of the Government on sustainable and climate-resilient development of the Mekong Delta (2017)
	Law	The Land Law (2013) The Law on Environmental Protection (2014 & 2020) The Law on Water Resources (2014) The Forestry Law (2017) The Law on Fisheries (2017) The Law on Planning (2017) The Law on Crop Production (2018) The Law on Animal Husbandry (2018) The Biodiversity Law (2018) The Law on Marine and Island Resources and Environment No.82/2015/QH13 (2018) The Law on Natural Disaster Prevention and Control (2013) The Law on Hydro-Meteorology (2015) The Law on Irrigation (2017)
	Decree	The Decree No.119/2016/ND-CP of the Government issuing several policies on the management, protection and sustainable development of coastal forests to respond to climate change (2016)
	Strategy	Decision No.2139/QD-TTg dated 2011 on the National Strategy on Climate Change Decision No.1939/QD-TTg dated 2012 on the National Green Growth Strategy
	Plan	National Action Plan on Climate Change (NAPCC) for the period 2012 to 2020 (2011) Plan for the Implementation of the Paris Agreement on Climate Change (PIPA) (2016) National Action Plan for the Implementation of 2030 Agenda for Sustainable Development (2017) Viet Nam's National Climate Change Adaptation Plan (NAP) (2020)
	Program	The National Target Program to Respond to Climate Change (Decision No.158/2008/QD-TTg dated 2008 and Decision No.1183/QD-TTg dated 2012 for the period 2012–2015, concerning the implementation of the Program); The Science and Technology Program for Climate Change Response for the period 2016–2020 (2016) Support Program in Response to Climate Change (SP-RCC) (Decision No.2044/QD-TTg dated 2017 for the period 2016-2020) The Target Program for Climate Change Response and Green Growth for the period 2016–2020 (Decision No.1670/QD-TTg dated 2017) The National Action Program REDD+ to 2030 (2017) The 2016-2020 Science and Technology Program for Natural Disaster Prevention and Control and Environmental Protection (2018) The Overall Program for Sustainable and Climate-Resilient Agriculture Development of the Mekong River Delta to 2030 with a Vision to 2045 (2020) Updated version of Nationally Determined Contribution (NDC) (2020)

tation activities. The law also stipulates the integration of climate change responses into strategies and plans.

The 2020 update of Viet Nam's Nationally Determined Contribution [VN's NDC, 2020] was submitted to the Secretariat of the UNFCCC in September 2020. To internalize commitments related to adaptation in the updated NDC 2020 and adjust for more suitable policies in the new development context of Viet Nam, Viet Nam has introduced three new policies on adaptation and response to climate change, namely the National Adaptation Plan for the 2021–2030 period, with a vision through to 2050 (NAP) (Decision No.1055/QD-TTg dated 20/7/2020), the post-2020 NSCC and the National Action Plan to Respond to Climate Change (NAPRCC) for the 2021–2030 period (draft versions of the NSCC and NAPRCC were available when writing this report; they are expected to be submitted to the Prime Minister by the end of 2021).

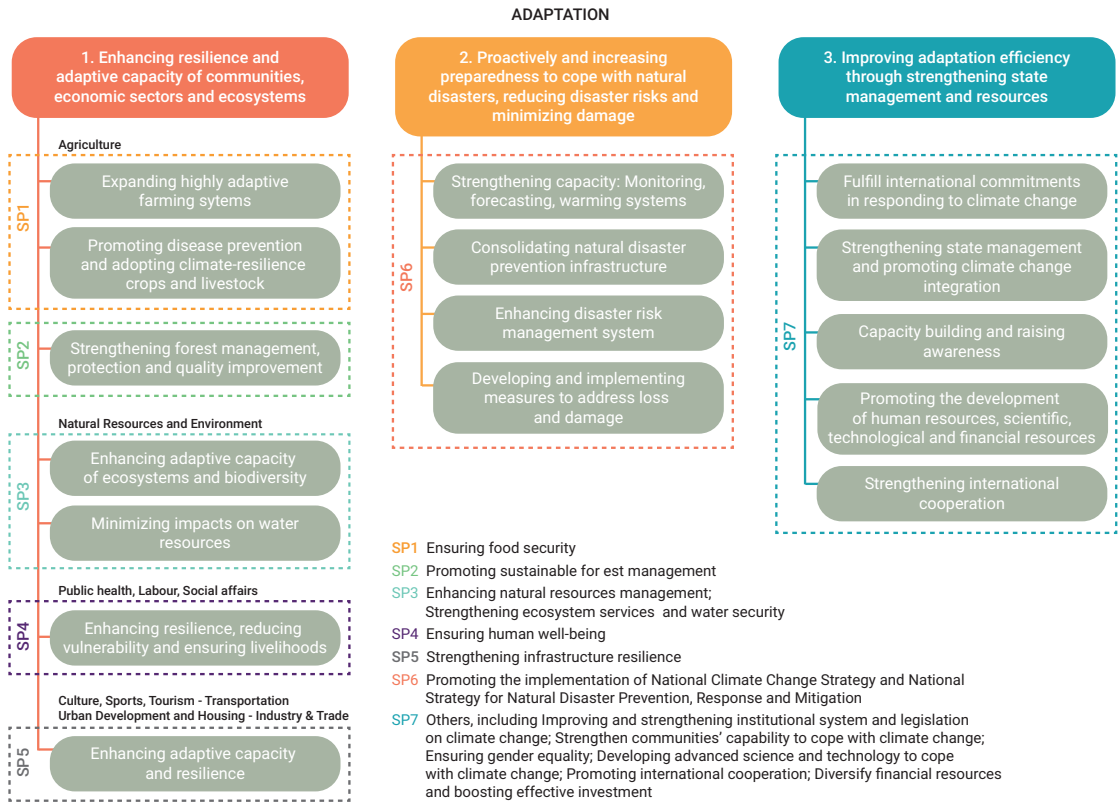
The NAP is the first national policy to focus solely on adaptation. The overall objective of this plan is to reduce vulnerability and risks to the impacts of climate change on communities, economic sectors, and ecosystems. The NAP explicitly requires the assessment of vulnerability and risk during adaptation planning processes. The plan also promotes the integration of climate change adaptation into development strategies and planning. The NAP's objectives are translated into three groups of actions, including (i) strengthening resilience and enhancing adaptive capacity; (ii) mitigating the risk and damage of climate change-related disasters and enhancing preparedness to respond to extreme weather and natural disasters; and (iii) strengthening national adaptive capacity through institutional improvement, capacity building, securing resources, promoting international cooperation, and implementing international obligations.

The Draft National Action Plan on Climate Change (NAPCC) for the period 2021–2030 gives specific directions for ministries, sectors, and localities to continue developing and implementing climate change adaptation actions, in line with the socio-economic development plan corresponding to their authorities. Implementing the NAPCC for 2021–2030 will also contribute to achieving the goals set out in Resolution No.24-NQ/TW, the National Climate Change Strategy, and the National Adaptation Plan, by consolidating and enhancing the achievements in response to climate change over the previous period. Key strategic priorities (SP) identified in the draft NAPCC are presented in Figure 11.1.

1.2 Regional, sectoral, and provincial level adaptation policies

In the light of national adaptation policies, ministries and provincial-level governments have developed specific adaptation policies at their respective levels. The two significant national adaptation policies that have been concretized to implement at the sectorial and provincial levels are the National Action Plan to Respond to Climate Change (NAPCC) and the National Plan for the implementation of the Paris Agreement (PIPA). In addition, there are two special adaptation-related policies, including Resolution No.120/NQ-CP dated 15/11/2017 of the central government on the sustainable development of the Mekong Delta adapting to climate change, and the national scheme on urban development responding to climate change.

[Figure 11.1]
Key strategic priorities in Viet Nam's adaptation policies



Source: based on MoNRE, 2020.

▸Following the NTPRCC and NAPCC, ministries and provincial level authorities developed their Action Plan to Respond to Climate Change (CAP). To date, these plans have been updated multiple times, according to guidelines provided by the Ministry of Natural Resources and Environment (MoNRE). Recently, ministries and provinces/cities have formulated their CAPs for the 2021–2030 period, with a vision through to 2050;

▸Following Decision No.2053/QD-TTg of the Prime Minister regarding the approval of the PIPA, provinces and ministries have developed their PIPAs up to 2030 based on the guidelines provided by MoNRE through the Document No.4126/BTNMT-BDKH dated in 2017. The main contents of the sectorial and provincial PIPAs are closely linked to the national PIPA;

▸Resolution No.120/NQ-CP on the sustainable development of the Mekong Delta adapting to climate change is the first adaptation policy that focuses on the regional level. This document sets out visions, strategic direction, overall solutions, and specific tasks for the future development of the Mekong Delta, with relation to climate change adaptation. From the adap-

tation perspective, Resolution 120 highlights some important principles, such as the need to promote nature-based solutions; to put people at the centre of development models; and to apply an integrated and holistic approach to socio-economic development, with a focus on inter-sectorial and inter-regional links;

▸The scheme on urban development responding to climate change is the most important adaptation policy to focus on the urban area in Viet Nam. This policy was first approved in 2013 for the period 2013–2020 (Decision No.2623/QD-TTg), and was recently extended for the 2021-2030 period (Decision No.438/QD-TTg). The main objectives of this policy are to integrate climate change into urban development policies, planning and investment, to ensure that Vietnamese cities have the capacity to respond effectively to climate change. The programme covers urban systems nationwide, but focuses on the provinces and cities most affected by climate change.

1.3 Adaptation and key principles defined in adaptation policies

One of the main objectives of this chapter is to examine how adaptation policies are implemented. In doing so, it is important to understand how adaptation is defined in existing policies. There are multiple definitions of adaptation, and multiple terms that are associated with the adaptation concept, such as resilience, vulnerability, and adaptive capacity.

According to the Intergovernmental Panel on Climate Change (IPCC), adaptation is defined as the process of adjustment to actual or expected climate change 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 change and its effects [IPCC, 2014]. This IPCC approach has been adopted in adaptation policies in Viet Nam.

In addition to this definition, key national adaptation policies also define important principles that need to be applied, such as: the need to apply an integrated and systems-based approach (NSCC, NTPRCC, NAP, Resolution No.120/NQ-CP, LEP, NAPCC); to take into account uncertainties (NAP, NAPCC); to apply proactive strategies (NSCC, NCAP, NAP, NAPCC); to address vulnerability and risk (PIPA, NAP, LEP, NAPCC); to mainstream adaptation into development planning and policies; to actively mobilize and engage all relevant stakeholders (NSCC, NACC, NAP, LEP, NAPCC); to promote multi-benefit actions, soft measures, and ecosystem-based and community-based adaptation measures (NAP, LEP, NAPCC); and to develop and implement a monitoring and evaluation system for climate change adaptation (LEP, PIPA, NAP, NAPCC).

These principles indicate the high quality of adaptation policies, which aim to promote integrated, holistic, and inclusive approaches, and account for the interrelationships between sectors and regions, short-term and long-term actions, and climate change uncertainties. Given the complexities of vulnerability and risk that Viet Nam is facing at temporal, spatial and sectorial scales, and the uncertainty associated with future climate change and future development, these principles may be considered to be highly appropriate (see Chapter 12). In the following sections, we will discuss how adaptation policies and the guiding principles mentioned above are implemented and applied in practice, in different sectors and at provincial and lower levels.

1.4 Adaptation policy implementation: achievements and limitations

Achievements

For decades, the Government of Viet Nam has established various programmes, policies, and legislations to adapt to climate change, as well as to take advantage of climate change opportunities to achieve the country's sustainable development goals. Subsequently, many significant results were attained in strengthening resilience and enhancing the adaptive capacity of communities, economic sectors and ecosystems, in proactively responding to natural disasters, and in reducing natural disaster risks and damage due to climate change [MoNRE, 2020]. There is a long list of results and achievements to be mentioned. Some examples are presented below for indicative purpose.

- All 63 provinces and most national ministries have completed and started to implement their Action Plan to Respond to Climate Change. The majority of provinces have also developed their Plan for the implementation of the Paris Agreement;

- Climate change has been integrated into important policies, such as the national socio-economic development plan of the 2016–2020 period and the 2017 Law on Planning;

- The Department of climate change was established at the national level while a division for hydro-meteorology and climate change was organized in 18 provinces. In some provinces and cities such as Ho Chi Minh, Can Tho, Ben Tre, and Binh Dinh, a climate change office was established and is fully dedicated to climate change response and coordination;

- Out of 65 major programmes/projects identified in the 2012–2020 National Action Plan on Climate Change, 26 focusing specifically on adaptation were implemented;

- Many science and technology programs, with a large number of research projects, have been implemented;

- Awareness-raising and capacity-building activities with a focus on community-based disaster risk management have been implemented in 1,900 communes out of 6,000 communes frequently affected by climate-related hazards;

- The effective implementation of adaptation and disaster risk reduction policies has led to major results. For instance:
  - The average number of dead and missing people per year in the last 10 years was reduced by 38% compared to the average of the 10 previous years, even though typhoons are becoming more destructive;
  - Property damage in the period 2008–2017 (688 million USD/year) decreased by 29% compared to the period 1998-2007 (967 million USD/year) [MoNRE, 2020];
  - Several new varieties and production processes — which can increase productivity by 10% for high economic value crops such as rice, maize, and soybean — have been tried out in the provinces of Lao Cai, Yen Bai, Son La and Dien Bien. Fifteen new rice varieties have been successfully bred in the Red River Delta and the Mekong Delta [DCC, 2020];
  - A number of other important outcomes have been achieved in food security (see Chapter 4), water security (see Chapter 9), energy security (see Chapter 5), environmental protection, job creation, along with other socio-economic benefits [MoNRE, 2020].

– Several successful community level adaptation models have also been developed and replicated, such as flood-resistant housing in many provinces in the Central region, and a small-scale seawater desalination system and domestic wastewater treatment in Ca Mau province [DCC, 2020].

Limitations

Although important progress has been made, there are still a number of limitations in the implementation of adaptation policies, and in translating the guiding principles defined in these documents into practice. Some important limitations are discussed below.

▸Guiding integration among adaptation policies: Although almost all adaptation policies are in line with each other, several policies address the same issue at the same level and the same period, for example, PIPA, NAP and NAPCC. Official guidelines for integrating these policies are highly desirable to avoid overlapping implementation and the risk of double-counting in evaluation;

▸Integrated and system-based approach in addressing vulnerability and risk: Although the country has made good progress, there are still important gaps in disaster risk reduction and adaptation planning. For example, climate change response and disaster planning practices are still fragmented and sector-oriented. In addition, there is a limited number of effective and practical assessment and decision-support tools to assess vulnerability and risk in a holistic and systemic manner; identify root causes of vulnerability and risk; integrate assessment results into planning processes; and store data and keep track of how vulnerability and risk changes over time[1]. This may be the reason for the widespread lack of vulnerability and risk assessment in adaptation and disaster planning, although it recently became a legal requirement (see the NAP and the 2018 guidelines developed by the Viet Nam Disaster Management Authority on developing sectorial and local level disaster risk prevention and control plan). As a result, there is often a vague or poor connection between adaptation actions identified in provincial level CAPs, and vulnerability and risk [Nam *et al.*, 2014];

▸Consideration of uncertainties: According to NDC 2020, the system of legal documents on climate change response is still not consistent, and should be reviewed and adjusted. For example, adaptation policies require the consideration of future climate change uncertainty, and the integration of climate change into development including infrastructure planning. On the other hand, building technical infrastructure such as roads, drainage systems, dykes, and embankments needs to follow existing technical standards, which are often managed by ministries other than MoNRE and were developed without properly taking climate change uncertainty into account. As a result, infrastructure is often designed based on fixed standards and historical data, and provides little or no room for redundancy, flexibility and for accommodating unexpected situations. For example, according to a recent study by the World Bank, much of the Viet Nam's road network (over 400,000 km) was not built to withstand extreme climatic hazard scenarios [Oh *et al.*, 2019]. Given the non-stationary nature of future climate,

1. Several practical tools have been developed and applied internationally and locally in Viet Nam such as the City Climate Resilience Framework (by the 100 Resilient Cities Program), City Climate Resilience Index, and the Community Flood Resilience Assessment Framework by the Zurich Alliance on Flood Resilience. These frameworks and tools have been applied at the project level but can provide good lessons and examples if Viet Nam plans to develop its own tools.

this infrastructure is eventually likely to lead to substantial losses, when extreme events become more frequent and stronger than the protection level;

▸Mainstreaming adaptation into sectorial and local development planning has been identified as a legal requirement in many national and provincial level polices. Many studies have indicated that the cost of investing in adaptation by taking climatic risk into account is much smaller than the damage caused by climate-related hazards [Chinowsky *et al.*, 2015; Hill *et al.*, 2019]. However progress has been slow, and many sectors and localities are reluctant to integrate climate change response into development plans for sectors, provinces and cities. In most cases, adaptation mainstreaming stays at the policy (and not the implementation) level. This limitation is caused by multiple factors such as:

– Lack of staff with sufficient capacity and knowledge about climate change adaptation at different specialized ministries and departments;

– Lack of practical and concrete tools and guidelines for mainstreaming. According to NDC (2020), guidance for integrating climate change issues into national and sectorial strategies and plans, and into plans for socio-economic development, is still inadequate. Some guidelines such as Circular No.05/2016/TT-KHDT of the Ministry of Planning and Investment have been developed. However, according to provincial level officials, available instructions are often too general and abstract[2];

– Lack of financial rules and mechanisms to support the implementation of adaptation actions/tasks integrated within sectorial plans and policies (see Chapter 12);

– According to a recent study by the Asian Development Bank, many technical standards in Viet Nam are often out-dated and overlook future climate risk, focussing on protecting targeted infrastructure rather than the resilience of services provided and of entire systems [ADB, 2020]. This technical gap is also an important barrier to integrating climate change into infrastructure development planning;

▸Dominance of hard measures and lack of attention to soft measures: efforts to respond to climate related hazards often focus on short-term emergency actions and recovery, with limited attention paid to long-term prevention and proactive response activities. In addition, there has been an important focus on hard structural infrastructure measures such as concrete dykes and embankments. Soft measures that may be more cost-effective such as integrated and risk-informed urban planning and green infrastructures have not received enough attention [PIPA, Phuong *et al.*, 2018; World Bank, 2015];

▸Limited implementation of adaptation policies at the sectorial and local level: Although most national ministries and provinces have developed and even updated their CAPs, the implementation of these plans has been very limited. Many provinces such as Dien Bien, Bac Kan, Ninh Thuan failed to effectively implement their CAPs [Bac Kan PPC, 2015; Dien Bien PPC, 2015; Ninh Thuan PPC, 2015]. These plans do not exist at the district and commune level, where there are no agencies or even staff responsible for climate change response. In addition to the financial gap that has often been used to justify this situation (see Chapter 12), there may be many other reasons, such as a lack of capacity and personnel (see Human capital gap below), the

2. Interviews with officials from DPI and DONRE in several provinces/cities such as Can Tho, Binh Dinh, and Bac Kan.

appropriateness of the approach used to develop these plans, or the lack of an effective mechanism for climate change coordination and response. Therefore, to improve the implementation quality of sectorial and provincial level CAPs, it is extremely important to carefully investigate the factors that contribute to the poor implementation of these plans, and identify ways to address these factors;

▸Human capital gap: Although many capacity building activities have been organized in the last 10 years, the knowledge and awareness of local staff in charge of climate change response is still limited. Many of them are not professionally trained in climate change adaptation, and often focus on the adverse physical effects of climate change [Nguyen *et al.*, 2017] without fully acknowledging the bigger picture of adaptation planning, the complexity underlying vulnerability and risk, and the uncertainty associated with future climate change. Since the capacity of government staff plays an important role in the quality of policy implementation, it is urgent to expand the scope and improve the quality of capacity building activities by taking the guiding principles defined in national policies into account;

▸Lack of monitoring and evaluation system (M&E): a comprehensive and practical M&E system (see Box 11.1) plays an important role in planning, tracking, and governing adaptation activities. Developing and implementing this system is also one of Viet Nam's commitments under the Paris Agreement, but this system has not been put in place. Therefore, establishing a monitoring and evaluation (M&E) system for adaptation is a mandatory task, and a prominent solution to enhance Viet Nam's post-2020 adaptation policies [DCC, 2020];

▸Financial gap: the insufficient financial resources available for climate change response are one of the key reasons for the limited implementation of adaptation policies (see Chapter 12). Among other factors, this problem may be attributed to the lack of incentive and effective mechanisms to engage with and mobilize resources from the private sector, and the limited use of existing resources allocated to socio-economic and sectorial development for adaptation, due to the poor integration of climate change into development policies and sectorial planning;

▸Lack of stakeholder participation in adaptation planning and implementation is another critical gap. For example, consultation activities organized during the development of provincial CAPs often remain at a superficial level. According to our interviews with local officials in several provinces such as Lao Cai, Can Tho, and Binh Dinh, the local climate change action plans were mainly prepared by consulting firms from elsewhere, and consultations with technical departments (other than DONRE) was often of poor quality. Moreover, the engagement of local communities or even commune-level government is even more limited. Lack of commitments and of an appropriate system to safeguard consultation processes is a significant barrier to effective participation. For instance, there is currently no mechanism to verify and report how and to what extent the comments and contributions of consulted actors have been taken into consideration. In addition, many local agencies (other than DONRE) overlook the importance of climate change, and thus often provide only general comments, or send junior staff to consultation events.

[Box 11.1]

Introduction to the adaptation monitoring and evaluation (M&E) approach in Viet Nam

Monitoring and Evaluation (M&E) systems for adaptation are indispensable and powerful tools that can enhance stakeholders' understanding of climate change risks and vulnerabilities: by conducting periodic climate risk assessments, by reviewing whether or not adaptive interventions are achieving their goals, by taking stock of the lessons learned from actions taken to inform and strengthen adaptation planning and future implementation [Spearman & McGray, 2011]. So far, climate change impacts have gradually become more pronounced as shown in this report throughout chapters 3, 4, 5 and 6. As the number of national adaptation activities and strategies increases in Viet Nam, establishing a monitoring and evaluation system has become an urgent requirement for the country to ensure the efficiency and appropriate allocation of capital to implement climate change adaptation actions.

Regarding the post-2020 adaptation policy in Viet Nam (section 1.3), a proper M&E framework for Vietnamese adaptation should ensure that it provides useful information with regard to how enhanced adaptive capacity and resilience are achieved, the degree of improvement in disaster risk management and damage reduction, and the extent of contributions to national development goals. A report on the development of an M&E system for adaptation in Viet Nam indicates that Tracking Adaptation and Measuring Development (TAMD) can be considered a suitable M&E framework for the adaptation process in Viet Nam [Tran *et al.*, 2021].

TAMD is a twin-track framework developed by IIED to support evaluating adaptation success, based on how widely and how well countries or institutions manage climate risks (Track 1), and how successful adaptation interventions are in reducing climate vulnerability (Track 2) [Brooks and Fisher, 2014]. The principal M&E approaches in TAMD include [Figure 11.2]:

– M&E Track 1 (top-down) - evaluating 'upstream' climate risk management (CRM) interventions: improving climate risk management (CRM) at the national level leads to better CRM at the sector/field level, thereby enhancing resilience, and building the adaptive capacity of institutional systems, the environment, the economy,

– M&E Track 2 (bottom-up) - evaluating 'downstream' vulnerability and development outcomes: a theory of change is proposed by Rai, Smith, and Brooks (2019) to describe the logical and reciprocal relationships between local adaptation outcomes and how they contribute to overall development goals. Accordingly, the assessment framework can be defined along the path of the impact of adaptation activities, starting from those activities to outputs, outcomes and their contribution to national strategic priorities [Figure 11.1].

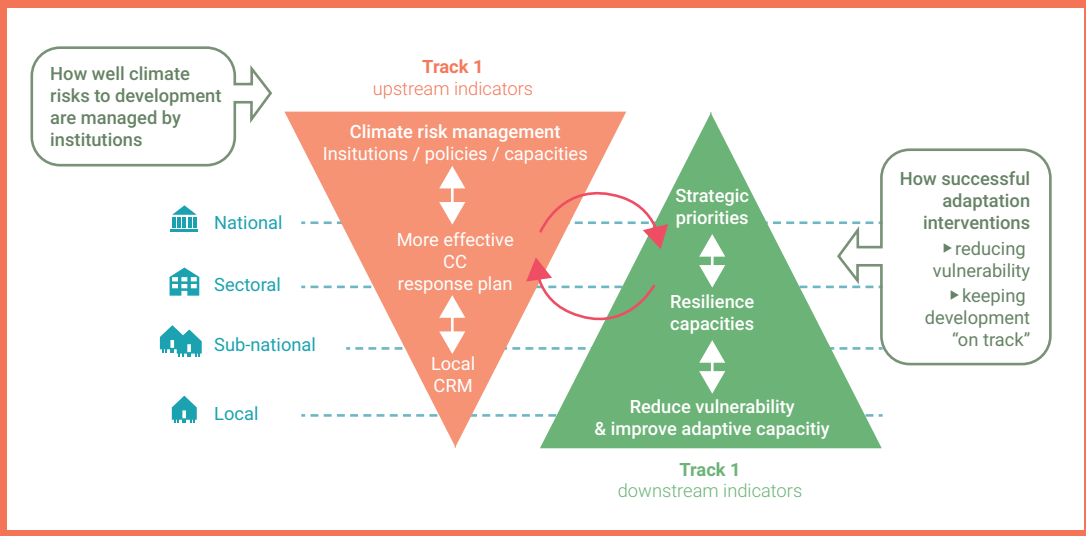


Figure 11.2 Evaluation orientation of the TAMD (based on Brooks *et al.*, 2013; Brooks & Fisher, 2014).

Four types of indicators need to be assessed as follows [Rai, Smith, and Brooks 2019]:
– Process indicators: assess how a country's institutions and governments are managing climate risks, particularly institutional processes and governance mechanisms that directly address climate risks, or influence how people and systems respond to them;
– Output indicators: measure the quantity and efficiency of goods and services delivered by an adaptation intervention;
– Outcome indicators: assess how the actions of a country's institutions and governments influence the vulnerability, resilience and adaptive capacity of people and systems on the ground;
– Long-term development impact indicators: measure the success of adaptation in the longer term, in particular regarding the extent to which it helps secure development goals, and maintains and improves human and ecological well-being, in the face of climate change that would otherwise undermine both.

Accordingly, several adaptation M&E criteria sets for Viet Nam are being researched and considered based on two approaches [Tran *et al.*, 2021]: 1) Top-down approach, including (i) Criteria set for evaluating climate change adaptation activities at the national level; (ii) Criteria set for evaluating the effectiveness of national-level adaptation for strengthening adaptive capacity at the provincial level; 2) Bottom-up approach includes: (i) Criteria set for evaluating the results of climate change adaptation activities at the provincial level; (ii) Criteria set for evaluating the effectiveness of provincial-level activities in achieving the national adaptation goal; and (iii) Criteria set for evaluating the effectiveness of project-level climate change adaptation. Specific indicators can be synthesized and selected for Viet Nam from the Set of indicators to evaluate the effectiveness of climate change adaptation in Viet Nam [Huynh and Ngo, 2018] and GIZ's Repository of Adaptation Indicators [Hammill *et al.*, 2014]. These indicators are broadly divided into four categories, including (i) Climate parameters - information about observed climatic conditions; (ii) Climate impacts - Information about the observed impacts of climate variability and change on socio-ecological systems; (iii) Adaptation action (implementation) - Information to help track the implementation of adaptation strategies; and (iv) Adaptation results (outcome) - Information to help monitor and evaluate the outcomes of adaptation strategies.

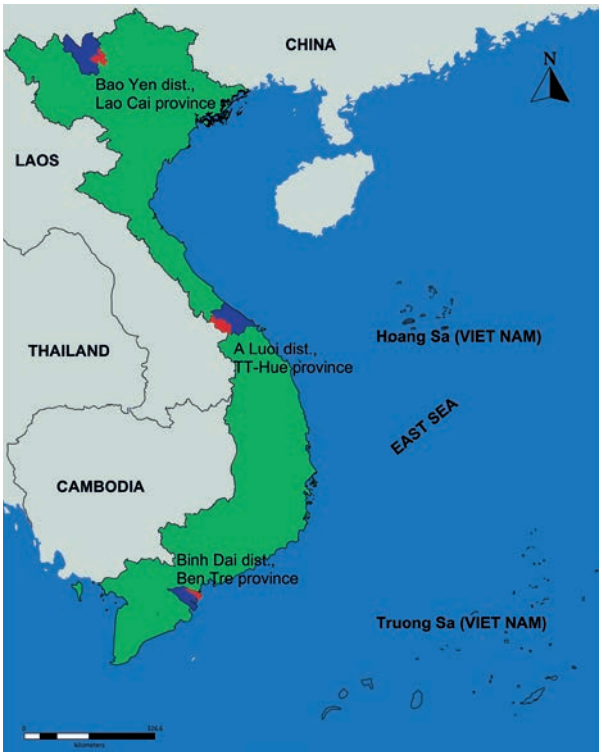
A national M&E system for the NAP is in preparation, and will be submitted to the Prime Minister by October 2021. This system is the first national M&E system for Vietnamese adaptation that moves towards a more holistic and comprehensive upcoming M&E system. The Ministry of Natural Resources and Environment (MoNRE) will be the focal point of this system.

2. From policy to local response to climate-related hazards: insight from the ground

While climate change adaptation policies are set by national or provincial authorities, the implementation of adaptation actions at the local level (commune, household and individual) is strongly context specific. In this section, we will examine how local practices of adaptation, in particular climate-related hazard responses, reflect national and provincial level policies and their guiding principles (see Section 1.3), as well as the lessons and insights that may inform policy improvement.

Our findings indicate that adaptation developed in localities is indeed shaped by many drivers that can reinforce, divert or contradict the principles and objectives of national adaptation policies. Moreover, many of these adaptation actions are not directly driven by adaptation policies, but occur "spontaneously" after a climate-related stress, and through iterative and *ad hoc* daily adjustments framed by

[Figure 11.3]
Location of case study areas



interaction between individuals, households, local authorities, private sector actors and market forces. In these conditions, it seems important to provide contextual understanding and grounded insights into the various local-level adaptation practices, to illuminate how different factors can interact and affect the capacity of a community, households and individuals to cope and adapt. It is noteworthy that while it is difficult to prove that the climatic hazards faced by inhabitants are a direct result of climate change, those kinds of climatic stresses are typical of climate change-induced events, and might be exacerbated with climate change. Therefore, we assume that the study of local responses contributes to possible adaptations to future climate change.

Our analysis is supported by data and evidence collected from several case studies in rural areas in the Northern Mountainous Region (Lao Cai), the Central Region (Thua Thien-Hue) and the Mekong Delta (Ben Tre)[3] [Figure 11.3]. Based on a socio-anthropological perspective that grants a central place to micro-localized in-depth ethnographic fieldwork, the data collection combined immersion in local life (agricultural activities, ceremonies, official meetings, festivities, etc.), direct observation of practices, micro-quantitative census, local

3. The villages where we conducted our case studies are all inhabited by Kinh people, which is the main ethnic group in Viet Nam, but also, in the northern case, by Tày and Dao people, and, in the central case, by Pa Cô, Tà Ôi, Cơ Tu (Katu) people, who are so-called "ethnic minorities", even if they are the most numerous where they live.

official and private written sources, informal talks, and semi-structured interviews.

2.1 Description of the climatic hazard context at three study sites

The historic flash flood in Lao Cai

The first case study takes place in a commune located in Viet Nam's northern uplands (Lao Cai Province). The commune consists of 16 hamlets mainly inhabited by Tay (97%) with some Kinh and Dao. Villagers combine small-scale semi-subsistence farming (wet rice, husbandry, aquaculture, garden, fruit trees, non-timber forest product) along with cash crops on hillsides (corn, cassava, agroforestry, tea, etc.) and off-farm activities (trading, laborers, masons, factory worker, etc.).

In November 2018, an unprecedented flash flood combined with a landslide devastated the commune. The flood affected 704 households and 222 houses, and destroyed many shops, roads and bridges [Figure 11.4], some sections of the irrigation system, w electric system and the water supply system, as well as gardens (20 ha), rice fields (61 ha), crops (corn, trees, cassava) on the hillsides (88 ha), and fishponds (14 ha). The economic damage was

[Figure 11.4] **Bridge destroyed by flash flood in November 2018**
Bao Yen district, Lao Cai
Photo credit: ©Phan Thi Kim Tam

[Figure 11.5] **Landslide threaten house**
A Luoi district, Thua Thien-Hue
Photo credit: ©Nguyen Cong Thao

estimated at over VND 20 billion (870 000 $) by the commune[4]. This event has been locally classified as "the historic flood".

Historic flood in Thua Thien Hue

The second case study takes place in a commune located in the centre of Viet Nam (Thua Thien-Hue Province), near the Laos border. The commune consists of 11 villages mainly inhabited by Ta Oi and Co Tu people (90%), with some Kinh and Pa Co households. Farming is the dominant economic activity in this commune. Wet rice, cassava and acacia are the three most popular crops, while buffalo, oxen, pigs and fish ponds also bring important cash for households. Most of the forest area in the commune is classified as Protection Forest, and put under management of the district ranger forces.

While local people have experienced many climate-related hazards in the past, they consider 2020 as the most "unusual" year of the last 30 years. This is mainly because of the series of consecutive tropical low-pressure systems, and extreme typhoon and flooding events, among which the historic floods in October were considered the most dangerous. According to the local community, they were unprepared, and their responses were generally passive and reactive.

4. According to the official data on damage from the People's Committee of the commune and the "Situation socio-economic report of the commune for 2019".

The historic flooding event occurred in 2020, while extreme cold in early 2021 caused serious damages to the local community [Figure 11.5]. For example, 44% (108 ha) of the commune's wet rice area was partly or completely damaged by landslide or land erosion triggered by flooding. About 25% of households in the commune lost part of their acacia tree areas. Though no houses were completely destroyed, about 300 households reported that their houses were damaged. Moreover, due to the heavy rain, severe flooding and unusual cold, many chickens and cattle died. It should be emphasized that pigs, cows and buffaloes are very important social, symbolic and economic assets for the local people.

Climatic hazards in Ben Tre

The third case study takes place in Binh Dai district in the Mekong Delta of Viet Nam. This district promotes agricultural, industrial and fishery extension activities, and applies production models focused on safety, efficiency, and sustainability. Cropping coconut, vegetables, fruit trees, shrimp, and fish farming account for a substantial proportion of the local agriculture sector. In the aquaculture sector, shrimp farming largely dominates in Binh Dai. There is a trend for shrimp farming development in the intermediate zone of the district, although coconut cultivation practices remain predominant [Figure 11.6].

[Figure 11.6] **Shrimps and coconut production: a market-oriented agriculture**
Binh Dai district, Ben Tre
Photo credit: ©Olivier Tessier

Salinization is of the main hazards facing Binh Dai district in general, and Long Hoa commune in particular. In the last decade, saline intrusion has become more severe and frequent, thus causing serious impacts on the local community (see Chapter 9). For example, a 20-day saline intrusion period in 2016 led to significant drops in rice production. Farmers and local authorities blame this event for the drastic decline in the rice area, from some 100 hectares to 3 or 4 hectares after 2016. The event in 2020 lasted even longer (from February to April) and was more destructive. The 2020 salinization affected 90% of households in Long Hoa commune, caused a 30-50% drop in coconut production along with smaller nuts, and a 50 to 70% decrease in fruit production.

In addition, shortages of freshwater supply due to salinization has become a growing concern in Ben Tre. Serious freshwater shortages for drinking and other domestic usages were recorded, especially during the salinity intrusion period in 2020. As a result, many households had to buy freshwater (but not drinking) from private suppliers at very high prices (*i.e.*, 200 to 250,000 VN/m^3, or 12 to 15 times more expensive than in Ho Chi Minh city).

The area has also been affected by landslides and bank erosion, which are caused by rising sea levels and decreasing river flows (see detail in Chapter 7). This process is the result of complex dynamics that are secondarily linked to climate change in the short term [Chapter 9]. In Ben Tre, the coastline is eroded over a total length of about 19.4 km, including Binh Dai district. In some communes, severe landslides have a length of about 3,000 m, and penetrate deep into the mainland about 30 m each year, destroying people's productive land, along with coastal protection and special-use forests.

2.2 Local responses to climatic-related hazards: policy insight from the ground

Short-term responses versus long-term proactive and preventive strategies

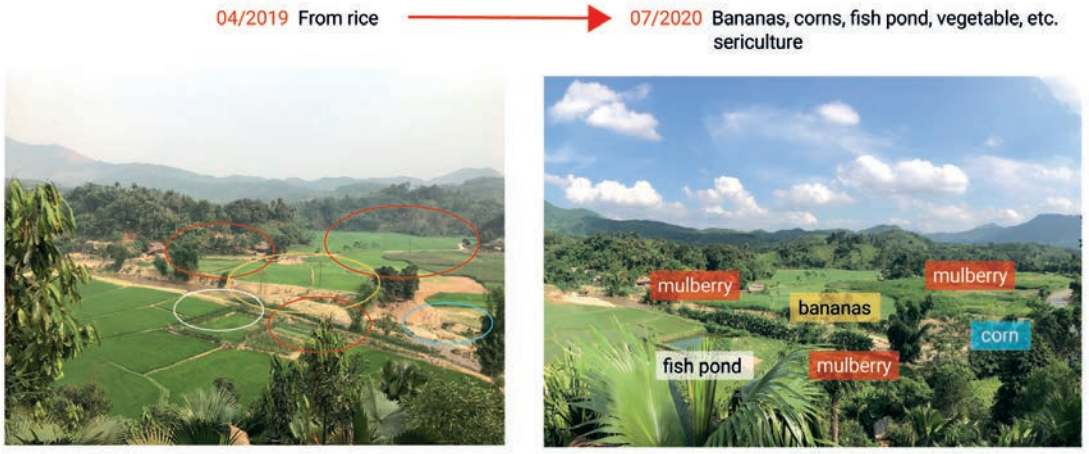
The national and provincial adaptation policies promote both short- and long-term proactive and preventive strategies [Figure 11.1]. However, evidence from our study sites indicates that actions taken at the community level in response to climate-related hazards often focus on immediate responses, emergencies and short-term recovery. For example, in the case study in northern uplands area, after the 2018 flash flood, the local government was very active in mobilizing the support and contribution of multiple actors in activities such as cleaning and clearing of communal and private areas. Moreover, the electric network and domestic water supply system was rapidly restored, and the province provided funds to hire machines to clear destroyed housing and agricultural areas in the centre of the commune.

At the household level, people also took action to repair and improve their houses [Figure 11.7], or to move to a safer location. Farmers whose rice fields could not be restored shifted their agricultural practices from rice cultivation to cash crops such as corn, cassava, banana trees, or to planting mulberry and raising swarm (sericulture) [Figure 11.8]. However, little has been done to invest in longer-term preventive solutions, such as improving the limited flash flood early warning system, strengthening coordination and information sharing between communes — in particular between upstream and downstream and between sectors — and improving the resilience of critical infrastructure such as bridges and irrigation systems [Figure 11.1 - SP6 & SP7].

[Figure 11.7]
Housing adaptation: improving and rebuilding new concrete houses

Bao Yen district, Lao Cai.
Photo credit: ©Phan Thi Kim Tam

[Figure 11.8]
Post flood cropping changes



Bao Yen district, Lao Cai.
Photo credit: ©Phan Thi Kim Tam

[Figure 11.9] **New wooden house building in upper location after flood**
A Luoi district, Thua Thien-Hue
Photo credit: ©Nguyen Cong Thao

In the second case study in Central Viet Nam, the popular strategies used to deal with typhoon and flooding include: placing sand bags on the roofs of houses (popular among poor households), moving houses to safer locations [Figure 11.9], or raising the house floor to a higher level. However, local people admit that most of these measures were only reactive, temporary and insufficient to protect them from big floods or severe typhoons. In addition, in the upland area, replacement of cassava with acacia has been the most popular practice for 10 years. However, it has not helped them to alleviate poverty and climate hazard vulnerability, as the land is degrading and becoming more barren, and it is likely that this crop will not be viable in the future.

Concerning livestock, an important change consists of increasing pig to the detriment of buffalo and cow. It is reported that the pig population has increased by about 10%, while buffalo has decreased by about 60% in the whole commune over the last 5 years. Unstable weather conditions are among the key causes of this transition, with a decrease in grazing land in relation to land allocation, and an increase in cultivated areas to the detriment to common land. Findings from interviews indicate that there has not been much signifi-

cant adaptation in livestock raising techniques. Cages were not yet popular, and the free wandering method was still practiced. However, in recent years, instead of the free wandering method, people started assigning one family member to collect grass for cattle or to take care of cattle during the day. Food reservation for rainy and the cold days is more popular than before. Finally, farmers who have bigger herds and large upland field areas built cages for their buffaloes or cows in the upland fields.

Our study results also suggest that most actions taken at the household level in this commune are spontaneous adaptation. Support from external actors, including local government, on long-term strategic solutions and measures to address root causes of problems like forest protection and reforestation seems to be limited [Figure 11.1 - SP2]. Moreover, investments also need to take other short- and long-term measures into account, such as building concrete dyke systems alongside streams and concrete walls in hill-bottom areas, where there is high risk of landslide [Figure 11.1 - SP6]; enhancing irrigation systems, introducing new rice varieties with shorter life cycles and higher resistance to floods; and supporting post-disaster cultivation recovery [Figure 11.1 - SP1]; reforming transport infrastructure; applying new technologies, and using sustainable materials with high resistance to climate change for construction [Figure 11.1 - SP5].

[Figure 11.10] **Using plastic socks to store fresh water at the bottom of ditches and furrows**
Photo credit: ©Olivier Tessier

[Figure 11.11] **Individual reservoir to stock rainwater**
Binh Dai district, Ben Tre
Photo credit: ©Olivier Tessier

To respond to drought and salinization, local communities in our third case study (Ben Tre) have applied a number of short-term measures such as: switching from three to two rice seasons per year, or even to one season followed by a second season combining rice and shrimp farming; planting new drought/salt-resistant rice and fruit tree varieties; adopting new agriculture water-saving techniques (using water-fern to preserve soil moisture, applying drip irrigation systems, storing water in plastic socks placed at the bottom of ditches and furrows, see Figure 11.10), improving small-scale storage capacity for domestic water use (rainwater storage tanks from 10 m^3 to 25 m^3 per household, see Figure 11.11), increasing the storage capacity of fresh water in ponds and diversifying water sources to include rainwater storage and water transportation from surrounding areas.

Despite the significant efforts made, local people are still struggling with the impact of salinization. Interviewees in the study area explained that many measures applied in agricultural activities are often ineffective, and agricultural productivity has still decreased [Chapter 4].

In this context, the government has provided significant support to the local communities

[Figure 11.12] **Dam sluice gate on the Ba Lai River to block saltwater intrusion**
Binh Dai district, Ben Tre
Photo credit: ©Olivier Tessier

by investing in hard infrastructure projects such as dykes, dams, and reservoirs, increasing the capacity of water treatment plants and extending and densifying freshwater supply networks. Dam sluice gates (removable gates), which block the rise of saltwater downstream and build up freshwater reserves upstream, is the type of structure which the province focuses on [Figure 11.12]. After constructing the dam on the Ba Lai River, several structures of this type are under construction and should be completed during the 2021–2023 period, notably with the completion of the Ben Tre Province Water Management Project (JICA3).

Although some positive results have been observed, water shortage for agriculture and domestic usages remains a major concern in the region. In addition, it was also found that some infrastructure such as the Ba Lai dam built to prevent saline intrusion in Ba Lai River have increased salinization in other local rivers, and exacerbated the salinization and freshwater shortage risks in the downstream areas of the dam.

Our findings in Ben Tre indicate that existing hard infrastructure is not enough to fully address the drought and saline intrusion challenge. Many other solutions are required

but as yet missing, to contribute to long-term benefits and to address drivers of vulnerability: they include developing and applying an integrated surface and ground water management system at the river basin scale, integrated farming systems and water-efficient irrigation models, investing in agronomic research programmes to develop more saline-resistant plants [Figure 11.1 - SP1 & SP6], restoring and developing protection and mangrove forests [Figure 11.1 - SP2], and developing and applying a salinization monitoring and warning system [Figure 11.1 - SP6]. In addition, a system-based and holistic approach is urgently required in designing adaptation measures.

Traditional knowledge vs uncertainty

Our study in Thua Thien - Hue exposed an important issue related to weather forecasting and climate uncertainty raised by local farmers. About 20 years ago, local elders could guess the coming climate trends through their observation of their surroundings. For instance, if it rains a lot at the beginning of the year, severe floods will come in the end of the year; if it is cloudy, the trees stand still, and there is no wind, these are signals of coming heavy rain; if the wind from the west (Lao wind) is strong during May — June, floods will come in October — November. It is reported that traditional knowledge in weather forecasting now no longer works well, due to the changing climate.

Unstable climate conditions have led to several inappropriate cultivation decisions by farmers who often rely on their past experience and on the historic trend of disasters. As a result, although an alert about the historic hurricane and flood in 2020 was sent out several days before the event, local people did not think the situation would be that serious, and no precautions were taken. The evidence from our case study in Thua Thien - Hue suggests the need for local communities and policy-makers to consider the change in the frequency and intensity of climatic hazards and the unpredictability of future events, and prepare for unexpected situations while designing adaptation interventions at the community level. Improving the weather forecasting and warning system can provide reliable inputs for the decision-making process [Figure 11.1 - SP6]. It is also important to invest in raising local awareness on capacity-building for local government and communities, to better deal with climate uncertainty [Figure 11.1 - SP7].

The importance of social network and social capital in local adaptation

Results of our case studies indicate the very significant role that social capital plays in advancing disaster responses at the community level. In our case studies in Northern and Central Viet Nam, families affected by the historic floods received support from their relatives, friends, and other community members in a number of ways, such as evacuating to safer places, getting food, agricultural input access via credit, cleaning rice fields, rebuilding houses and getting financial capital to restore their livelihoods. In Binh Dai district, there are currently 66 cooperative groups in the fields of agriculture and fisheries, which can foster collective action to connect to the market and develop risk-sharing mechanisms.

The role of social capital in adaptation and disaster risk reduction is most visible in case study in northern uplands. Our research indicates that local communities get significant financial and material support during and after disasters from their interpersonal relationships involving kinship, lineage, neighbour-

hood and friends in various forms, such as monetary gifts, loans with or without interest, credit purchase, informal rotative savings and credit groups, and labour exchange practices. As in many place in Viet Nam, these networks of personal relationships provide people with access to a wide range of resources needed to implement their responses to shocks in general and climate-related risks in particular [Fischer *et. al*., 2011; McElwee, 2010; Delisle & Turner, 2016; Son & Kingsbury, 2020].

The above findings have some policy implications. First, they suggest that social capital should be better recognized in existing policies. Particular attention should be paid to not undermining the web of local solidarities and interpersonal obligations, and more effort is required to promote and strengthen both formal and informal networks and collaborative mechanisms at the community level. Second, if these local forms of support are necessary, especially to recover after the shock, they are not sufficient to foster long-term adaptation, they are not efficient in the case of covariant shocks, and they cannot endure repeated extreme events. Finally, the fact that local people have to rely mainly on their personal networks and relationships indicates the lack of financial capacity of community actors, and of support from the government. Therefore, more adaptation resources should be allocated at this level, where people often suffer the most.

Mobilization of contributions from multiple actors

As indicated in the 2020 NDC report, state resources can only meet about 30% of the financial needs for climate change response. Therefore, national adaptation policies call for the engagement and contribution of other stakeholders, including the private sector and societal actors. Evidence collected from our study sites indicates an active contribution of various actors to community disaster response and climate change adaptation. For example, apart from state resources, affected households in our case study in northern uplands received support from other actors such as "charitable donations" from individuals, public or private organizations, material and immaterial resources from interpersonal relationship networks (social capital), personal bank loans, and emergency supplies such as food and water. Similarly, a local church in Ben Tre installed a desalination-treatment system to provide free fresh water to local communities. A private donor from Ho Chi Minh City supported the cost of this system, while the church financed the installation and operation costs. Local branches of VietBank also helped poor households to build individual tanks (2 to 4 m^3) to store water.

It is also important to note that support mobilized from non-government actors involves not only financial and material resources (such as money, land, equipment), but also immaterial forms (such as labour exchange between farmers, technical support, training, information). In addition, some resources were mobilized to contribute to disaster risk reduction and adaptation objectives, but not classified under the climate change funding label. For example, as part of an economy-focused effort, a private sector service cooperative helped local communities in our study site in northern uplands — with the support of district authorities – to improve and diversify their income by shifting from rice cultivation to mulberry plantation and silkworm rearing. This project has proven effective, not only in terms of generating higher income, but also in coping with future climate events, especially flood and drought.

Our findings suggest the need to apply an integrated and inter-sectorial approach to climate change adaptation in general and adaptation finance in particular, to improve the mobilization of resources from various sectors, and to design more holistic policies to better support the integration of adaptation, and socio-economic development and environmental protection objectives [Figure 11.1 - SP7].

Finally, we found that most resources mobilized at the community level have been mainly used for emergency response during disaster and short-term recovery. In addition, the mobilization of resources for adaptation is often spontaneous, and lacks effective structure and organization. The limited coordination of emergency support during disaster periods, such as in the case of the 2020 flood in some areas of the Central region of Viet Nam, is a pertinent example. Therefore, it is important to develop new incentives and coordination mechanisms to promote the more active contribution of public and private actors, not only for short-term response but also for longer-term actions [Figure 11.1 - SP6].

The importance of local context in policy implementation to support vulnerable groups

Supporting vulnerable groups is one of the top priorities identified in national and provincial adaptation policy. Although significant support has been provided to these groups there are still some limitations. Following extreme flooding events, the most affected households — as well as the poor and vulnerable households — are allowed to borrow money at low rates from the Viet Nam Bank for Social Policies, for recovery purposes such as repairing or rebuilding houses, or improving or changing their livelihood activities. For instance, in our study site in Central Viet Nam, people can borrow up to VND 50 million for 2 years at an annual interest rate of 5%. In the case study in northern uplands, after the flood, households whose houses had been swept away could borrow VND 100 million (USD 4300) for 10 years at a low interest rate (0,65%/month) to rebuilt new improved houses or relocate to a safer place. In addition, they received substantial state support ranging from VND 20 million (USD 870) to VND 40 million (USD 1,700). Households whose houses had not been destroyed but were considered at risk also received support (VND 20 million) to move their houses. According to local stakeholders the national criteria established to define who is eligible for state support and low-interest loans from the Bank for Social Policy do not reflect the needs of vulnerable groups. Only 30 percent of seriously-affected households received significant support from the government. However, others who are also highly vulnerable and suffered serious damage as a result of the 2018 historic flood received very little or nothing, because their houses were not classified as “washed-away” and therefore, according to official criteria, they were not eligible for the support.

More generally, with the exception of this specific post-disaster support focussed on very few households, borrowing money from banks is not easy for everyone, since people need to provide guarantees in the form of owned assets. For the poorest and most vulnerable, who often have low and unstable incomes, it is very difficult to meet the bank’s requirements. They often have recourse to informal credit, sometimes with high interest rates. As a result, this group faces significant challenges in developing sustainable adaptive strategies to prepare for and recover from disasters, and thus remains vulnerable, or even becomes more so. In our case study in Central

region, there are 172 households of this kind. These families have had to stay in vulnerable areas after the 2020 floods, and will likely experience severe damage from landslides, flooding and typhoons in the coming years.

Finally, our case studies highlight that debt within the formal and informal sectors remains the dominant solution for recovering from the shock and developing adapting strategy. But it can strengthen inequality as a result of unequal access to credit, and can lead to over-indebtedness for the most vulnerable. Under these conditions, the State must define appropriate policies to facilitate access to low-interest-rate credit for vulnerable households, to support the informal credit sector by limiting usurious practices, and thus avoid spirals of over-indebtedness. For the most vulnerable populations, the introduction of free or subsidized insurance schemes for a set of risks — ranging from natural to economic — may be a relevant solution, alongside capacity building, job creation and awareness-raising.

The findings presented above suggest that existing adaptation-related policies should be improved by taking the local context and the specific needs and characteristics of intended beneficiaries into account. Box 11.1 represents how the theory of change approach can facilitate identifying proper adaptation interventions based on local context towards expected outcomes, and how the M&E system for adaptation enables and promotes their achievement. New special policies may also need to be developed to provide adequate support to the poorest and most vulnerable groups.

3. Conclusion

Climate change adaptation is one of the top priorities of policy-making in Viet Nam. The Government of Viet Nam has enacted various legislation, policies, programmes and plans to foster climate change adaptation over the last two decades. Regarding post-2020 adaptation policy in Viet Nam, adaptation interventions are classified into three categories corresponding to three main adaptation targets, including: (i) strengthening resilience and enhancing adaptive capacity; (ii) mitigating risk and damage from climate change-related disasters, and enhancing preparedness to respond to extreme weather and natural disasters; and (iii) strengthening national adaptive capacity through institutional improvement, capacity-building, securing resources, promoting international cooperation, and implementing international obligations. The fundamental requirement for adaptation in this period is that the overall goals and orientation of adaptation interventions should promote integrated, holistic and inclusive approaches to adaptation, while being consistent with sectorial development priorities and the country's sustainable development goals.

As we have shown at the national and provincial levels, although important progress has been made, there are still a number of barriers to translating the guiding principles into practices. Several key issues need to be considered, including official guidelines for integrating adaptation policies; the need for adaptation and disaster planning to be based on vulnerability and risk assessment; consideration of uncertainties; mainstreaming adaptation into sectorial and local development planning; paying more attention to soft measures; en-

hancing the implementation of adaptation policies at the sectorial and local levels; strengthening capacity-building; enacting a monitoring and evaluation system; employing incentives and effective mechanisms to engage with and mobilize resources from the private sector; improving stakeholder participation in adaptation planning and implementation.

Our evidence-based insights into local post-disaster responses and adaptations illustrate the strong capacity of local communities to cope with natural hazards, but also show that people respond more than they adapt: short-term reactive adaptation often overrides proactive and preventive strategies. We argue that in a context of uncertainty over future climatic events, this ability to mobilize various endogenous and exogenous resources to restore and implement everyday pragmatic adjustments, and to develop multiple options (*e.g.* multiple sources of income) to cope with shocks and stresses, reveals a high degree of flexibility at the local level that can foster adaptive capacity and reinforce resilience. But it is not sufficient to face the impacts of climate change. More preventive and planned adaptation via a system-based and holistic approach is still required to implement the core principles and objectives of adaptation policies.

In this vein, the findings from our case studies indicate that national adaptation policies have partially addressed needs in the local context, but that the lack of technical and financial resources and capacity-building, along with the absence of an integrated institutional scheme dedicated to climate change issues, remain crucial challenges. Furthermore, strengthening weather forecasts and early warning systems, and raising awareness on adaptation is still needed to improve preventive and proactive actions. Moreover, very few actions address the structural drivers of vulnerability, although it is well known that climate change vulnerability and adaptive capacity is not only a question of climate risk or exposure reduction, but is also rooted in socio-cultural-economic-institutional systems [Adger *et al.*, 2005; Klein *et al.*, 2007, McElwee, 2010, 2017; Adaptation Knowledge Platform, 2013]. Unless these factors are taken into consideration in a meaningful way, adaptation objectives as designated in policy are unlikely to be achieved. Practical achievements also demonstrate that social capital, collective actions, the mobilization of contributions from multiple actors (community, NGOs, private sector, state organization, civil society), as well as local knowledge can play an essential role in successfully implementing adaptation policies that take each local and specific context into consideration, alongside the core principles of adaptation and resilience policies.

Last but not least, existing adaptation policies should be more local-specific, and focus on the needs and characteristics of their intended beneficiaries. Consequently, employing the theory of change approach to identify adaptation interventions based on local context towards expected outcomes, and enacting an M&E system that can enable and promote adaptation performance and effectiveness, are highly recommended.

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Climate change in Viet Nam
Impacts and adaptation

A COP26 assessment report
of the GEMMES Viet Nam project

This COP26 Report of the GEMMES Viet Nam project was prepared by a team led by Senior Economist Etienne Espagne [AFD], in close cooperation with the General Director of the Department of Climate Change of the Ministry of Natural Resources and the Environment The Cuong Tang [MoNRE].

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The team would like to thank the reviewers of the different chapters of the report: Edward Anthony [CEREGE]; Tan Sinh Bach [NISTPASS]; Van Kham Duong [IMHEN]; Jean-Baptiste Fressoz [CNRS]; Thanh Long Giang [NEU]; Marc Goichot [WWF Lead Freshwater Asia Pacific]; Cong Hoa Ho [CIEM]; Anh Tuan Hoang [USSH]; Tuan Anh Luong [De Montfort University]; Anh Tuan Nguyen [IE]; Duc Khuong Nguyen [IPAG Business School, Paris]; Minh Nguyen [CSIRO]; Thanh Chung Nguyen [NIHE]; Thanh Cong Nguyen [DCC, MoNRE]; The Chinh Nguyen [IMHEN]; Thi Dieu Trinh Nguyen [MPI]; Tu Anh Nguyen [Central Party's Economic Commission]; Van Cu Pham [UQAM]; Van Tan Phan [VNU University of Science]; Alex Smajgl [MRFI]; Thanh Nga Tran [DCC, MoNRE]; Thuc Tran [Vietnam Association of Meteorology and Hydrology]; Thomas Vallée [French Embassy in Phnom Penh]; Tat Thang Vo [UEH]. They helped the team improve a lot the clarity and scientific value of the results, as well as the policy relevance of the recommendations. All remaining errors are the responsibility of the team.

The team would also like to thank the following colleagues for their guidance during the preparation of the Report: Cécile Aubert [TSE]; Emmanuelle Augeraud-Véron [GRETHA]; Robert Boyer [Institut des Amériques]; Jean-Louis Brillet [consultant]; Dinh Tuan Bui [MOH]; Quang Tuan Bui [VASS]; The Anh Dao [VASS]; Nicolas De Laubier Longuet Marx [Columbia University]; Antoine Godin [AFD]; Viet Ngu Hoang [QUT]; Thi Phuong Linh Le [IREEDS]; Thi Phuong Mai Le [NIHE]; Van Cuong Le [Paris School of Economics]; Guilherme Magacho [AFD]; Sébastien Marchand [CERDI]; Jacques Mazier [Paris 13, CEPN]; Florent Mc Isaac [AFD]; Nicolas Meisel [AFD]; Son Nghiem [Griffith University]; Nhat Anh Nguyen [TSE]; Thang Nguyen [VASS]; Tuan Nguyen [IREEDS]; Tuan Anh Nguyen [VNU Hanoi]; Van Huy Nguyen [HN Medical University]; Ngoc Duy Nong [CSIRO]; Lan Huong Pham [ex-CIEM]; Luis Reyes [Kedge Business School]; Arnaud Reynaud [TSE]; Cong Thang Tran [IPSARD]; Thi Thuong Vu [IREEDS]; Devrim Yilmaz [AFD]. The team benefited a lot from these lively discussions in seminars and webinars, as well as more technical collaborations.

We also benefited from the technical advice of Hoang Mai Pham, Director General of Foreign Economic Relations Department at the Ministry of Planning and Investment. Finally, Most Venerable Thich Duc Thien, Vice President and General Secretary of the Vietnam Buddhist Sangha provided early support in the project and in its diffusion towards the general public.

The Report was edited by Marianne Smolska and proofread by Etienne Espagne. Marianne Smolska was also the principal graphic designer. The team would also like to thank Nicholas Le Quesne, who managed the English editing of the chapters and summaries. Elodie Martinez and Charlotte Le Layo offered guidance, and support on communication and dissemination.

The team is grateful to former AFD chief economist Gaël Giraud, who contributed to the kick-off meeting of the GEMMES Viet Nam project in Hanoï in March 2018, to former director of the department of economic analysis and policy dialogue Vincent Caupin for his support throughout the beginning of the project, to current director Hélène Djoufelkit for her trust in the scientific dynamics of the team and her technical support at all critical moments, and to executive director of innovation, research and knowledge Thomas Mélonio. Serge Perrin provided instrumental support in the policy diffusion of the report at COP26 and throughout the project funding by Facility 2050.

The AFD agency in Hanoï was instrumental in the process that led to this report, especially in the difficult COVID times. Special thanks go to Fabrice Richy, director of the agency (2017–2021), Virginie Bleitrach, deputy director of the agency (2017–2021), Huong-Hue Nguyen, project manager, and Maylis Garcia, international volunteer in Hanoï (2019–2021).

The IRD Representative Office in Vietnam played a key role in coordinating and supporting the research teams that contributed to this report. Special thanks go to representative of IRD in Viet Nam and Philippines Alexis Drogoul, who supported this very fruitful collaboration between AFD and IRD from the onset. Thi Linh Ha Nguyen managed the printing and played a virtuoso administrative coordination role throughout the preparation of the report. Thi Cam Van Tran, chief accountant, Ha Linh Nguyen, human resources manager, Phuong Anh Nguyen, communication officer, and Jeanne Cottenceau, scientific cooperation officer, particularly contributed to IRD support.

Finally, the team apologizes to any individuals or organizations that contributed to this Report but were inadvertently omitted from these acknowledgments.

Le groupe AFD contribue à mettre en œuvre la politique de la France en matière de développement et de solidarité internationale. Composé de l'Agence française de développement (AFD), en charge du financement du secteur public et des ONG, de la recherche et de la formation sur le développement durable, de sa filiale Proparco, dédiée au financement du secteur privé, et bientôt d'Expertise France, agence de coopération technique, le Groupe finance, accompagne et accélère les transitions vers un monde plus juste et résilient.

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Please cite the work as follows:

Espagne E. (ed.), T. Ngo-Duc, M-H. Nguyen, E. Pannier, M-N. Woillez, A. Drogoul, T. P. L. Huynh, T. T. Le, T. T. H. Nguyen, T. T. Nguyen, T. A. Nguyen, F. Thomas, C. Q. Truong, Q. T. Vo, C. T. Vu. 2021. Climate change in Viet Nam; Impacts and adaptation. A COP26 assessment report of the GEMMES Viet Nam project. Paris. Agence Française de Développement.