Chapter 11

Guidelines for Policy and Decision Makers and Other Key Players on Adaptation Roadmaps

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CHAPTER 11

Guidelines for Policy and Decision Makers and Other Key Players on Adaptation Roadmaps

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PURPOSE

These policy guidelines have been developed to inform policymakers and key players on the distributional impacts of disasters and climate change, to support them in developing adaptation roadmaps for incorporation into national and local development plans, from the perspective of food security and resilience.

Two research studies by the Economic Research Institute for ASEAN and East Asia—'Reducing the Vulnerability of Global Value Chains' and 'Distributional Effects of Disasters and Climate Change on Food Security'—demonstrated new knowledge on risk-based approaches to building resilient economic systems and mainstreaming adaptation processes in sectoral planning. The present guidelines for adaptation roadmaps are based on the findings of these two studies, and were developed using the experience gained and operational knowledge shared by government officials during the policy dialogues held at various stages of these studies. The guidelines are intended to help Association of Southeast Asian Nations (ASEAN) governments and other relevant stakeholders implement policies, plans, and operational procedures that result in integrating adaptation to climate variability and disaster risks into national and local development planning, decision making, and operations as an integral and sustainable part of the development process.

I Introduction

Basic Principles of Disaster Risk Management and Adaptation Roadmaps

These guidelines focus on the mainstreaming of disaster risk and adaptation concerns, rather than adaptation *per se*. Outlining some basic principles for adaptation roadmaps can provide a useful foundation for considering the mainstreaming process.

(i) Adaptation to disaster risks and climate change is, in large part, a continuous, dynamic process that reduces the exposure of the production system.
(ii) Adaptation must reflect both recurrent historical disaster events and new risks associated with climate change.
(iii) Exploring and undertaking actions to adapt to current disasters and climate extremes as well as variability is useful, both in dealing with today's problems, and as an essential step toward building long-term resilience to and withstanding pending changes in the climate.
(iv) Many disaster and climate change response strategies contribute positively to the attainment of the Sustainable Development Goals, sound environmental management, and wise resource use; they are also appropriate responses to climate variability and other present-day and emerging stresses on social, cultural, agricultural, industrial, economic, and environmental service systems.
(v) Effective management of climate-related risks prevents precious resources from being squandered on disaster recovery and rehabilitation.
(vi) While many disaster risks and climate-related losses are manifested locally, measures to alleviate them have important national and international dimensions.
(vii) If adaptation is reactive instead of anticipatory, the range of response options is likely to be narrower and adaptation may well prove more expensive, socially disruptive, and environmentally unsustainable.
(viii) The life expectancies of many development plans and projects currently under consideration require due consideration to be given to future disaster risks and changing climate conditions.
(ix) It is easier to enhance the ability of ecosystems to cope with disasters and climate change if they are healthy and not already stressed and degraded.
(x) Adaptation requires the enhancement of institutional capacity, development of expertise, and building of knowledge. All of these take time.

(xi) People will, through their own resourcefulness or out of necessity, adapt to disasters and climate change based on their understanding and assessment of the anticipated or observed effects, and on the perceived options for and benefits of response. Such adaptations will be adequate, effective, and satisfactory in many cases; and insufficient in others.

(xii) When such adaptation is not satisfactory or successful, such as under certain circumstances, an external entity, such as a central or local government, may need to facilitate the adaptation process to ensure that obstacles, barriers, and inefficiencies are addressed appropriately.

The Meaning of Adaptation Roadmaps and Mainstreaming of Disaster Risks

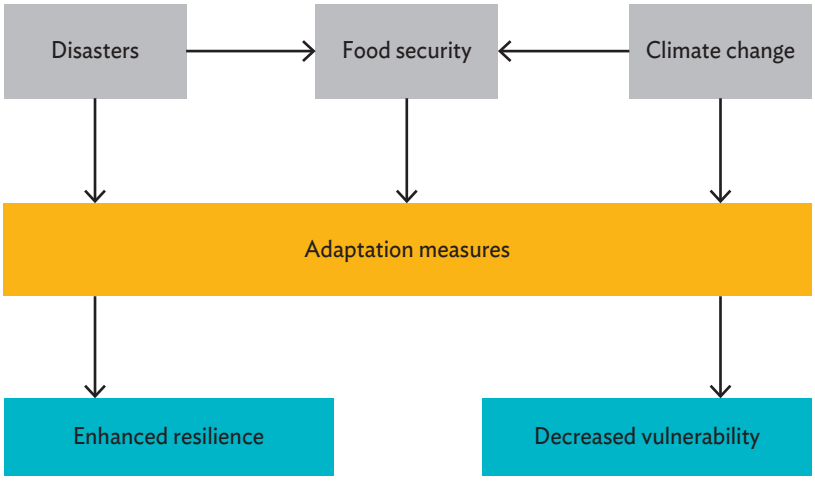
In the context of addressing climate change and disaster-related issues, the term 'adaptation roadmap' is used to describe the integration of policies and measures to address disaster risk and climate change in new and ongoing policies, plans, and actions. Constructed over a period of time, these roadmaps aim to enhance the effectiveness, efficiency, and longevity of initiatives directed at reducing disaster risks all while contributing to resilient economic development.

Mainstreaming or integrating disaster risks into sectoral policies such as agricultural development, food security, and health care also endeavours to address the complex tensions between economic policies aimed at immediate issues, and aspects of disaster risk reduction (DRR) and climate policy aimed at longer term concerns. These tensions often become most apparent when choices have to be made about the disbursement of limited government funds, such as a choice between supporting industrial development, education, and health care programmes on the one hand, and funding DRR and climate change adaptation (CCA) initiatives on the other. Indeed, mainstreaming is largely about reducing such tensions and conflicts, and avoiding the need to make choices by identifying synergistic, win-win situations. Thus, mainstreaming focuses on 'no regrets' adaptation measures that are consistent with sound environmental management and wise resource use, and are thus appropriate responses to natural hazards and climate variability, including extreme events. Such measures are beneficial and cost effective, even if no climate change occurs.

Reasons to Mainstream Adaptation

Even in the near future, climate change and disasters are likely to impose untenable social, environmental, and economic costs. Most of the region is already experiencing disruptive conditions consistent with many of the anticipated adverse consequences of climate change, including extensive coastal erosion, drought, flooding and associated landslides, coral bleaching, and higher sea levels. The risks associated with the full spectrum of disasters, from extreme events to the consequences of long-term changes in the climate, should be managed holistically as an integral part of national development planning and management (see Figure 1).

Figure 1: Optimal Response to Disaster and Climate Risks



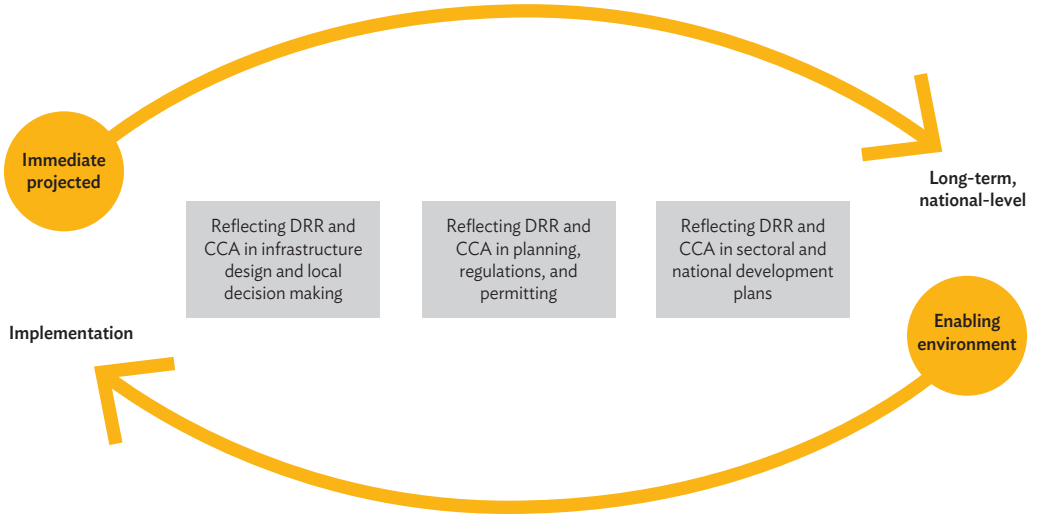
Source: Authors.

Disaster resilience, food security, and CCA planning could also be achieved through a combination of measures. By combining separate plans or legal frameworks from disaster resilience planning, food security planning, and CCA planning, it is possible to establish national frameworks that are more than just the sum of all three separate plans or legal frameworks. The aim is to decrease vulnerabilities and increase resilience to all three threats simultaneously. Vulnerabilities vary due to environmental properties, risk exposure, landscape features, population pressures, and the educational background of

the concerned people, among other factors. Resilience is the ability to cope with threats and relates to the endogenous power of people from within the region. This varies widely based on their wealth or disposable income, and their ability to organise relief from within the region. Economic considerations are key to reduce costs and avoid duplications by independent teams working on separate plans.

Most countries already have policies and plans to manage financial, human health, biosecurity, agricultural, transport sector, and energy supply risks. Climate-induced disasters and climate change and variability should be included in the national risk management portfolio. National and state development plans and sector plans should include disaster risk management strategies and CCA measures to ensure that risks are reduced to acceptable levels. These measures and the related strategies will help strengthen decision-making processes by requiring that specific programmes and projects include plans and measures to manage risks associated with extreme events and with climate change and variability. The overall goal should be to manage, holistically and as an integral part of national development planning, the risks associated with the full spectrum of weather, climate, and oceanic hazards, from extreme events to the consequences of long-term climate change (see Figure 2).

Figure 2: Linkages Between Longer Term Policies and Short-Term Projects



CCA = climate change adaptation, DRR = disaster risk reduction.
Source: Authors.

Referring to Figure 2, it is important to consider interacted nature and planning between national and local levels, which is often influenced by regional level coordinated action at the ASEAN region. Therefore, the planning should include immediate or short-term measures and decision making at the local level, and long-term policies at the national level. The declared interests of food security, DRR, and CCA can be formulated as territorial or sectoral plans or regulations of agriculture, the food industry, retailers, or consumers.

The 'scaling issue', that is, selecting a local or regional area of concern, is essential to judge whether an issue poses an immediate threat to local people, or is indicative of a long-term regional problem. Although remote, sparsely populated locations in particular can be seen as unimportant for regional decision making, non-reactions on a local scale are likely to grow into a larger regional problem later on. Therefore, it is best to solve local challenges immediately to achieve greater resilience at the regional level. If all ASEAN countries were to do so, the ASEAN region could achieve a combination of high disaster resilience, effective climate protection, and optimal food security. Thus, the aims expressed in international frameworks like the Sustainable Development Goals 2030 (United Nations [UN], 2015a), the Paris Accord (UN Framework Convention on Climate Change, 2015), or the Sendai Framework for Action (UN, 2015b) can be addressed simultaneously, thus contributing further to overall sustainability, peace, and economic stability.

Practical Components of Adaptation Roadmaps

Adaptation roadmaps reach many stakeholders at the practical, applied level. There are two main practical components to the development of an adaptation roadmap: (i) creating and strengthening an enabling environment for adaptation; and (ii) integrating adaptation planning and implementation into new and existing development policies, plans, and actions.

An 'enabling environment' for adaptation roadmaps comprises the systems and capabilities that foster the adaptation process, including innovations in information generation and communication; the revitalisation of traditional practices; the application of human knowledge and skills, policies, financing, legislation, and regulations; markets; and decision-support tools. These provide the context within which infrastructure projects and related industrial initiatives occur, and ensures that they are effectively implemented.

Figure 3: Multiple Dimensions of Adapting to Disaster Risks and Climate Variability

CCA = climate change adaptation, DRR = disaster risk reduction.
Source: Authors.

The multiple dimensions of the enabling environment are outlined in the following guidelines (see Figure 3):

(i) support human and institutional capacity building;
(ii) empower weaker stakeholders in particular, and give them a voice in the mainstreaming process;
(iii) find available and affordable funding or financing for benign actions;
(iv) collect a toolkit with relevant and applicable standards, codes, and methodologies;
(v) provide needs-driven and final output-related information;
(vi) allocate rights, responsibilities, and benefits equitably;
(vii) provide functional and affordable technologies;
(viii) allocate public funds under favourable macroeconomic conditions; and
(ix) stipulate a robust and responsive legal regime.

Longer term interventions at the national and subnational levels, often with support from the international community, are needed to create and strengthen an enabling environment.

II Guidelines Relating to the Principles Underpinning Adaptation Roadmaps

This section provides 20 itemised considerations for policymakers and key players to develop adaptation roadmaps for incorporation into national and local development plans. The guidelines encompass three elements: scope, time, and interest. First, the ASEAN regional adaptation plan should ideally cover each country's national development plan, which in turn covers local adaptation plans. This may allow for more specific measures to counter disaster threats and climate risks. Second, a timeline needs to be determined to target and maximise the implementation benefits. Lastly, the guidelines focus on enhancing the resilience of food security systems to disaster risks and climate change impacts.

Guideline 1: Document the relevant major risks to the economy and society resulting from environmental issues, disaster risks, and climate variability and change characterising these in terms of the damage that they are expected to cause, as well as the associated economic costs and social consequences.

Guideline 2: Organise and strengthen institutions in ways that:

(i) enhance communication among disaster and climate risk assessors, adaptation policymakers, and other stakeholders, including citizens;
(ii) reduce the likelihood of conflict and duplication of efforts when managing disaster and climate-related risks;
(iii) lessen the chances of mistrust and misunderstanding between decision and policymakers and other stakeholders in adaptation activities; and
(iv) overall, help to provide consistent, defensible, and useful advice to decision and policymakers with respect to adaptation roadmap priorities and practices.

Guideline 3: Wherever possible and practical, make use of existing data and information, and information management systems. While this may require additional initial efforts to source and harmonise dispersed and disparate sets of information, it is likely to strengthen existing information management systems instead of marginalising them.

Guideline 4: Enhance and employ relevant and experienced in-country expertise in the technical and policy dimensions of adaptation to climate change. Seek international cooperation and regional approaches wherever required.

Guideline 5: Enhance the enabling environment for adaptation roadmaps when legislation and regulations that facilitate CCA and DRR are introduced and strengthened, and when the compliance monitoring and enforcement capabilities of relevant regulatory agencies are improved.

Guideline 6: Wherever possible and practical, make use of existing decision-support tools and regulatory instruments to guide selection and facilitate the implementation of adaptation measures (Box 1). This is likely to strengthen existing tools and regulations, rather than weakening them through confusion and inadequate enforcement.

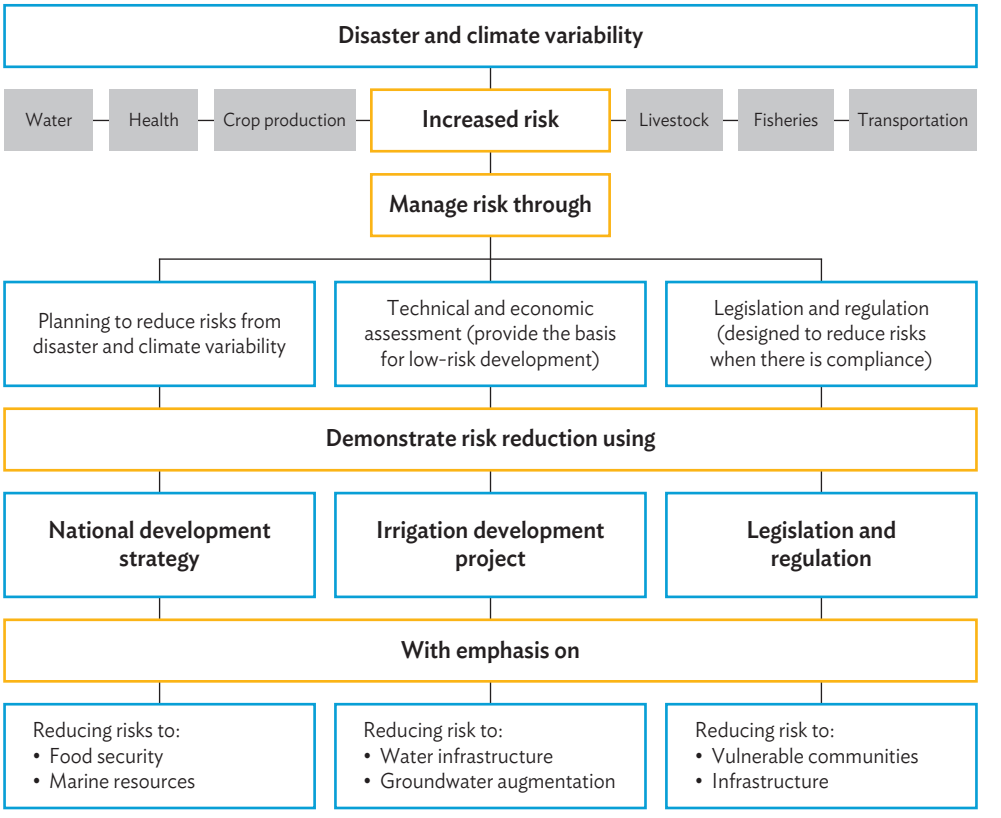
Box 1: Existing Decision-Support Tools

- Strategic environmental assessment
- Environmental impact assessment
- 'Strengths, weakness, opportunities, threats' analysis
- 'Clients, actors, Weltanschauung, owners, and environment' approach (Checkland, 1981)
- Scenario analysis ('Scenario Analysis in Risk Management') (Hassani, 2016)
- Local Agenda 21 and ecological restructuring approaches (Lyle, 1994; ICLEI, 1995)
- Building codes

Guideline 7: Identify motivations that drive various stakeholders to engage in the adaptation process, and replicate these motivations in other players through education, training, and other initiatives.

Guideline 8: Build the willingness and ability of communities to adapt continuously to new circumstances and challenges, and to realise this increased potential. High levels of awareness, motivation, and empowerment within the public and private sectors and in civil society will help ensure that people, communities, and wider societies are able to adapt continuously to new circumstances and challenges. Incorporating customary knowledge related to disaster management and active community involvement in adaptation roadmaps will create a chain of actions towards resilience and sustainability that is embedded in local culture. This requires a long-term approach to developing and delivering comprehensive and targeted awareness-raising and educational programmes.

Figure 4: A Decision Support Tool – Risk Assessment Framework



Source: Authors.

Guideline 9: Encourage banks and other lending institutions to finance adaptation and resilience activities. Help reduce barriers by promoting institutions, arrangements, and mechanisms that can provide innovative financing, including microfinance, crop insurance, green finance, secured loans, leasing arrangements, and public–private partnerships, thereby allowing adaptation to proceed without government intervention.

Guideline 10: Decisions as to when and how to adapt to disaster risks and climate change variability should be based on credible, comparable, and objective information. Ideally, the measurements and assessments required to provide this information will be made using internationally recognised, but locally adapted, methodologies and tools, thereby helping to ensure comparability among data collected by different assessors.

Guideline 11: Adaptation activities should be based on cooperation to bring about desired changes, using bottom-up and top-down approaches. This calls for enduring partnerships at all stages of the adaptation process, ensuring the active and equitable participation of private and public stakeholders, including business, legal, financial, and other stakeholders.

Guideline 12: Transfer and use of inadequate, unsustainable, or unsafe technologies for adaptation must be avoided. Technology recipients should be able to identify and select technologies that are appropriate to their actual needs, circumstances, and capacities and are classed as 'sustainable technologies'—i.e. climate smart, economically viable, and socially acceptable (Box 2).

Box 2: Examples of Inadequate and Unsustainable Practices

Coastal protection:

- *Inadequate:* The weight of rocks making up a breakwater is insufficient relative to the energy of the significant wave.
- *Unsustainable:* Sea walls often accelerate erosion on adjacent, unprotected areas of the coast.
- *Unsafe:* A breakwater may, in some instances, exacerbate the volume and speed of seawater overtopping the foreshore area.

Agricultural productivity:

- Monoculture cultivation may decrease soil quality.

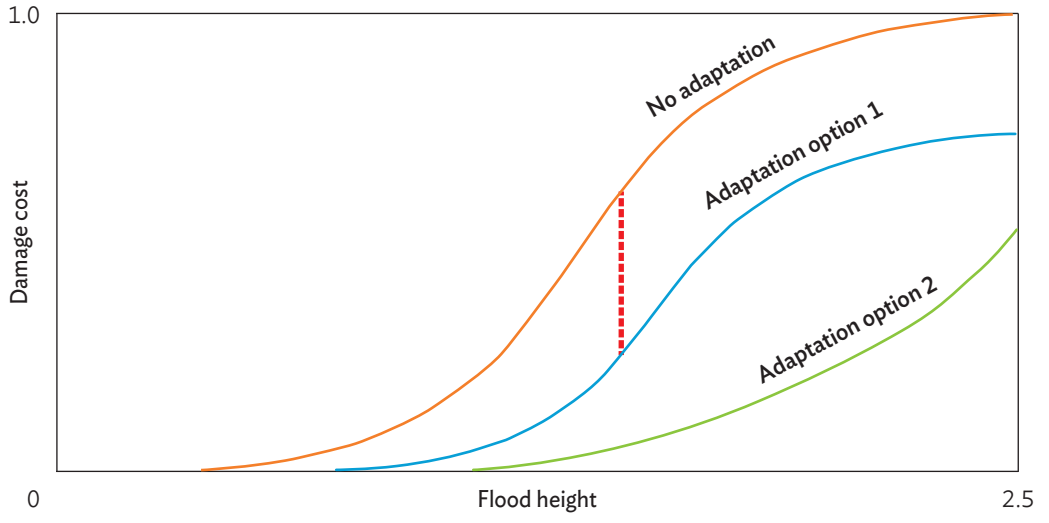
Guideline 13: Ensuring macroeconomic conditions that favor successful adaptation activities include those that foster economic transparency. Such conditions are needed to ensure that disaster and climate-related risks are not masked or compensated for by hidden subsidies and thereby transferred to the wrong parties. Involvement of the private sector in adaptation (e.g. investors and other players in the finance sector) will be encouraged by macroeconomic conditions that include low inflation; stable and realistic exchange and interest rates; pricing that reflects the true marginal and fully internalised costs of materials, energy, labour and other inputs; deregulation; free movement of capital; operation of competitive markets; open trade policies; trade facilitation; and transparent foreign investment policies.

Guideline 14: Any risks that present generations find unacceptable should not be imposed on future generations. Policymaking, planning practices, and industrial development activities should ensure that all future generations will be able to enjoy every important aspect of life, including peace and security, a healthy environment, a small risk of preventable catastrophe, conservation of knowledge, stable governance, a good life for children, opportunities for living, gender equity, and justice.

Guideline 15: Successful adaptation to climate variability and disasters requires programmatic approaches that provide institutional and operational support for individual projects. A sound economic analysis will help minimise the limitations resulting from

the short-term and narrow nature of projects, thus reducing administrative and related burdens and providing much more control over the direction taken by individual projects. These approaches also increase the possibility of sustaining the benefits of a project, even after funding has ceased, and expedites the proposal development and approval processes, as well as implementation.

Figure 5: Hypothetical Cost–Benefit Analysis of an Adaptation Measure



Source: Authors.

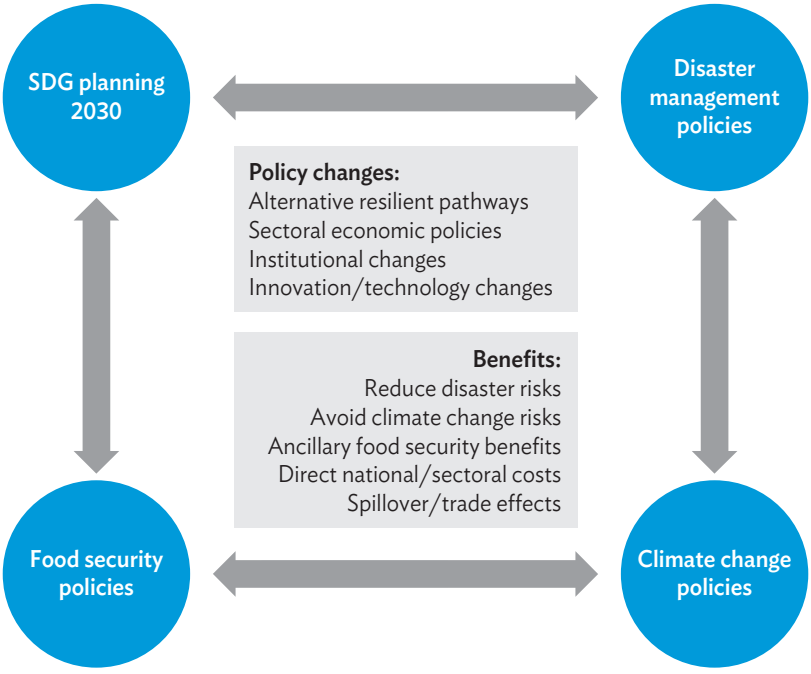
Guideline 16: Emphasis must be placed on coordinating activities—taking advantage of synergies, minimising duplication, and avoiding redundancies—in order to complement other development efforts. Priority should be given to adaptation activities that deliver tangible and visible benefits, rather than exploratory studies. This can help offset the fact that climate change is often perceived as a longer term issue, while other challenges, including disaster recovery, food security, human settlement, infrastructure, water supply, sanitation, education, and health care, require more immediate attention (Box 3).

Box 3: Adaptation Roadmaps Built by Network Groups

National Adaptation Roadmaps contain certain activities that deliver outputs and outcomes that are at least equal in relevance and value to those provided by mainline ministries. The Yale climate connection group provides updated information on and explanations of the climate, climate adaptation, and disaster risk reduction for relevant stakeholders and the public (Yale Climate Connections).

Guideline 17: A commitment should be made to the ongoing practice of monitoring, reviewing, and strengthening the targets of the Sustainable Development Goals 2030 and their interlinkages with DRR, climate change, and food security. Methods used to monitor and report should emphasise transparency, consistency, and accountability, while fostering continued improvement in the efficiency with which outcomes are delivered, and their contribution to sustainable national development.

Figure 6: A Monitoring Framework for Enhanced Resilience



SDG = Sustainable Development Goal.
Source: Authors.

Guideline 18: Regional institutions provide a foundation for effective adaptation at the national level. The establishment of regional institutions with expert considerations and sustained by country ownership and support are important for maintaining momentum in disaster resilience and CCA. They also serve as a repository for documented experience, data acquisition and analysis, and learning experiences that provide essential historical data and information for future generations.

Guideline 19: Emphasis should be placed on minimising the distributional negative impacts of disasters and climate change. Policy recommendations for the ASEAN member states' adaptation roadmap should be developed in line with ASEAN Socio-Cultural Community (ASCC) blueprint, which is a politically binding implementation framework for a sustainable and resilient ASEAN (ASEAN Secretariat, 2016a).

Guideline 20: Countries should pledge their continued commitment to follow in the spirit of the ASEAN Agreement on Disaster Management and Emergency Response, which has effectively facilitated regional cooperation between and among ASEAN member states (ASEAN Secretariat, 2016b). As the legally binding regional agreement, it has directly contributed to the enhancement of disaster risk resilience and CCA.

III Indicative Actions for Developing Adaptation Roadmaps

Table 1: **Indicative Actions, Institutions, and Timeframe for Building Adaptation Roadmaps**

Key Issue	Strategic Policy Choices And Actions	Responsible Institution	Timeline
Promote public awareness	Develop national and subregional programmes on DRR and climate change impacts, causes, and best adaptation practices.	Line ministries	Short to medium term (1–3 years)
	Develop sectoral guidelines and training on public participation in adaptation programmes.	Line ministries	Short term (1 year)
	Devise gender-specific strategies to deliver DRR and climate risk information.	Ministry of Environment and other disaster-related agencies	Short term (1–3 years)
	Share local knowledge with environmental and sectoral agencies to disseminate examples of when public participation has improved adaptation responses.	Local government, media, and civil society	Short term (1–3 years)
Improve scientific capacity	Develop and regularly update a public online database on disaster and climate risk indicators.	Ministry of Environment, and other disaster- and climate change-related agencies[a]	Short to medium term (1–5 years)
	Upgrade and expand targeted research and educational programmes and/or sectoral research and training for scientists, institutions, and others.	Sectoral ministries and the National Statistics Bureau	Short term, then continuous

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Table 1: *Continued*

Key Issue	Strategic Policy Choices And Actions	Responsible Institution	Timeline
	Publicise regional knowledge centres and create satellite offices to disseminate relevant information to affected communities.	Academia and civil society	Short term (1–3 years)
	Maximise the effectiveness of current acts and programmes by developing clear procedural guidelines regarding climate change adaptation add-ons.	Sectoral ministries and local governments	Continuous
Set feasible standards and benchmarks for structural measures	Review international best practice procedures for infrastructure standard-setting, develop national guidelines, and strengthen or expand the application of zoning concepts in setting national standards.	Ministry of Public Works and academia	Medium term (1–5 years)
	Strengthen the instruments of social and economic impact assessment of new infrastructure by developing a clear methodology drawing on best international practices and adjusted to national and local contexts.	Sectoral ministries	Long term (1–7 years)
	Provide necessary climate and economic information, collaborate on analysis, and facilitate consultation with the industry sector.	Planning commission and sectoral agencies	Short term (1–3 years)
	Provide information on the social and community impacts of the proposed standards.	Civil society and academia	Short term (1–3 years)
Develop new programmes to strengthen non-structural measures	Develop a focused and well-packaged programme for the most vulnerable locations that integrates targeted structural measures with non-structural measures, including a funding mechanism for scaling up.	Planning commission and sectoral agencies	Medium term (1–5 years)
	Develop a set of regulatory incentives to support voluntary initiatives using existing good practices.	Ministry of Environment	Continuous
	Provide training and capacity building to policymakers and private-sector operators for better no-regret adaptation management that focuses on international best practices that are locally appropriate.	Sectoral ministries and academia	Medium term (1–7 years)
	Periodically update sectoral guidelines for monitoring and adding new sectors of growing impact.	Local governments and nongovernment organisations	Continuous

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Table 1: *Continued*

Key Issue	Strategic Policy Choices And Actions	Responsible Institution	Timeline
Improve cross-sectoral coordination	Strengthen existing formal mechanisms such as strategic environmental assessments, environmental impact assessment statements, and Sustainable Development Goals to involve environmental authorities in designing structural and non-structural measures.	Ministry of Environment	Short term (1–3 years)
	Coordinate the development of a strategic adaptation framework for using global environmental financing instruments.	Ministry of Environment	Medium term (1–5 years)
	Remove the tariff and non-tariff barriers related to key staple food items.	Ministry of Trade	Short term (1–3 years)
	Empower local governments to oversee regional climate change adaptation programmes and foster cross-sectoral coordination.	Sectoral agencies and civil society	Short term (1–3 years)
	Develop sectoral guidelines to overcome specific identified gaps and facilitate the uptake of best practices.	Sectoral agencies	Short term (1–3 years)
Augment financial resources	Explore innovative financing instruments, including insurance programmes, catastrophe bonds, and other risk-transfer products to support future developments via the global climate change agenda.	Local financial institutions, insurance companies, and international financial institutions	Medium term (1–5 years)
	Strengthen and enhance the domestic financial market to allow financial institutions to mobilise finance from and transfer risks to the market, while enhancing financial inclusion.	Ministry of Finance and Central Bank	Short term (1–3 years)
	Develop a consistent budgetary framework for integrating disaster and climate risks, and input it into consistent and realistic delivery mechanisms related to the most vulnerable sectors, communities, or households in a transparent way.	Ministry of Finance	Short term (1–3 years)
	Link trade and business promotion incentives to adaptation financing by appropriate level of representation so that regional and financial adaptation funding institutions can shape the allocation and deployment of resources.	Ministry of Trade, Ministry of Investment, and Planning Commission	Short term (1–3 years)
	Develop and implement medium-term capacity strengthening action plans, as well as training and staffing plans to meet growing mandates.	Ministry of Finance and the Central Bank	Medium term (1–5 years)

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Table 1: *Continued*

Key Issue	Strategic Policy Choices And Actions	Responsible Institution	Timeline
Strengthen capacity for regional cooperation	Introduce an enhanced methodology for DRR and climate prediction at the regional level, strengthen early warning systems for international river basins, and carry out economic impact assessments of collective cross-border actions.	Academics from advanced economies	Short term (1–3 years)
	Share and promote regional best practice examples of mainstreaming adaptation practices in sectoral planning.	ASEC	Short to medium term (1–5 years)
	Provide the technical and human resources needed for effective management of cross-border climate change impacts, and make clear the roles and responsibilities of all parties involved in collective actions.	Ministry of Environment and Foreign Affairs	Short to medium term (1–5 years)
	Develop a network of regional centres within appropriate existing institutions to provide high-quality training and knowledge and create a high standard of professionalism across the countries.	ASEC	Continuous
	Establish an ASEAN Climate Change Adaptation Centre to accommodate translation for climate policies, climate technologies, and climate education as well as data analysis for incorporation with national development plans.	ASEC	Medium to long term

ASEAN = Association of Southeast Asian Nations, ASEAN Development and Management Consulting Ltd., DRR = disaster risk reduction.

[a] Disaster and climate change-related agencies include the Meteorological Agency, Disaster Management Agency, and Ministry of Public Works, among others.

Note: Short term = 1–3 years; medium term = 1–5 years; long term = 1–7 years.

Source: Authors.

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