Report #04

Enhancing Climate and Disaster Resilience through Nature-based Solutions Across ASEAN and ASEAN Member States: Policy Barriers, Enablers and Opportunities

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Disclaimer

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The report is one of several undertaken under the TAF-GTEI to provide insights into the awareness, role and uptake of nature-based solutions across ASEAN. It has not been formally endorsed by the European Union, ASEAN or ASEAN Member States.

For inquiries contact:

Asih Budiati
Team Leader and Key Expert Climate Change
(abud@niras.dk)

Ayu Ramanadia
Project Manager
(ayra@niras.com)

Harvey Rich
NbS Policy and Finance Expert
(hr13g11@gmail.com)

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Coordinator

Asih Budiati
TAF-GTEI Team Leader and Key Expert Climate Change

Author

Harvey Rich
NbS, Policy and Finance Expert

Other contributors

- Anouxay Phommalath, Junior Expert Lao PDR
- Sithan Pech, Junior Expert Cambodia
- Thunpicha Greigarn, Junior Expert Thailand
- Hop Hoang, Junior Expert Vietnam
- Paulo Salino, Junior Expert Philippines

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List of Abbreviations

ACB	ASEAN Centre for Biodiversity
ADB	Asian Development Bank
AMS	ASEAN Member State
APEC	Asia-Pacific Economic Cooperation
ASEAN	Association of Southeast Asian Nations
AADMER	ASEAN Agreement on Disaster Management and Emergency Response
BwN	Building with Nature
BTR	Biennial Transparency Report
CBD	Convention on Biological Diversity
CCA	Climate Change Adaptation
CCM	Climate Change Mitigation
CRI	Global Climate Risk Index
CTI	Coral Triangle Initiative
DRR	Disaster Risk Reduction
EbA	Ecosystem-based Adaptation
Eco-DRR	Ecosystem-Based Disaster Risk Reduction
EU	European Union
GDP	Gross Domestic Product
GEF	Global Environment Facility
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH
Ha	Hectares
ICM	Integrated Coastal Management
IUCN	International Union for Conservation of Nature
IWRM	Integrated Water Resources Management
LMB	Lower Mekong Basin
M&E	Monitoring and Evaluation
MPA	Marine Protected Area
MRC	Mekong River Commission
MRV	Monitoring, Reporting and Verification
NAP	National Adaptation Plan
NbS	Nature-based solutions
NBSAP	National Biodiversity Strategies and Action Plan
NDC	Nationally Determined Contributions
NGO	Non-Governmental Organisation
NTFP	Non-Timber Forest Product

PEMSEA	Partnerships in Environmental Management for the Seas of East Asia
REDD+	Reducing emissions from deforestation and forest degradation in developing countries
SDG	Sustainable Development Goal
SLR	Sea Level Rise
TAF-GTEI	Technical Assistance Facility for the Green Team Europe Initiative
UNDP	United Nations Development Programme
UNEA	United Nations Environment Assembly
UNFCCC	United Nations Framework Convention on Climate Change

Executive Summary

Context and Rationale

ASEAN and its Member States are among the world's most climate-vulnerable regions, facing escalating risks from extreme weather events, biodiversity loss, deforestation, and land degradation. At the same time, ecosystems – forests, wetlands, coastal systems – offer powerful opportunities for resilience and sustainable development.

Nature-based Solutions (NbS) are increasingly recognised across ASEAN as a critical pathway to address these complex, interconnected challenges. ASEAN and ASEAN Member States (AMS) have identified NbS as a strategic climate priority as part of the ASEAN Climate Change Strategic Action Plan 2025-2030 and other cross-sectoral policy mechanisms, and countries are increasingly prioritising NbS in their international policy targets and national development, climate, disaster and sectoral policies. Several AMS have developed robust enabling policy mechanisms on NbS mainstreaming, at both the strategic and sectoral level, and it is important to gather, review, and share these experiences. The concept of NbS, although widely promoted – including through existing regional and national studies and guidelines – remains relatively unguided, uncoordinated, and underreported across both ASEAN and AMS policies and practices, limiting its effective integration and mainstreaming.

Study Focuses and Objectives

This ASEAN NbS Policy report, supported by the EU-funded Technical Assistance Facility to the Green Team Europe Initiative (TAF-GTEI), provides a review of the current NbS policy landscape across ASEAN – with a focus on NbS for climate and disaster resilience – to understand how it supports, permits, or restricts NbS adoption. It aims to build on existing regional NbS studies, stocktakes and policy briefs developed to date in the region. The study specifically aims to provide ASEAN and six AMS **– Cambodia, Indonesia, Lao PDR, Philippines, Thailand, and Viet Nam** – with a high-level stocktake of existing NbS policies and practices. It also provides recommendations for the integration of NbS into key policy decisions and practical actions, to enhance climate and disaster resilience. The objectives of the study are to:

1. Provide a stocktake of existing policies and practices across the target AMS
2. Assess the degree of NbS mainstreaming into national development, environment, climate, disaster, and sectoral policies for AMS, aligning with the IUCN NbS Standard
3. Identify national and common barriers to NbS mainstreaming
4. Identify national and common enablers for NbS mainstreaming
5. Identify gaps, opportunities and actions to harmonise NbS policy and practice within ASEAN and across AMS.

The study's development has been facilitated via the engagement of more than 70 key AMS stakeholders, to gather comprehensive insights on country and regional specific cases. The report is anticipated to serve as a valuable resource for policymakers in making informed decisions, paving the way for the incorporation of NbS into policy instruments. In addition, the study outputs will provide a useful evidence base for regional coordinators, donors, implementers, economists, planners, researchers, campaigners, and other stakeholders.

Regional NbS Policy and Practice Stocktake

AMS comprise similar, yet distinct, biophysical conditions, sectors, industries, and natural and human risk drivers that shape the multiplicity of needs for NbS across multiple scales and sectors. This report has undertaken a stocktake on the level of integration of NbS into policy and practice across the six AMS, identifying several commonalities.

General evidence underscores the importance of robust **policy** frameworks, guidelines, targets and governance structures in the successful implementation of NbS. Successful policies typically demonstrate the following key components – (i) strong NbS-aligned principles and approaches; (ii) robust and measurable actions, targets and indicators; and (iii) coordinating roles, implementation responsibilities and financing mechanisms.

NbS is the accepted term in all AMS, apart from Indonesia who typically apply Ecosystem-based Approach (EbA), although EbA is generally the most prominent term used to date in policy documents across the reviewed AMS. Most AMS reflect NbS/EbA in their Nationally Determined Contributions (NDCs), all in their National Biodiversity Strategies and Action Plan (NBSAPs), and all AMS that have an active National Adaptation Plan (NAP) refer to NbS/EbA for resilience. The Philippines and Thailand lead the way in national policy integration, both having NbS mainstreamed into their national development plans, with the Philippines mainstreaming NbS into policy across all priority sectors. Across AMS, NbS (and related terms) were mentioned most often in (i) national climate policies, followed by (ii) environment, (iii) agriculture and fisheries, and (iv) water resources. Strong indirect/implicit references to NbS type concepts and approaches are noted in most policies (e.g. ecosystem restoration, green infrastructure, ridge-to-reef).

In terms of common policy gaps, although NbS is recognised as a priority for disaster resilience in many NAPs and NDCs, this recognition is often not translated into national disaster management and response policies and plans, with a lack of integration of NbS into disaster policies (only Philippines and Lao PDR refer to NbS in their national disaster plan).

AMS have shown leadership in establishing national NbS policy guidelines and strategies, such as EbA guidelines for the water sector in Thailand and rural green infrastructure guidelines in Cambodia. Urban EbA guidelines and a national NbS policy framework are under development in Lao PDR and the Philippines, respectively

Practical NbS activities vary across sectors, with urban, coastal and water (river basin planning and management) measures the most common. NbS is largely at the pilot and demonstration stage across most sectors in ASEAN. Proven practical examples that provide a range of benefits include forest restoration across river basins and in upland watersheds, the expansion of urban green spaces and associated green infrastructure, mangrove restoration in coastal areas and wetland restoration. There is increasing evidence for mechanisms such as landscape scale flood-based agriculture and the integration of NbS and hybrid measures into river basin planning and management. However, widespread on-the-ground integration of NbS into agriculture practices and infrastructure developments (hybrid) is still somewhat limited.

Successful initiatives include both top-down, government-led, integrated or bottom-up inclusive, and participatory governance models that involve local communities, private sector stakeholders and government agencies in the planning and implementation of NbS. Local ownership and influence are seen as a key lesson and success factor for NbS projects. In general, challenges persist in ensuring the long-term sustainability, maintenance and learning from measures, underscoring the need for comprehensive benefits reviews and M&E systems.

Common Barriers and Enablers to AMS NbS Policy Mainstreaming

A range of common overarching (i) barriers, (ii) enablers and (iii) gaps and opportunities to NbS mainstreaming – either consistent or common across all AMS – have been identified in this report, based on the national policy analysis and stakeholder consultations, divided into institutional, policy, and technical areas.

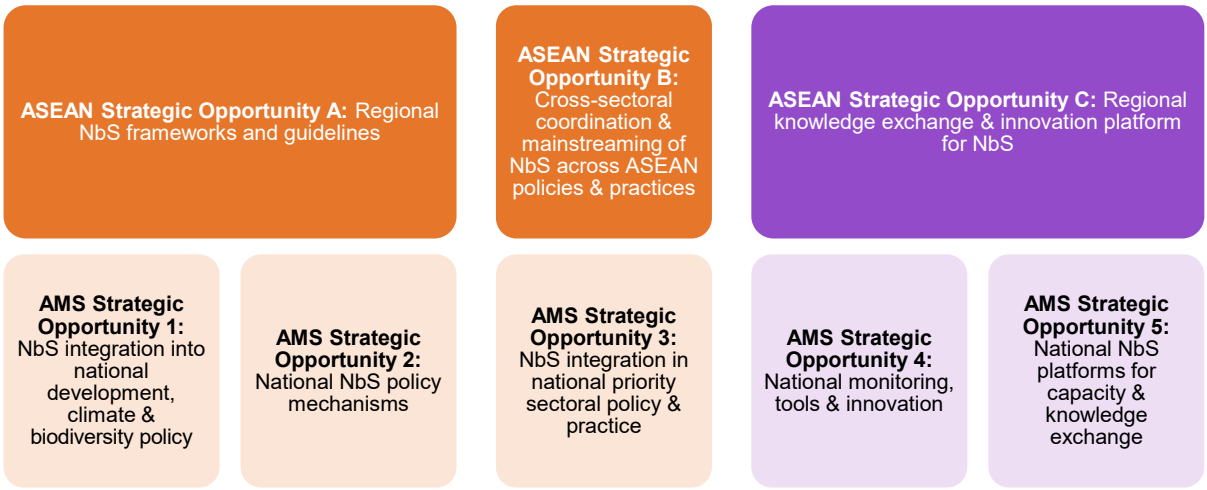
Institutional	Policy	Practical
Barriers		
Lack of dedicated institutional capacity or unclear mandate (lead agency) responsible for NbS	Limited mainstreaming of NbS into key national development and climate policies	Lack of practical NbS guidelines, demonstration projects and evidence base for upscaling
Lack of awareness and alignment on NbS at the national and sub-national level	Absence of NbS definitions, guiding policy frameworks and targets	Lack of integrated approach to NbS in policy and practice (i.e. aligned with IUCN standards)
Preference for hard infrastructure solutions for climate and disaster resilience	Lack of cross-sectoral NbS policies	Challenges with integrated NbS reporting, M&E frameworks or systems
Enablers		
Strong institutional interest and collaboration opportunities in advancing a national NbS agenda	Integration of NbS into key national plans with targets	Sectoral focus to build rationale and evidence base for NbS successes and piloting
	Strong climate policies, with a spotlight on NAPs for NbS integration	Leveraging opportunities for hybrid NbS solutions
Gaps and opportunities		
Clarification on lead agency(s) role and mandate for NbS policy decisions	Development of national NbS policy mechanisms or frameworks (NbS approaches, targets and action planning)	Development and effective implementation of sectoral piloting and demonstration
Establishment of NbS platforms, hubs or task forces for policy dialogues	Integration of NbS into national development and climate policies	Integration of NbS targets and indicators into national M&E and MRV systems
Transboundary engagement and collaboration on NbS	Integration of NbS into key sectoral and sub-national policies, including sectoral strategies, guidelines and tools	Establishment of an evidence base and record of NbS programmes, projects and tools, to enable cross-border, national and sub-national knowledge sharing

Recommendations for NbS policy mainstreaming within ASEAN and across AMS

Several recommendations have been suggested to support policy mainstreaming across ASEAN and AMS. This could include an ASEAN-wide common approach to mainstreaming NbS across key policies and strengthening cross-sectoral governance and regional cooperation, working towards the following goals by 2030 and beyond:

1. Strengthen ASEAN's role as a regional platform for knowledge-sharing, capacity-building and collaboration on NbS policy guidelines and tools.
2. Integrate comprehensive NbS principles, targets and actions into core international climate and biodiversity commitments (NDC, NAP, NBSAP).
3. Establish NbS policy frameworks, principles, targets, standards, and criteria to guide NbS mainstreaming and action planning across sectors and stakeholders.
4. Integrate NbS into national development plans and key climate, disaster, and environment policies (with effective targets).
5. Identify priority sectoral policies, plans, and projects for NbS and integrate NbS into the policies of these sectors. Develop relevant strategies, guidelines, and standards to guide locally-led NbS implementation across these sectors.
6. Build the awareness, knowledge, and capacity of AMS to develop robust and measurable NbS criteria, targets and indicators, aligning with or within existing development and climate M&E systems.
7. Develop multi-stakeholder and cross-sectoral national NbS knowledge-sharing platforms to support priority setting, capacity building and M&E.
8. Advance scientific research, strengthen the evidence base, establish platforms and collate lessons learnt to inform NbS policy and practice mainstreaming.
9. Develop enabling and analytical tools to identify and map opportunities for innovative NbS plans and projects.

ASEAN opportunities are grounded in guideline, integration, capacity building, and knowledge sharing principles, supported by global and regional AMS-AMS exchanges and championing. The AMS opportunities are focused on national-level decisions, mechanisms and interventions to build the institutional and policy framework, cross-sectoral mainstreaming, capacity, platforms and M&E systems to mainstream NbS.



Ultimately, each AMS should aim to consider and build on the opportunities and actions outlined in this study, aligning these with its own national implementation plans, strategies, and frameworks. They should also consider their existing capacity, support network and prioritisation/strategic importance given to the integration of NbS into policy mechanisms.

1 Introduction

1.1. Rationale and objective

1.1.1 Context

ASEAN Member States (AMS) face substantial vulnerability to the impacts of climate change. According to the Global Climate Risk Index (CRI) 2020, some of these countries rank within the top 10 nations most severely affected by extreme climate and meteorological events (hydrometeorological hazards) from 2000 to 2019. Additionally, the region contends with an environment that is gradually deteriorating, characterised by intensive anthropogenetic activity. This combination of factors creates an environment conducive to disasters, leading to escalating negative consequences across economic, environmental, and social spheres.

However, as ASEAN encompasses a wide range of rich terrestrial and marine ecosystems and services – including one of the world's major rivers, some of the highest forest and mangrove cover globally, as well as critical wetland and peatland sites – along with local indigenous knowledge and practices, the region offers some of the most promising opportunities for an ecosystem-led approach to climate and disaster resilience. NbS are increasingly receiving significant attention and recognition across ASEAN, as part of an overall strategy and ecosystem-based approach to address climate change and ecological degradation in the region.

ASEAN and its Member States have identified NbS as a key priority as part of various regional strategic policies and plans, including under the ASEAN Climate Change Strategic Action Plan (ACCSAP) 2025-2030. AMS are also increasingly prioritising NbS in their national development, climate, disaster and sectoral policies. While the term NbS is relatively new to the ASEAN region, the conservation, management and restoration of natural resources and the ecosystem services they provide for climate change mitigation (CCM), adaptation (CCA) and disaster risk reduction (DRR) is not. The science of NbS thus has a long history upon which to draw.

NbS already play a key role in the achievement of national and international policy targets of AMS. Many Member States have developed robust enabling legal and policy mechanisms on NbS mainstreaming, at both the strategic and sectoral level. It is important to take stock and share current policy landscapes, experiences, successes, and challenges. Furthermore, there are still clear policy gaps and needs, including across development, climate, disaster and cross-sectoral linkages that are limiting the implementation and upscaling of NbS. This study therefore delves into the barriers, enablers, and opportunities for NbS policy mainstreaming in ASEAN and across AMS.

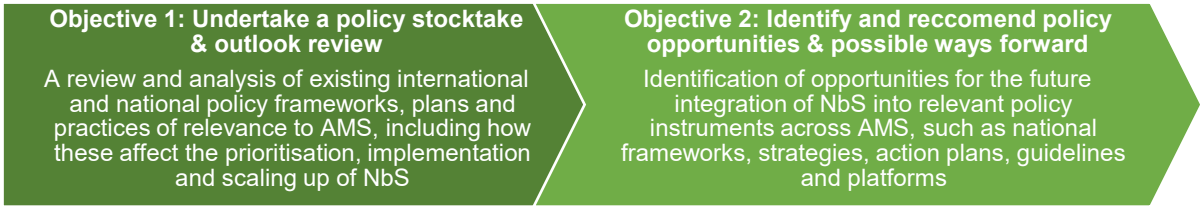
1.1.2 Objectives

The Technical Assistance Facility for the Green Team Europe Initiative (TAF-GTEI) is a regional effort funded by the European Union (EU) and a major part of the broader Green Team Europe Initiative in partnership with ASEAN. TAF-GTEI aims to strengthen the EU's and ASEAN's partnership while mitigating adverse environmental impacts, climate-related issues, and disaster risks. A focal outcome of the project is to build on cooperation with and within ASEAN for developing and implementing ambitious climate policies, including enhancing NbS for CCM, CCA and DRR.

This study supports TAF-GTEI's outcomes, aiming to conduct a review of the current NbS policy landscape across ASEAN – with a focus on NbS for climate and disaster resilience – to understand how it supports, permits, or restricts NbS adoption. It aims to build on existing regional NbS studies, stocktakes and policy briefs developed to date, including the ASEAN-led publications:

- *Study on Nature-based Solutions in ASEAN*, adopted by the ASEAN Ministers on Agriculture and Forestry at its 44th meeting in October 2022
- *Strengthening the Implementation of Nature-based Solutions in ASEAN: Challenges and the Way Forward,* policy brief under the ASEAN Socio-Cultural Community (ASCC) in October 2024
- *Issues and Challenges in Tackling Climate Change through Nature-Based Solutions in ASEAN: Mainstreaming Nature-based Solutions Framework, Financing, Advisory Services and Knowledge Tools,* trend report under ASCC in May 2025.

The study builds on the findings of these publications and further aims to identify common regional barriers and enablers to the incorporation of NbS into relevant policy instruments within ASEAN and AMS. The study also identifies possible future opportunities for ASEAN and AMS to better integrate NbS into policies, harmonise existing frameworks, establish sectoral or industry specific regulations and guidelines, and foster cross-sectoral engagement and alignment on NbS going forward.



The study has a spatial focus on six targeted AMS – Cambodia, Indonesia, Lao PDR, Philippines, Thailand, Viet Nam – as well as ASEAN as a regional platform. A national NbS policy profile has been developed for each of the six AMS, presented in Annex 1.

To strengthen the findings, the study has engaged with a range of targeted AMS stakeholders. This has supported the gathering of comprehensive insights on country-level and regional NbS stocktakes, good practices and the co-identification of possible NbS mainstreaming opportunities.

The objectives and findings of this study aim to build on, complement and should be reviewed in accordance with other co-developed studies by the TAF-GTEI project, namely:

- *Report 1: Climate Risks and Hazard Analysis in ASEAN: Inventory of Nature-based Solutions Experiences in ASEAN Member States*
- *Report 2: Nature-based Solution Characterisation and Typology Development for ASEAN Region*
- *Report 3: Catalogue of Nature-based Solutions Practices in ASEAN Region*
- *Report 4:* This report
- *Report 5: NbS finance stocktake and opportunities for ASEAN and AMS*

1.2. Target beneficiaries

The study is targeted at AMS policymakers – particularly central ministries and their departments working across, climate, disaster, environment and biodiversity sectors – as well as other relevant stakeholders. It aims to provide such stakeholders with an understanding and stocktake of how NbS is currently integrated into national-level policies and practice, as well as possible opportunities for integrating and mainstreaming NbS across national and sectoral policy landscapes, as well as their interaction in the ASEAN context.

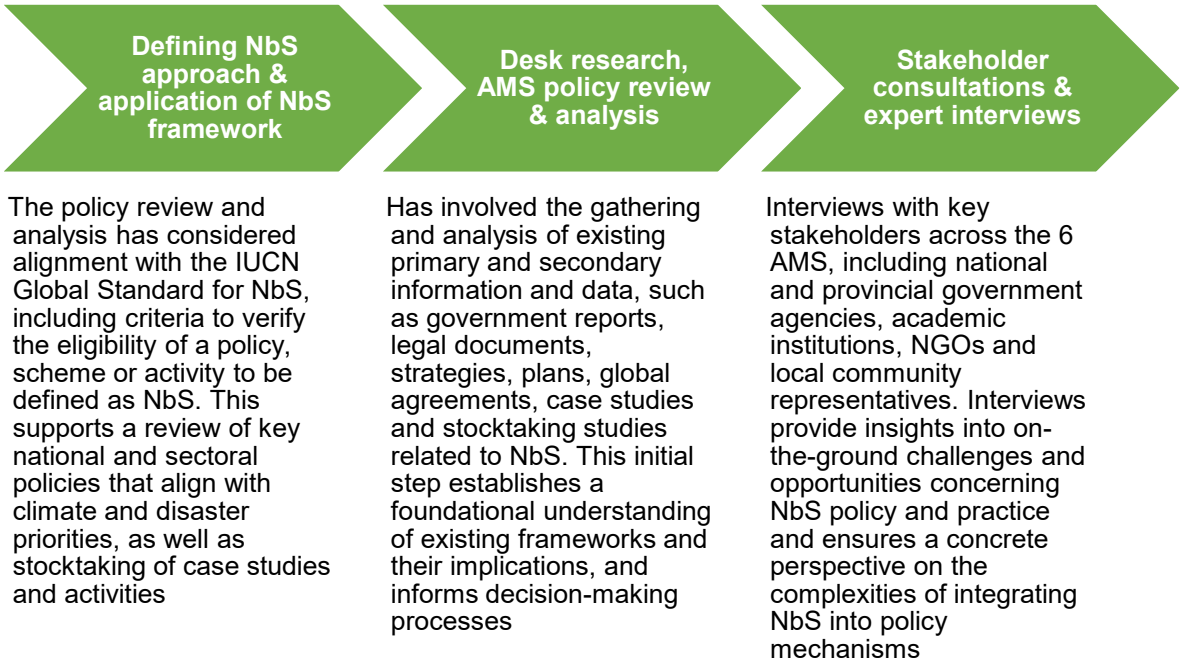
It is hoped that this information will aid in developing frameworks, approaches, and resources to further integrate NbS into policy landscapes going forward. Furthermore, the study proposes credible and effective choices for strategic policy opportunities and suitable delivery pathways, that are specifically tailored for ASEAN bodies and AMS government agencies.

The study's outcomes are anticipated to serve as a valuable resource for national policymakers in making informed decisions and will also provide a useful evidence base for regional coordinators, investors, donors, implementers, economists, planners, researchers, campaigners, and other stakeholders.

1.3. Approach and framework

The policy analysis combines various research techniques to develop a holistic understanding of national and international commitments, laws, frameworks, plans and regulations and their interaction and integration with NbS. This study considers a range of priority areas, sectors and stakeholders. The multi-step approach consists of the following stages:

Figure 1: Key methodological considerations



1.3.1 Defining nature-based solutions for climate and disaster resilience

In recent years, various definitions of NbS have been proposed. It was only at the 5th United Nations Environment Assembly (UNEA) meeting held in February 2022, Nairobi, that global consensus was reached on the definition of NbS as:

> *Actions to protect, conserve, restore, sustainably use, and manage natural or modified terrestrial, freshwater, coastal, and marine ecosystems that effectively and adaptively address social, economic, and environmental challenges while simultaneously providing human well-being, ecosystem services, resilience, and biodiversity benefits*.

Meanwhile, the IUCN (2020) defines NbS as:

> *Actions that protect, sustainably manage, and restore natural or modified ecosystems in ways that address societal challenges effectively and adaptively, while providing benefits to human well-being and biodiversity.*

NbS are considered a framework for ecosystem-based approaches. The NbS umbrella encompasses ecosystem-based adaptation (EbA) – addressing climatic hazards and adaptation to long-term climatic change and its impacts – and ecosystem-based disaster risk reduction (Eco-DRR) – addressing climatic and non-climatic hazards (**Error! Reference s**

ource not found.).[1] These two sub-approaches are critical components of this study's analysis.

NbS measures can comprise the protection and restoration of natural and semi-natural ecosystems, the sustainable management of modified areas or working lands, and the creation of new ecosystems in and around urban areas or across wider natural or agricultural landscapes. They are inherently site-specific in their nature and replication potential. Interventions can only be successful with the consideration of different knowledge systems and the inclusive and transparent participation of affected groups, including indigenous people, local communities, women and youth.[2]

NbS are critical to the global sustainability, climate, disaster and biodiversity goals, and integrating these commitments into national level policy and practice. NbS are inherently embedded within the Paris Agreement and feature prominently in many Nationally Determined Contributions (NDCs), National Adaptation Plans (NAPs) and National Biodiversity Strategy and Action Plans (NBSAPs), often aligning with domestic policies, strategies, and action plans. NbS deliver multiple benefits for climate, nature and people, and offer significant potential for addressing climate and disaster-related challenges and building local resilience, besides serving as carbon sinks for climate mitigation.

NbS policy considerations and lessons

NbS are typically seen as cost-effective, multifunctional (deliver multiple benefits), adaptive and inclusive approaches to climate and disaster resilience. However, the increasing demand and use of NbS has sometimes led to cases of misuse of the concept, where even good intentions may result in harm to nature and people, especially when poorly planned or implemented, or with contradicting objectives.

For example, policy targets may outline conflicting ambitions, such as a target/indicator on increasing regenerative agricultural areas vs expanding protected areas in the same landscape. Other examples include policy standards outlining approaches using monoculture and/or non-native tree species, which may degrade soil and ecosystems, whilst mangrove projects can fail without consideration of upstream and downstream linkages and processes.

If NbS are only implemented as uncoordinated small-scale pilots and applications, their substantial potential to address environmental and societal challenges will not be fulfilled. Poorly coordinated or mislabelled NbS projects risk undermining their credibility, reducing impact, and deterring investment or donor confidence (IUCN, 2020a; IUCN, 2020b).

Strengthening NbS requires addressing pressures while fostering multi-stakeholder collaboration among governments, private sector, and civil society. However, in a landscape saturated with acronyms and evolving terminology, NbS are frequently framed in varying ways due to the lack of universal, regional or nationally agreed definitions. A key concern for NbS going forward is how interventions are aligned with the criteria and win-win outcomes of the IUCN Global Standard on NbS. This is critical to understanding the degree to which policies, programmes and practices can be recognised under the NbS umbrella, supporting nature-positive, inclusive and resilient ecosystems and livelihoods.

[1] NbS as an umbrella concept also covers green infrastructure, blue-green infrastructure, bioengineering and natural infrastructure as sub-categories, although the terms are often used interchangeably. Through hybrid measures, NbS can be integrated with elements of hard or grey infrastructure, for example across rural infrastructure or in existing well-developed landscapes such as urban centres. NbS however have advantages over hard infrastructure solutions, including through the multiple benefits they provide, their cost-effectiveness, their positive environmental and social impacts, and their ability to meet multiple global targets and goals.

[2] IUCN, 2020a; Tun et al., 2024

1.3.2 Application of the IUCN Global Standard for NbS to support a regional comparative policy analysis and identification of common approaches

To assess the policy dimensions, the IUCN Global Standard has been applied. The standard provides a common framework for designing, implementing, and evaluating activities that follows the NbS framework or consist elements of NbS to address global sustainability challenges. For an intervention to be considered an NbS, it must address one or multiple of seven societal challenges (see Table 1), in an integrated manner.[3]

Table 1: Study NbS criteria, adapted from IUCN Global Standard

No.	NbS criteria consideration
1	Do national and/or sectorial policies of relevance to climate and disaster resilience refer to and provide an enabling environment for NbS to address **societal challenges**?
2	Do national and/or sectorial policies of relevance to climate and disaster resilience refer to and provide an enabling environment for NbS to support **design at scale**?
3	Do national and/or sectorial policies of relevance to climate and disaster resilience refer to and provide an enabling environment for NbS to produce **net biodiversity benefits**?
4	Do national and/or sectorial policies of relevance to climate and disaster resilience refer to and provide an enabling environment for NbS that are **economically feasible**?
5	Do national and/or sectorial policies of relevance to climate and disaster resilience refer to and provide an enabling environment for NbS that are **inclusive and equitable**?
6	Do national and/or sectorial policies of relevance to climate and disaster resilience refer to and provide an enabling environment for NbS to **balance the trade-offs** involved in applying NbS?
7	Do national and/or sectorial policies of relevance to climate and disaster resilience refer to and provide an enabling environment for NbS that can be **adaptively managed**?
8	Do national and/or sectorial policies of relevance to climate and disaster resilience refer to and provide an enabling environment for NbS to contribute to **mainstreaming and sustainability**?

Major societal challenges

Source: IUCN (2020)

[3] IUCN, 2020.

For this study, the standard is applied to national policy analysis to provide insights into the extent to which policies are aligned with and support the integration of NbS across ASEAN and AMS, including applying the eight criteria of the IUCN Global Standard to *selected example* policies (Table 2). The AMS analysis reviews key policy levels to identify inclusions of NbS. To gain an initial understanding of the awareness, mainstreaming and prioritisation of NbS across AMS policy mechanisms, this study has explored to what extent policies contain explicit/direct reference to NbS concepts (including ecosystem-based approaches, EbA, Eco-DRR and EbM) principles, targets and activities. Noting the relative novelty of NbS as a term in ASEAN, the study has also reviewed implicit/indirect references to NbS type concepts and approaches (see Table 3).

For each AMS, case studies of policy mainstreaming and good practice examples are also presented across a range of different priority sectors and mechanisms, generally aligned with the IUCN standards.

1.3.3 ASEAN and AMS policy stocktake review and analysis

Various studies have emphasised that NbS are most effective when they are embedded into long-term policies, allowing sufficient room for local-level application, interpretation and stakeholder collaboration.[4] Regional and national policies provide important mechanisms to ensure the inclusion of NbS across development, climate and disaster-related activities. They can also create an enabling environment for the mainstreaming and upscaling of NbS across priority areas and sectors. This includes across socio-economic development, climate, environment, disaster and relevant sectoral policies, as well as national NDCs, NAPs, NBSAPs.

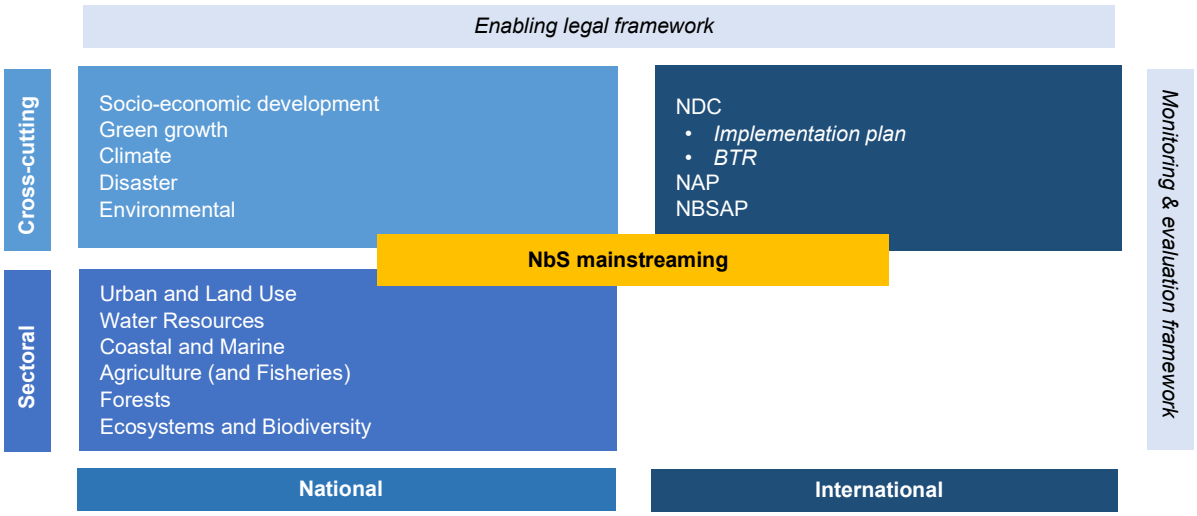
In terms of sectoral priorities, country NAPs and NDCs highlight the main at-risk sectors, requiring priority interventions. A review of AMS NDC/NAP profiles, as well as relevant climate and disaster reports, including by the World Bank, Asian Development Bank (ADB) and ASEAN, has identified several priority risk areas and impacted sectors of relevance to NbS. These sectors form the basis for the climate, disaster and NbS sectoral policy review and analysis profiles across the selected AMS and ASEAN (Table 2).

In addition, integrated monitoring and evaluation (M&E) and monitoring, reporting, and verification (MRV) systems and tools are critical to assess the mainstreaming potential and effectiveness of policy decisions, as well as their uptake at the national level.

Table 2 outlines the AMS policy levels explored in this study. The study has also reviewed relevant ASEAN core and sectoral policies and plans.

[4] van Klaveren et al., 2025

Table 2: Priority areas selected for policy review and analysis across the six AMS



1.3.4 Stakeholder consultations

Based on the results of the information gathering exercise and initial policy review, key stakeholders representing a range of NbS experiences and perspectives were selected to participate in in-person on online interviews. Policy-related interviews focused on key considerations including (i) institutional mandates and policies relevant to NbS, (ii) existing NbS targets and actions in key policy documents and implementation, (iii) reporting and M&E systems on NbS, (iv) barriers and challenging to NbS policy integration, and (v) gaps and opportunities for NbS policy integration. A list of all stakeholders consulted is included in Annex 3.

1.3.5 Scope and considerations

This analysis has predominantly focused on national level policy documents and linkages, with limited sub-national policy and planning analysis, apart from demonstration via selected sub-national case study examples where relevant.

It is important to recognise that this review does not represent a complete review of all relevant policies and projects across the ASEAN region; rather, it offers an overview of priority policies and selected initiatives that address relevant challenges and solutions within the region. The selection reflects broader challenges and opportunities in integrating climate resilience and sustainability through NbS efforts, aiming to include diverse perspectives from various AMS and stakeholder groups. Policy documents that are accessible online or that have been provided to the project team have been examined. The review also largely focuses on policies available or translated into English, noting some variations in translated language (e.g. nature-based models sometimes used in Viet Nam).

For the purposes of the analysis, policy documents with explicit mention of '*nature-based solutions*', (ii) '*ecosystem-based approaches*', and/or (iii) '*ecosystem-based adaptation*', (iv) *ecosystem-based disaster risk reduction* (as well as *ecosystem-based mitigation*) will be recorded as containing reference to NbS.

The review also considers NbS-related concepts and approaches (i.e. where NbS is not directly referenced). A detailed review of relevant policies referencing NbS (or associated

concepts) for each AMS is presented in Annex 2, with a summary of the criteria applied during the review outlined in Table 3.[5]

Table 3: Key criteria considered in policy review

Core NbS terminology	NbS type concepts and approaches (examples considered)
• Nature-based Solutions (NbS) • Ecosystem-based Adaptation (EbA) • Ecosystem-based Disaster Risk Reduction (EcoDRR) • Ecosystem-based Mitigation (EbM) • Ecosystem-based Approach	• Building with Nature (BwN) • Ecological engineering • Green infrastructure • Forest and landscape restoration (FLR) • Community-based natural resource management (indigenous and local knowledge) • Integrated coastal zone management (ICZM) • Integrated river basin management (IRBM) • Integrated water resources management (IWRM) • Marine spatial planning (MSP) • Protected Areas and Other Effective Area-based Conservation Measures (OECMs) • Regenerative/sustainable agriculture and agroecology • Ridge-to-reef approach

The policy analysis has focused on priority sectors for climate change adaptation and disaster resilience, which are of most relevance to the selected AMS (i.e. top sectors impacted by climate and disaster risks according to reviewed policies and literature). Several sectors have been excluded from the analysis, due to their reduced sectoral alignment/NbS consideration to date. Whilst it is noted that these are also important for CCA and DRR and should consider NbS mainstreaming priorities, excluded sectors from the review include building and construction, transport, energy, industry and health.

The identified barriers, enablers, and possible opportunities focus predominantly on policy-related NbS mechanisms – an accompanied NbS finance report outlines ways forward for NbS financing and upscaling.

[5] NbS core terminology ad NbS type concepts and approaches have been defined based on IUCN (2025) and UNHDRR guidelines and past studies. These include specific keywords to help to identify NbS and NbS-related concepts in existing policies and plans, which are outlined in detail in Annex 2

2 NbS Priorities for Building Resilience in ASEAN

AMS face significant vulnerability to climate change due to their exposure to extreme weather events, environmental degradation, and socioeconomic challenges. The Global CRI (2020) ranks the Philippines, Viet Nam, and Thailand among the top 10 countries most affected by hydrometeorological hazards from 2000-2019. Between 2009-2020, natural hazards caused over 33,000 deaths and affected 222 million people. The region's reliance on natural resources, low-income rates and exposure to natural and human-induced hazards, exacerbates disaster risk, with widespread socio-economic and environmental consequences.

Flooding – including both riverine and coastal flooding – is most prevalent hazard among ASEAN countries, causing substantial impacts on human lives, economies, and the environment. Droughts also pose a significant threat, along with meteorological (tropical cyclones, heatwaves and wildfires) and geophysical hazards (erosion, landslides, earthquakes, tsunamis and volcanic eruptions). Climate change intensifies the severity, duration, and frequency of natural hazards such as droughts, floods, and typhoons. Increasing migration to vulnerable areas, such as coastal zones, floodplains and mountainous areas, further heightens risks under current scenarios.

AMS comprise similar, yet distinct, biophysical conditions, sectors, industries, and natural and human risk drivers, that shape the multiplicity of needs for NbS across multiple scales and sectors. There is a growing concern for increasing populations, rapid urbanisation, complex land tenure systems and infrastructure expansion, with direct encroachment and pressures on forest and wetland areas, as well as increasing ecological footprints, becoming a key policy challenge across ASEAN[6].

While economies in the region are diversifying to reduce dependence on agriculture and natural resources, some countries remain reliant, with over 20% of their gross domestic product (GDP) derived from these sectors. Agriculture-dependent communities and those reliant on forest resources are particularly vulnerable to climate change impacts. Climate change will significantly affect agriculture and livestock sectors in Asia, home to 67% of global agricultural outputs, threatening both food security and livelihoods.[7]

Deforestation and biodiversity loss – projected to reach up to 40% by 2100 – threaten the region's ecosystems and the services they provide to local communities and nationally. Forests, wetlands and marine ecosystems such as coral reefs and seagrass beds, provide crucial functions in the face of disasters, but their degradation increases regional exposure to climate variability and extreme events. Addressing these vulnerabilities is critical to safeguarding livelihoods and building the resilience of AMS against intensifying climatic challenges.[8]

With the ASEAN region highly vulnerable to climate impacts such as floods, droughts, and rising sea levels, integrating and building ecosystem resilience is a critical tool for enhancing resilience and sustainability across AMS policy mechanisms.

[6] Lechner et al., 2021, ASCC, 2025
[7] ASCC, 2025
[8] ASEAN, 2021

Table 4: Examples of major risks and corresponding priority sectors commonly highlighted across AMS, including examples of NbS approaches and measures

Major hazards and risk areas	Associated priority sectors	Example NbS type concept/ approach (with example measure)
Hydrological hazards		
Floods (riverine and coastal)	All	Integrated river basin management (upland forest restoration)
Drought (agricultural and water scarcity)	All	EbA (wetland conservation and restoration)
Meteorological hazards		
Heatwave	Urban and land use, water resources, ecosystems and biodiversity	Green infrastructure (urban tree cover)
Wildfire	Agriculture, forestry, ecosystems and biodiversity	Community-based natural resource management (peatland management and restoration and forest fire management)
Tropical cyclones (typhoon and storm surge)	All	Eco-DRR and integrated coastal zone management (coral reef and mangrove protection and restoration)
Saline intrusion	Coastal and marine, agriculture	Sustainable agriculture and agroecology (adaptive mangrove-shrimp livelihood models)
Geophysical hazards		
Landslide	Agriculture, urban and land use	Ecological engineering (vegetated hybrid slope stabilisation)
Erosion (riverine and coastal)	Coastal and marine, agriculture, urban, ecosystems and biodiversity	Integrated river basin management (riparian buffer zone)
Human pressure/ecosystem degradation		
Forest and wetland loss (inland and coastal)	All	Forest landscape restoration (natural forest regeneration)
Biodiversity loss	All	Protected area management and OECMs (restoration of forests and biodiversity corridors)

The reviewed AMS comprise similar, yet distinct, biophysical conditions, sectors, industries, and natural and human risk drivers, that shape the multiplicity of needs for NbS across multiple scales and sectors. Based on the stakeholder discussions and policy reviews to support the development of national NbS profiles, example priority risk areas have been identified for climate and disaster-related NbS resilience building priorities. Several findings across ASEAN and for AMS are presented in Figure 2.

Figure 2: Priority resilience issues and at-risk sectors for NbS consideration across selected AMS

NBS RESILIENCE PRIORITIES

Hydrological hazards

Monsoonal **flood** risk is an overriding priority across all AMS, and in particular for Mekong countries, caused by both riverine and flash flooding

This is compounded by water scarcity and **drought** risk during the dry season – both meteorological (often due to a precipitation deficit) and hydrological drought (usually associated with a deficit in flow from river basins)

Coastal hazards

In Indonesia and the Philippines in particular, building **marine and ocean** resilience to coastal hazards is an overarching priority, although they face differing challenges. Indonesia is faced by SLR and coastal erosion, with the Philippines impacted by typhoons and storm surges

The coastal Mekong countries of Cambodia, Thailand and Viet Nam are also at-risk from coastal hazards such as SLR, coastal erosion and saline intrusion

Ecosystem degradation challenges

Ecosystem degradation is a key challenge, with **forest loss** (from deforestation in upland headwaters to the cutting of coastal mangroves), such as in Indonesia's Sumatra and Kalimantan regions, being the predominant anthropogenic driver of climate and disaster impacts.

This is followed by a loss of inland and coastal **wetlands**, peatland, seagrass and coral reef ecosystems and their services

Vulnerable and at-risk sectors

The **agricultural** sector is one of the main sectors impacted by climate risks, natural disasters and anthropogenic drivers across all AMS – particularly flood and drought – along with **water resources**, **natural resource management**, **urban settlements** and **coastal/marine landscapes** and sectors

NbS Priority Risk Area	Cambodia	Indonesia	Lao PDR	Philippines	Thailand	Viet Nam
1	Flood Risk	Flood Risk	Flood Risk	Coastal-related Risks	Flood Risk	Flood Risk
2	Drought Risk	Coastal-related Risks	Drought Risk	Flood Risk	Drought Risk	Drought Risk
3	Ecosystem Degradation	Ecosystem Degradation	Ecosystem Degradation	Ecosystem Degradation	Ecosystem Degradation	Ecosystem Degradation
4	Coastal-related Risks	Landslide Risk	Landslide Risk	Drought Risk	Coastal-related Risks	Coastal-related Risks

3 Common Policy Trends and Approaches for NbS Integration across ASEAN

3.1. NbS policy integration across ASEAN

The governance and mandated arrangements for NbS across ASEAN units are wide-ranging and complex, directed under the ASEAN Socio-Cultural Community (ASCC) and the ASEAN Economic Community (AEC); two of the three main pillars of ASEAN. The ASCC includes an environmental dimension, under which there are several working groups that oversee and have alignment and/or priorities on NbS:

- ASEAN Working Group on Nature Conservation and Biodiversity (AWGNCB)[9], and
- ASEAN Working Group on Climate Change (AWGCC).

Outside of the ASCC, the AEC also comprises several key sectoral bodies/committees engaged on NbS related activities. For example, the ASEAN Working Group on Social Forestry are collaborating with Swiss, FAO and other partners, to develop an ASEAN guideline and toolkit on NbS/EbA in the forestry sector – when launched in 2025 this will become the first ASEAN-led regional sector guideline on NbS.

ASEAN is addressing NbS-related practices through various ecosystem-based initiatives, including climate resilience networks, sustainable natural capital, supporting greening policies, and targeted conservation efforts via the ASEAN Centre for Biodiversity (ACB). The ACB is also in the process of establishing an NbS knowledge sharing platform on NbS tools (including a catalogue of measures relevant to ASEAN) and policy briefs.

NbS is well referenced and integrated across key ASEAN Divisions policies and frameworks – with 10 of 12 (80%) of reviewed ASEAN policies referring to NbS/EbA priorities and activities, relating to stocktaking, capacity building, awareness raising, research/science and investment. Going forward, NbS will also be a key component of the ASEAN Climate Change Strategic Action Plan 2025-2030 (ACCSAP).

[9] The AWGNCB is supported by the ACB which facilitates cooperation and coordination on the conservation and sustainable use of biodiversity across ASEAN

Table 5: Examples of key NbS references across ASEAN policies

Policy/ framework area	No of policies analysed	No of policies mentioning NbS	Key policy referencing NbS (with examples)/ Comments
Environment Division (ASCC)	6	6 (100%)	ASEAN Biodiversity Plan (2024, ACB) Target 8 Strategies and Key Actions: • Stocktake on NbS and/or ecosystem-based approaches in the ASEAN, including ASEAN Heritage Parks • Develop an e-learning course on NbS Target 12 Strategies and Key Actions – 'Enhance Green Spaces and Urban Planning for Human Well-Being and Biodiversity': • Promote awareness of NbS – its benefits, challenges and considerations Target 20 Strategies and Key Actions – '*Strengthen Capacity-Building, Technology Transfer, and Scientific and Technical Cooperation for Biodiversity*': • Promote capacity development on NbS
Other Divisions (under APSC, AEC, ASCC or crosscutting networks)	5	4 (80%)	ASEAN Socio-Cultural Community Strategic Plan (ASCC, 2025) Objective 11.2 (Strategic Measure 11.2.3): • Enhance mitigation and adaptation to climate change and reduce vulnerability by promoting climate resilience and adaptive capacity, implementing NbS and ecosystem-based approaches through active engagement of the ASEAN Community-based Climate Action Objective 12.2 (Strategic Measure 12.2.3): • Intensify efforts in utilising and harnessing the full potential of science, technology, and innovation in strengthening climate, disaster resilient infrastructure, and NbS for sustainable development to realise ASEAN as a centre of excellence for disaster management
Food, Agriculture and Forestry Division (AEC)	1	0 (0%)	-

3.2. NbS policy integration across AMS

At the national level, a range of policies are critical to framing and guiding NbS mainstreaming across all AMS. The formulation and implementation of NAPs support the implementation of enhanced adaptation actions and the development of integrated approaches to CCA, DRR and sustainable development, including through NbS. International policy commitments – such as through NDCs and NBSAPs – also typically support the mainstreaming on NbS into national and sectoral policies, targets and action plans of AMS. National social and economic development plans, climate and environmental strategies, and sectoral plans are also recognising the value of nature and ecosystems to support climate and disaster resilience.

The level of integration of NbS into policy and practice across ASEAN and the reviewed AMS is complex, yet several commonalities exist. General evidence underscores the importance of robust national policy framework inclusions, sectoral NbS strategies and guidelines and effective governance structures for the successful framing and implementation of NbS.

Table 6 outlines NbS references within reviewed policies (acknowledging missed policies and that this does not accounting for strong principles and approaches robust and effective targets etc.) across AMS. This aims to simply demonstrate the degree to which NbS has been recognised, prioritised and adopted across example national policy mechanisms.

Table 6: NbS references across AMS international and national policies

Country	No of policies analysed	No of policies mentioning NbS (or EbA)	International policy commitments			Key national thematic/sectoral policy referencing NbS (or EbA)[10]
			NDC	NBSAP	NAP	
Cambodia	23	6 (26%)	Yes	Yes	N/A	Climate (CCCSAP); development (Pentagonal Strategy Phase 1)
Indonesia	25	8 (32%)	Yes	Yes	Yes	Development, (RPJPN); agriculture (Grand Strategy of Agricultural Development); water resources (National Water Resources Policy)
Lao PDR	20	3 (15%)	Yes	Yes	N/A	Disaster (National Strategy on Disaster Risk Reduction)
Philippines	23	11 (48%)	No	Yes	Yes	Referenced across all priority areas
Thailand	23	8 (35%)	Yes	Yes	Yes	Climate (Climate Change Master Plan, Long-Term Low Greenhouse Gas Emissions Development Strategy, NDC Action Plan on Mitigation); environment (Environmental Quality Management Plan); development (National Economic and Social Development Plan)

[10] This column highlights any Nbs/EbA references across policies outside of NDCs, NAPs and NBSAPs. In addition to this, it is recognised that many national and sectoral policies refer indirectly to NbS-aligned concepts and approaches

Viet Nam	25	8 (32%)	Yes	Yes	Yes	Environment (Law on Environmental Protection, National Environmental Protection Strategy); coastal and marine (Law on Marine and Island Resources and Environment); agriculture (Scheme for Environmental Protection in Fishery Sector)

Five of six AMS reflect NbS/EbA in their NDCs, and all countries that have an active NAP refer to NbS/EbA for climate resilience. All AMS refer to NbS/EbA in their NBSAPs. These international commitments have largely been translated into national policy, with only Lao PDR and Viet Nam having no reference to NbS in their national climate strategies and plans.

Across AMS, the integration of NbS into policy mechanisms has taken differing approaches. Successful policies typically demonstrate the following key components – (i) strong NbS-aligned principles and approaches; (ii) robust and measurable actions, targets and indicators; and (iii) requirements for coordinating roles, implementation responsibilities and financing mechanisms. Strong policies also align well with the IUCN NbS criteria, including a focus on priority sectors and societal needs, inclusivity and supporting local community-based actions, financing and economic considerations for NbS, ensuring biodiversity positive approaches, mainstreaming and upscaling.

In terms of common policy gaps, despite NbS being recognised as a priority for DRR in many NAPs and NDCs, this is often not translated into national disaster management and response policies and plans, with a lack of integration of NbS into disaster policies (only Philippines and Lao PDR refer to NbS in their national disaster plan). Coastal and marine sectors are also a priority across AMS; however, they typically lack robust NbS policy references—if such policies exist at all. For example, Viet Nam's *Law on Marine and Island Resources and Environment*, Indonesia's *Blue Economy Roadmap*, and the Philippines' *Blue Economy Act* contain limited reference to ecosystem approaches in legal documents. In addition, despite all reviewed AMS referring to NbS in their NBSAP, no AMS highlights NbS in national thematic ecosystem and biodiversity-related policies or plans (also linked to an absence of thematic biodiversity policies). Annex 2 presents a more detailed breakdown of policy inclusions and gaps across the six studied AMS. Five key common findings for NbS policy integration are presented in Figure 3.

Figure 3: NbS stocktake of policy successes and gaps across AMS

TERMINOLOGY AND APPROACH TO NBS

NbS is the accepted term in all AMS, apart from Indonesia who typically apply NbS and/or **EbA.**

EbA is the dominant term for most AMS in international and national policies, although more recent policies suggest a shift towards **NbS.**

INTERNATIONAL NBS COMMITMENTS

Almost all countries highlight NbS and/or EbA in their **NDCs**, and most in their **NBSAPs.** Where present, **NAP**s provide a key policy mechanism for identifying national and sectoral NbS priorities, targets and actions

Despite consistent references, many NDCs, NAPs and NBSAPs do not follow this up with strong or clear NbS principles, targets or actions

FROM INTERNATIONAL COMMITMENT TO NATIONAL POLICY ACTION

NbS is a nascent yet growing approach for national development policies, with limited reference in most AMS. Strong indirect references to **NbS-aligned concepts and approaches** are noted in most policies (such as IRBM, green infrastructure, forest landscape restoration, ridge-to-reef).

Cambodia, the Philippines and Thailand have all mainstreamed NbS into their **national socio-economic development plans**

NATIONAL ENVIRONMENT POLICIES

Across AMS, NbS (and related terms) were mentioned most often in (i) national **climate**, followed by (ii) **environment** policies**.** Only two references to NbS were made in **disaster** policies.

The Phillipine are advancing a **national NbS policy framework** and have also mainstreamed NbS/EbA-related terminology in all of the reviewed priority areas

SECTORAL INTEGRATION OF NBS INTO POLICY MECHANISMS AND GUIDELINES

Across the 6 AMS, NbS (and related terms) were mentioned most often in national (i) **agriculture** (and fisheries) and (ii) **water resources** sectoral policies. Several sectoral guidelines, strategies and toolkits have also been developed

Examples of different types of good practice AMS policy mechanisms and their potential considerations for further integration and replication across AMS are presented in Table 7.

Table 7: Examples of NbS integration into policy mechanisms for sharing/replication across AMS

AMS	Example NbS policy mechanism	Considerations for further integration / replication
Cambodia	**Cambodia Climate Change Strategic Plan (2024-2033)** Cambodia's recently published CCCSP 2024-2033 builds on key national development and climate policies and provides key strategic outcomes, targets and activities for NbS in the country, with a clear prioritisation for immediate-term (2024-2028) actions on NbS. Strategic Outcomes 1.5 (mitigation) 'increase urban green space and urban greening programme utilising NbS' and 2.1 (adaptation) 'strengthen resilience measures across all economic sectors', outline an activity to develop and implement NbS targets, guidelines and platforms for urban areas. Strategic Outcome 2.3 also outline priorities for strengthening ecosystem conservation and SNRM across the Mekong River, Tonle Sap and other landscapes, via NbS. Specific budget estimates and funding mechanisms are outlined for these activities.	*The CCCSP has successfully identified specific actions, targets and indicators on NbS activities for two priority sectors – urban and natural resource management*
Indonesia	**Indonesian Biodiversity Strategy & Action Plan (IBSAP) 2025-2045** Direct mention of NbS and ecosystem-based approaches, including as one of the IBSAPs strategic issues to 2045 - *the relationship between biodiversity management and climate change* (noting emphasis on NbS for climate change mitigation and biodiversity)	*Provides the foundation to further align NbS with climate and disaster approaches co-benefits (building on mitigation priorities)*
Lao PDR	**Developing an Urban EbA policy guideline** Building urban resilience through EbA to combat flood and drought risk is an increasing priority for Lao PDR. Efforts are now moving away from traditional hard infrastructure towards integrated EbA approaches. There is however not yet a standard or tool to guide relevant stakeholders on urban EbA principles, steps, interventions, ecosystem valuation, financing options and M&E approaches. Under the GCF project *Building resilience of urban populations with ecosystem-based solutions in Lao PDR*, MoNRE and project partners are developing a new step-by-step Urban Ecosystem-Based Adaptation guideline for policymakers and technical experts. The guideline will become the first NbS-related guideline in Lao PDR and is anticipated to cover wetland and urban stream restoration and management and sustainable urban drainage systems. The guidelines will include components such as (i) options for urban EbA measures, (ii) possible priority intervention sites, (iii) estimates for EbA cost-benefit analysis, (iv) EbA M&E, (v) EbA financing strategies.	*The initiative will launch the first sectoral NbS/EbA guidelines in Lao PDR – and support scaling up of urban EbA across the country. This will set a precedent for the development of further sectoral guidelines, for example on river basin planning, agriculture, transport and energy infrastructure, and other priority sectors.*

Philippines	**National NbS policy mechanism** An Administrative Order is under development by DENR, on institutionalising and integrating NbS into environmental and natural resource policies, plans, programs and projects. The mechanism aims to: • Establish general criteria on NbS standards across key sectors and ecosystem types • Promote the mainstreaming of NbS into the policies, plans and projects of DENR and other agencies • Strengthen the planning, implementation, monitoring and evaluation of NbS projects • Establish a cross-agency NbS Technical Working Group	*Provides a good practice example for AMS in establishing a national policy approach and mandate for NbS through formal governance mechanisms.*
Thailand	**13th National Economic and Social Development Plan** NbS is directly integrated in Thailand's 13th NESDP 2023-2027 under *Milestone 11: Thailand Can Mitigate Risks and Impacts of Natural Disaster and Climate Change*. Other NbS-aligned concepts and approaches also support the integration of measures into policy and practice across other key milestones, including *Milestone 8: Thailand has smart cities as well as safe and liveable regions with sustainable growth*, which provides a rationale for urban NbS, including via sponge city models.	*Inclusion of NbS within national development policy provides a strong foundation for cross-sectoral integration. More detailed actions and alignment is required to outline approaches for NbS integration*
Viet Nam	**National Adaptation Plan** Viet Nam's NAP has direct mention of NbS and EbA for adaptation, including highlighting (i) NbS/EbA models for forest ecosystems and (ii) NbS/EbA models for climate resilient infrastructure. NbS/EbA highlighted as resource mobilisation and engagement need for climate resilience. There is a specific M&E indicator under resilience and capacity (indicator 2.5) on *number and scale of climate change adaptation ecosystem-based models deployed*	*Viet Nam's future climate policies can aim to build on the priority sectors identified to establish detailed targets and action aligned with ecosystem-based models, linked to its M&E mechanisms*

3.3. Stocktake of NbS activities across the ASEAN region

ASEAN is addressing NbS-related practices through various ecosystem-led initiatives, including NbS guidelines, climate resilience, sustainable natural capital, supporting greening policies, and targeted conservation efforts. The ASEAN Heritage Parks (AHP) Programme recognises biodiversity-rich protected areas that also help to mitigate climate change, with a focus on effective management and capacity building. The ASEAN Green Initiative (AGI) was launched by ACB and the ASEAN Secretariat in 2021 and sets objectives for restoring forests and promoting ecosystem restoration, through the planting of 10 million native trees across AMS over 10 years. Meanwhile, the EnCORE Wetlands project, in partnership with the Global Environment Centre, focuses on conserving carbon-rich wetlands and peatlands to reduce emissions and enhance biodiversity, with pilot sites in Malaysia and the Philippines.[11]

[11] ACB, 2025

Outside of ASEAN, various regional initiatives have been established to foster and support regional NbS implementation and upscaling, considering and adopting transboundary approaches to NbS, emphasising the role of cross-border cooperation for socio-economic and ecological outcomes.[12] Continued attempts have been made on transboundary IWRM, fisheries, protected area management, and forest and wetland restoration opportunities across terrestrial borders in the Mekong region (Cambodia, Lao PDR, Thailand and Viet Nam). Several of these have included the development of projects agreements, task forces, MoU's, and permanent joint steering committees, supported AMS governments or by institutions such as the Asian Development Bank (ADB) and Mekong River Commission (MRC). Marine restoration efforts have been undertaken involving both the Philippines and Indonesia, including regional initiative supported by the Coral Triangle Initiative on coral reef restoration and MPAs.

Box 1: Example regional, transboundary institutions supporting NbS action across ASEAN

Apart from ASEAN-led initiatives, several regional platforms and mechanisms support NbS action for CCM, CCA and DRR, engaging AMS and neighbouring regions to foster collaboration and implement joint solutions.

- The **Asian Development Bank (ADB)** is Asia and the Pacific's leading climate bank that is designing and delivering innovative NbS initiatives and financial instruments to enhance climate resilience, ecosystem health, and well-being. ADB adopts a programmatic approach to integrating NbS at both policy and project levels through policy support, project implementation, financing mechanisms, and knowledge exchange. Supporting all project stages, from identification to execution, ADB takes a cross-sectoral approach, promotes bankable solutions such as sponge cities, and aligns its NbS strategy with financing and policy frameworks within its climate action plan. ADB launched the Nature Solutions Finance Hub (NSFH) at COP28 in December 2023 to scale up NbS through innovative financing approaches. It aims to mobilise USD 5 billion for NbS projects, with at least 15% from the private sector, to enhance biodiversity conservation and climate resilience across Asia and the Pacific.
- The **Coral Triangle Initiative (CTI)** is a multilateral partnership that supports member countries (Indonesia and Philippines from this study) on activities related to marine biodiversity conservation and sustainable fisheries. Their approach includes EbA for fisheries management, enabling climate resilient marine protected areas (MPA), and nature-based tourism.
- The **Mekong River Commission (MRC)** is an intergovernmental organisation that supports riparian countries for the sustainable development and management of the transboundary Mekong River Basin, including driving integrated water resource management (IWRM), NbS for flood and drought management (e.g. watershed restoration and wetland rehabilitation), and opportunities for hybrid measures, such as hydropower and irrigation infrastructure. The MRC and its members have established transboundary IWRM 'Joint Projects', including in the 9C-9T sub-basin (shared between Cambodia and Thailand) and the 3S sub-basin (shared between Cambodia, Lao PDR and Viet Nam), both of which prioritise NbS actions for flood and drought resilience.
- **Partnerships in Environmental Management for the Seas of East Asia (PEMSEA)** is a regional UN partnership programme that supports sustainable coastal and marine management, including through integrated coastal management (ICM), climate resilience and blue economy. PEMSEA's blue carbon program supports NbS for CCM/CCA, including for mangroves, seagrass meadows, and tidal marshes.

Other regional forums and organisations supporting NbS initiatives include Asia-Pacific Economic Cooperation (APEC), Asian Disaster Preparedness Center (ADPC), World Bank, IUCN Asia and SCeNe Coalition.

[12] For instance, at the transboundary scale, Lao PDR's shift from deforestation to reforestation has led to the displacement of deforestation for farming purposes to neighbouring countries within the Mekong region. At the national scale in Indonesia, crop displacement is a frequently noted trade-off of forest conservation efforts, as agricultural expansion moves to new areas when forest lands are protected (Miller and Taylor, 2023).

3.4. Stocktake of NbS policy to practice across AMS priority risk areas and sectors

Whilst NbS is a relatively new concept in ASEAN, associated measures and practices, such as peatland and wetland rehabilitation, mangrove restoration, and sustainable forest management, are not new. Practical NbS activities vary across sectors, with urban, coastal and water resource measures the most common. NbS is largely at the **pilot** and **demonstration** stage across most sectors in ASEAN (Figure 5). In addition, the implementation of an ecosystem approach to NbS for climate and disaster resilience – aligned with IUCN NbS standards and criteria – is largely facilitated by international schemes and local partners.

The diversity and complexity of Southeast Asia's landscapes demand a localised and integrated approach to NbS. Proven practical examples that provide a range of benefits include forest restoration in upland watersheds, the expansion of urban green spaces and associated green infrastructure, mangrove restoration in coastal areas and wetland restoration. There is increasing evidence for landscape scale flood-based agriculture (e.g. mangrove-shrimp or mangrove-fish livelihood models) and the integration of NbS and hybrid measures into river basin planning and management.

Successful initiatives include both top-down, government-led and integrated or bottom-up, inclusive, and participatory governance models, that involve local communities, private sector stakeholders, and government agencies in the planning and implementation of NbS. Local ownership and influence are seen as a key lesson and success factor for NbS projects.

The range of NbS practices across AMS is complex, yet several commonalities exist. Four key findings and priority areas for practical NbS are presented in Figure 4.

Figure 4: NbS practical stocktake across example priority sectors

River basin planning and IWRM as a key NbS approach

Across Mekong countries and in the Philippines, the importance given to NbS/EbA as a strategic approach for **river basin planning** and management has been growing in recent years. Various pilot schemes are being undertaken across AMS. AMS have shown leadership in establishing national NbS policy guidelines, including **EbA guidelines for the water sector** in Thailand and **river basin management and NbS guidelines** in the Philippines.

Coastal and marine NbS priorities

Coastal NbS, in particular **mangrove** restoration, is recognised as a priority across all coastal AMS, and is often formulated as a biodiversity, mitigation and climate and disaster resilience co-benefit approach. Other coastal NbS measures include intergrated mangrove-aquaculture systems and seasgrasses, but many have not been integrated extensively to date.

Urban and land use NbS priorities

The mainstreaming of NbS for **urban resilience** (e.g. sponge city concept and establishing green spaces and corridors), is an increasingly common priority across all 6 AMS, although it is also still largely at the demonstration/piloting phase.

Urban land use planning **NbS/EbA guidelines** are under development in Lao PDR and Cambodia.

Future upscaling for under-represented sectors - NbS-led agriculture and infrastructure practices

Despite some conceptual designs, guidelines and piloting, widespread on-the-ground integration of NbS into **agriculture** practices and **infrastructure** developments (hybrid) is still in its infancy, despite being a consistent policy priority.

Across AMS, the translation of NbS policy to practice – or conversely from good practice demonstration to policy mainstreaming – has taken various approaches across priority sectors. Successful practices often depend on factors such as (i) the presence of comprehensive sectoral NbS guidelines and toolkits, (ii) demonstration of replicability and upscaling potential through NbS pilot projects, (iii) ensuring effective participatory and inclusive governance models, and (iv) learning and sharing good practices or failures through M&E reviews.

Examples of such good practice approaches and their potential considerations for replication across AMS are presented below. Case study examples demonstrate the versatility of NbS applications. Initiatives vary from coastal, riverine and urban to rural agricultural and forest landscapes, and from large-scale national approaches to local community-led interventions.

The integration of approaches and priorities can be applied across a range of scales, sectors, stakeholder groups and landscapes, and as such can be replicated across other AMS.

Table 8: Examples of good practice approaches for NbS integration for replication across AMS

AMS	NbS policy to practice example	Future outlook and considerations for replication
Cambodia	**Sector guidelines for green infrastructure** To increase the integration and application of ecosystem-based approaches for infrastructure resilience, MRD, NCSD and MoE published a suite of guidance products. The *Green Rural Infrastructure Guide (a CCA guide for the rural infrastructure sector)* provides guiding principles and insights for policy makers, planners and practitioners on how to apply climate resilience and green infrastructure to their planning and project implementation. Identified measures include field trenches, mangrove planting, and vegetated check dams. Similarly, the MPWT, NCSD and MoE published a *Green Infrastructure Guide* for public works and transport sectors on green adaptation measures for climate resilience, such as constructed wetlands, drainage corridors, green roofs and rain gardens. A *Water Resources Adaptation* Guide, focusing on NbS/green infrastructure for IWRM, was also published by MoE and NCSD (with MOWRAM).	*Going forward, the guidelines may require update and monitoring by NSCD/MoE (or integration with other policies), along with capacity building for relevant line agencies and practitioners. The new MLMUPC NbS policy guideline will also build on many of the measures outlined in the NCSD/MoE guidance products.*
Indonesia	**Hybrid solutions via building with nature (BwN) in coastal Java** BwN is an ICZM approach that supports resilience through hybrid NbS combining smart engineering, ecosystem restoration, and sustainable land use. In Demak, north-central Java, BwN has been applied to combat coastal erosion along a 20km stretch to safeguard 70,000 people via a public private partnership led by the government. A major governance challenge in Indonesia is the absence of coherent ICZM policies to support NbS/EbA, whilst combating ecosystem degradation and land conversion. The BwN initiative has helped integrate such measures into local development plans, budgets, master plans, and national policy frameworks (e.g., NDC and NAP). On-the-ground demonstration interventions have included permeable dams to trap sediment, mangrove rehabilitation, river restoration to mitigate saline intrusion and support sediment input to the mangrove area, capacity building, and livelihood diversification.	*The approach offers an alternative to conventional hard infrastructure and has the potential to be scaled up across northern Java, and Indonesia more widely, as well as coastal areas of other AMS.*

Lao PDR	**Developing an Urban EbA policy guideline** Building urban resilience through EbA to combat flood and drought risk is an increasing priority for Lao PDR. Efforts are now moving away from traditional hard infrastructure towards integrated EbA approaches. There is however not yet a standard or tool to guide relevant stakeholders on urban EbA principles, steps, interventions, ecosystem valuation, financing options and M&E approaches. Under the GCF project *Building resilience of urban populations with ecosystem-based solutions in Lao PDR*, the programme will also support the development of an 'EbA knowledge hub', hosted by the National University of Lao PDR (NUoL), with activities to support (i) joint research of EbA, (ii) the establishment of an EbA database, (iii) a curriculum for graduate students, and (iv) an interactive exhibition centre at NUoL.	*NbS Hubs are becoming increasingly important for coordinating stakeholder groups, knowledge, evidence base and priority setting. Many AMS are considering or in the process of establishing working groups or NbS Hubs for this reason.*
Philippines	**Mainstreaming NbS approaches across priority river basins** The Philippine government recognises the importance of ecosystem approaches for IRBM. Several initiatives have focused on the application of IWRM, ecosystem services valuation and EbA measures across major river basins. DENR, under the GIZ-supported *Ecosystem-based management and ecosystem services valuation in two river basins in the Philippines* project, are applying networks of EbA measures, including riverbank restoration and agricultural buffer zones linked to protected areas, along with ecosystems services valuation in Visayas and Mindanao. The DPWH, supported by ADB, are developing basin-level flood risk management master plans that integrate NbS strategies, feasibility studies and detailed designs. The initiative has developed a guidance brief – *Nature-Based Solutions for Flood Risk Management Revitalizing Philippine Rivers to Boost Climate Resilience and Enhance Environmental Sustainability*, showcasing natural river management and lessons for cost-effective approaches.	*Experiences from these projects should aim to further embed NbS into water resource management policies and plans at the national and local level, linked to DENR's newly launched Integrated Water Resources Management Plan (2024), as well provide framing for future EbA work in the sector*
Thailand	**Mainstreaming NbS into river basin planning policy and practice** Thailand's water resource management has long relied on top-down, hard infrastructure solutions such as dikes, canals, and reservoirs, over locally driven, smaller-scale networks of ecosystem-based or hybrid initiatives, many of which are ill-equipped to withstand extreme floods. In response, ONWR	*Evidence-based studies such as these should be used to inform policy development and EbA integration, as well as design standards, cost norms and M&E frameworks at the national and local level in Thailand*

	and partners, are increasingly promoting NbS approaches with IWRM and IRBM for flood and drought resilience, building on community-driven and traditional knowledge. ONWR has collaborated with partners including GIZ and IUCN to develop an *Ecosystem-based Adaptation Code of Practice (CoP) Compendium for the Thai Water Sector*. The EbA CoP outlines guidance on EbA interventions, technical approaches, and cost-benefit analysis. A *Guidebook for the Design and Implementation of Ecosystem-based Adaptation in River Basins in Thailand* has also been developed, providing a step-by-step guide for mainstreaming EbA. A GIZ-led study has also examined *EbA effectiveness and impact - Lessons from Piloting Monitoring & Evaluation of Ecosystem-based Adaptation in Thailand's Water Sector,* applying M&E approaches for EbA, using on-the-ground pilot measures as examples.	
Viet Nam	**EbA approaches for coastal urban resilience in Viet Nam** Urban areas impacted by coastal hazards have become a particular focus of NbS demonstration projects across Viet Nam, with the country prioritising smart, resilient eco-cities. Various initiatives are being supported for piloting NbS, from Can Tho in the Mekong Delta, central coastal cities such as Hue, to Haiphong port in the north. Prioritised NbS have included riverbank restoration, mangrove restoration, wetland conservation and sustainable livelihood models (e.g. mangrove-shrimp farming). These provide good practice approaches for integrating into policies and plans.	*A key next step is mainstreaming such interventions into local climate action plans, and the development of coastal NbS guidelines and platforms to share and build coastal NbS knowledge, evidence and learning.*

4 Common Policy Barriers, Enablers and Gaps for NbS Integration across ASEAN

4.1. Common barriers and challenges for NbS policy integration across AMS

Nine overarching policy barriers – either consistent or common across AMS – have been identified based on the national policy analysis and stakeholder consultations.[13] These are considered across (i) institutional, (ii) policy, and (iii) technical barriers and are presented below.

Institutional barriers

1. **Lack of dedicated institutional capacity or unclear mandate on lead agency responsible for NbS (often):** Mandates for establishing, implementing and monitoring NbS policies and interventions are often not clear at the national and sub-national level. This in turn leads to a lack of clear mandate and differing NbS approaches, both within each AMS and across ASEAN. Mandates may be unclear where climate change agencies are situated outside of environment ministries (e.g. the Philippines), or where the planning ministry is a strong lead (e.g. Indonesia).
2. **Lack of prioritisation and awareness on NbS applications at the national and sub-national level (consistent):** There is a perceived lack of awareness by policymakers on the complexity of NbS approaches and concepts across most AMS - including their long-term approach and multiple benefits - as well as a lack of capacity to establish NbS programme/project portfolios. In some cases, stakeholders may be working on NbS-related activities, without being aware that these may be reportable under NbS targets (see practical barriers). In terms of alignment, stakeholders in countries such as the Philippines and Thailand often refer to NbS for resilience priorities, whereas in Indonesia, the focus may be on mitigation.
3. **Preference for hard infrastructure solutions for CCA and DRR (consistent):** Most resilience led interventions focus on hard infrastructure solutions for immediate short-term gains. Knowledge, technical capacities and standardised practices on traditional infrastructure are well known across AMS. On the contrary, budget allocations, standards and practices for NbS are not yet common or mainstreamed across sectors, and often take years to demonstrate benefits.

Policy barriers

1. **Limited NbS integration across key national development and climate policies (often):** NbS is not directly referenced or integrated into many of AMS national development policies (excluding Cambodia, Philippines, and Thailand), and is only referred to in just over half of key climate policies (e.g. NDC and NAP). Climate policies tend to focus on mitigation, built infrastructure or technical measures, and often do not directly address NbS measures. Where present, policies do not provide easily measurable/relevant NbS targets, actions or indicators.
2. **Lack of clear national NbS principles, criteria and robust targets (consistent):** Across all AMS, there is no formalised enabling framework and effective targets for NbS. Planning, regulatory, and policy documents on climate change and NbS are not guided by a framework on NbS integration, making it difficult for line agencies to systematically set NbS-related objectives, activities and targets, and discern relevant information. The Philippines are currently leading the development of a national NbS policy mechanism.
3. **Lack of cross-sectoral NbS policy recognition and integration (often):** Analysis has shown that most AMS have not mainstreamed NbS across most sectoral policies (with the exeption of the Philippines), largely due to a lack of capacity or development priorities. Sectoral planning often operates in 'silos' and consider primary policy objectives and economic development interests (e.g. agriculture and infrastructure sectors). This is a barrier as NbS are often attractive precisely because they meet multiple objectives and produce various co-benefits, addressing cross-sectoral priorities in an integrated manner.

[13] These are typically consistent with barriers identified in existing ASEAN policy briefs and reports

Practical barriers

1. **Lack of technical standards, demonstration projects and scientific evidence base for NbS upscaling (often):** Across ASEAN, NbS/EbA concepts are relatively new, and it takes time to accumulate case studies and an evidence base to demonstrate effectiveness, benefits and cost-benefit norms. In general, there has been a lack of scoping and implementation of comprehensive NbS/EbA projects and programmes in ASEAN to date. Only a few AMS have established sectoral guidelines on NbS (e.g. Thailand's EbA guide for the water sector), although it is not clear the degree to which these gudelines are being followed or implemented.
2. **Lack of integrated and local particpatory approach to NbS (often):** Due to the lack of formalised definition and approach to NbS across ASEAN, many registered NbS policies and projects are often focused on siloed/individual outcomes (e.g. afforestation or mangrove restoration), rather than demonstrating an integrated ecosystem-based approach of multiple NbS across networks and landscapes. Where implemented, initiatives are often discrete, unconnected, or do not have sustainable long-term support, including with effective participation and recognition of local stakeholders. Despite recognition of the importance of local communities and their knowledge for NbS design and implementation, there are significant gaps in their strategic inclusion.
3. **Challenges with integrated NbS reporting, monitoring and evaluation frameworks or systems (consistent):** A common barrier to effective NbS application and recognition of national efforts is the absence of comprehensive NbS datasets, information platforms, indicators, and reporting mechanisms within national climate M&E or MRV systems. This leads to an under-representation and reporting on NbS activities (or in some cases, false reporting).

4.2. Common enablers for NbS policy integration across AMS

Seven overarching policy enablers have been identified based on the national policy analysis and stakeholder consultations. These are divided into (i) institutional, (ii) policy, and (iii) technical enablers and are presented below.

Institutional enablers

1. **General recognition of NbS as a key tool for sustainable development, building climate and disaster resilience, restoring biodiversity, and enhancing local livelihoods:** During stakeholder meetings and online policy reviews, NbS was widely acknowledged as a fundamental approach, or optional tool, to advance multiple agendas and build resilience.
2. **Strong institutional interest and collaboration opportunities in advancing a national NbS agenda:** During almost all stakeholders consultations with AMS (apart from Indonesia), NbS integration into policy and practice was highlighted as a national priority - including the development of national policy mechanisms - both within climate and environment ministries, and also across a number of key sectors. In addition, there is already strong support from development partners, NGOs and research institutions to mainstream NbS into policy and development a wideranging portfolio of NbS projects.
3. **Importance of local and indigenous participation and knowledge and gender equity roles for NbS action:** Most key policies and projects across AMS refer to the importance of leveraging NbS to support local livelihoods and also champion local activities over the longer-term. Through adaptation related principles, many AMS are also increasingly taking a gender-responsive approach, through participation in policy decision making processes and on-the-ground action.

Policy enablers

1. **Integration of NbS into national development plans:** The analysis has demonstrated that integrating NbS-related priorities into the text of AMS development plans - such as has been done in the Philippines and Thailand - drives the sectoral mainstreaming of NbS, including for CCA and DRR. It is precisely such embedding of the NbS concept in policy that is needed to overcome the 'silos' of sectoral planning observed in nearly all AMS, and that act as a barrier to developing NbS to address CCA and DRR).
2. **Strong climate policies, with a spotlight on NAPs (along with NDCs and NBSAPs) for NbS integration:** Almost all AMS have established strong international and national climate-related policy commitments. The policy analysis has highlighted that - outside of the national socio-economic development plans - NAPs are one of the main strategic policy mechanisms where NbS are widely included as a CCA and DRR mechanism. Engagement with NAP development processes, where they are currently under way, present one of the main opportunities for integrating NbS for CCA and DRR into policy.

Practical enablers

1. **Sectoral focus to build rationale and evidence base for NbS successes and piloting:** Whilst they may be difficult to locate and collate at the regional level, there is now a strong evidence base for the successful implementation of NbS projects within ASEAN. The next step is scaling up these pilot projects to establish substantial regional, provincial and national projects and programmes. In particular, attempts are particularly being made and successes are being shown in sectors that can be deemed as 'low hanging fruit for NbS'. Leading areas include the water (river basin planning) and urban sectors, with NbS mainstreaming efforts demonstrated across all Mekong countries and in the Philippines. Key priorities in these sectors include the rehabilitation of riverine, wetland and forest landscapes, as well as urban greening.
2. **Leveraging opportunities for hybrid solutions:** As outlined, CCA and DRR policy and practice in AMS countries tends to focus on traditional grey infrastructure. However, this may offer a more opportune first step to integrate nature through a hybrid approach, as opposed to a 'pure' ecosystem-based approach.

4.3. Common gaps and future needs for NbS policy integration across AMS

Nine overarching policy gaps and future needs have been identified based on the national policy analysis and stakeholder consultations. These are divided into (i) institutional, (ii) policy, and (iii) technical needs and are presented below.

Institutional gaps and needs

1. **Clarification on lead agency(ies) role and mandate for NbS policy decisions:** NbS is multi-functional and cross-sectoral in nature; however, NbS needs a 'home' agency or cross-sectoral committee to lead NbS policy formulation and coordination. Whilst linked to climate priorities (e.g. NDC), NbS policy sometimes falls under the remit of environment or planning divisions. All AMS need to provide clarity on lead agency roles and responsibilities for steering NbS decisions at the national level, and/or ensure effective collaboration, if shared by more than one agency.
2. **A platform or space for NbS policy dialogues and capacity building:** During stakeholder consultations, a common gap and concern noted was the lack of formal space to share knowledge, best practices and priorities for NbS, across both the national and international level. There is a need for countries to establish national cross-sectoral and multi-stakeholder NbS platforms, which could be led by government agencies or relevant national institutions, to support coordination, innovation and capacity development activities on NbS.
3. **Greater transboundary engagement and collaboration on NbS:** Four of the six AMS reviewed in this study are located in the Mekong region. Many of the key risks and priorities areas are transboundary in nature - such as flood risk associated with the Mekong River system (headwaters to delta) and its tributaries. Despite many successful engagements, there is potential for the development of regional frameworks (e.g. facilitated by ASEAN), action plans and collaborations on key topics e.g. transboundary IWRM and river basin planning, protected area management and ecological corridors, headwater forest restoration, NbS, at the national and sub-national provincial scale.

Policy gaps and needs

1. **National-level policy framing on NbS principles and approaches to guide implementation:** One of the main priorities for all AMS is the need for greater framing and clarity on national/contextualised NbS principles, criteria and standards, coordination roles and implementation mechanisms. This can be led by government policy mechanisms (i.e. a new mechanism or within existing key policies).
2. **Better integration of NbS into national development and climate policies:** As highlighted, a key enabler for intergrating NbS across sectoral policy is a reference to NbS/EbA principles, approaches, targets and actions in national socio-economic development plans, as well as being a core approach in key climate policies. In many AMS this is still a gap.
3. **Better integration of NbS into key sectoral and sub-national policies:** Reviews have highlighted the need for more comprehensive and robust NbS principles, approaches, targets and actions to be included across all priority CCA/DRR-aligned sectoral policies and activities.

Practical gaps and needs

1. **Guidance on approaches to integrate NbS into sectoral practices:** Most AMS have already established, or are in the process of developing, some form of sectoral NbS - or a subset of NbS - guideline. A key gap going forward is translating these guidelines (and associated targets) into practical action on the ground. This ultimately requires the development of more detailed technical standards, piloting, training and capacity building and knowledge sharing approaches.
2. **Better integration of NbS targets and indicators into national M&E and MRV systems:** When establishing or updating climate-related M&E and MRV systems, it is critical that AMS incorporate targets and indicators on NbS-related outcomes. This can support more effective recording and monitoring of NbS activities (see below) - yet many AMS have not yet developed or integrated such targets/indicators to date.
3. **A centralised platform for policymakers and other stakeholders to record NbS-aligned studies, projects, tools and other activities:** Through the platforms, M&E and MRV systems or other means, it is important that AMS colate information on NbS activities, successes and failures to learn from, inform and update policies, plans, targets, cost norms and budget commitments, as well as new research priorities and scientific evidence.

5 ASEAN NbS Policy Recommendations

This section presents a range of key recommendations that can be used to frame and guide how ASEAN and its Member States can collectively (and individually) mainstream NbS into national and local policy mechanisms and implementation practices by 2030 and beyond. The objective of these recommendations is to assist AMS with integrating NbS into key policy decisions and practical actions, to enhance resilience. The recommendations build on discussions with AMS, as well as the barriers, enablers and gaps identified in this report. It provides governments and other relevant stakeholders with a concise summary of strategic areas and priority actions to consider and build on within their own complementary NbS-related policy frameworks, plans and systems. It is hoped that these recommendations can inform ongoing discussions and the prioritisation of NbS actions across ASEAN, that can be implemented going forward, aligned with AMS priorities.

The section is organised into **three** overarching regional-wide (ASEAN) and **five** national level (AMS) strategic opportunities and associated priority actions. Whilst the recommendations are interconnected, they do not need to be considered as a step-by-step process. However, the identified priority actions typically follow a linked approach, leading from one action to the next. Many AMS will be well-advanced (or in the process of progressing) with some of the priority actions, yet opportunities may exist to strengthen and build on them. The recommendations of this report should be considered in parallel with the ASEAN NbS Finance report.

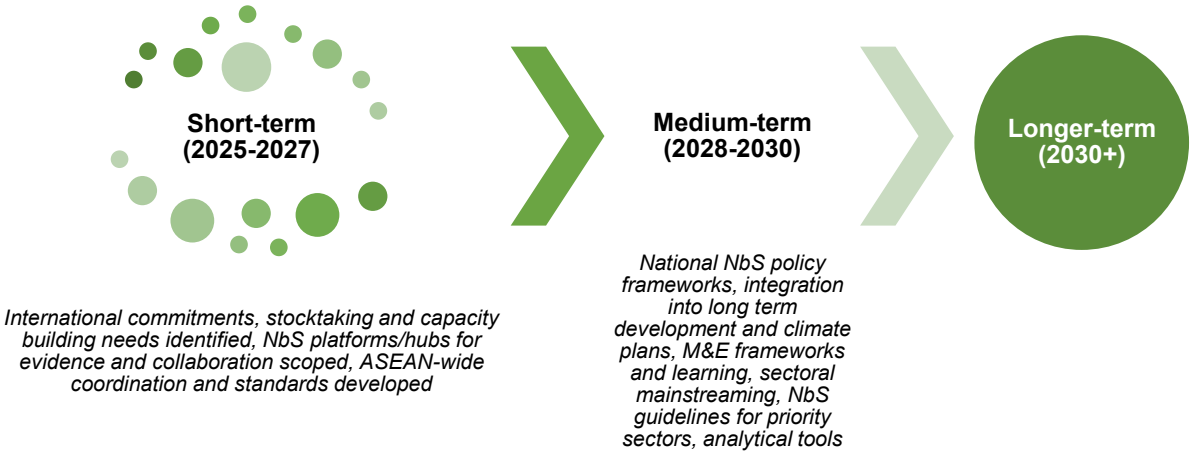
5.1 Policy objectives

An ASEAN-wide approach to mainstreaming NbS across key policies and strengthening cross-sectoral governance and regional cooperation, working towards the following policy objectives towards 2030 and beyond:

1. Strengthen ASEAN's role as a regional platform for knowledge-sharing, capacity-building and collaboration on NbS policy guidelines and tools.
2. Integrate comprehensive NbS principles, targets and actions into core international climate and biodiversity commitments (NDC, NAP, NBSAP).
3. Establish NbS policy frameworks, principles, targets, standards and criteria to guide NbS mainstreaming and action planning across sectors and stakeholders.
4. Integrate NbS into national development plans and key climate, disaster and environment policies (with effective targets).
5. Identify priority sectoral policies, plans and projects for NbS and integrate NbS into the policies of these sectors. Develop relevant strategies, guidelines and standards to guide locally-led NbS implementation across these sectors.
6. Build the awareness, knowledge and capacity of AMS to develop robust and measurable NbS criteria, targets and indicators, aligning with or within existing development and climate M&E systems.
7. Develop multi-stakeholder and cross-sectoral national NbS knowledge-sharing platforms to support priority setting, capacity building and M&E.
8. Advance scientific research, strengthen the evidence base, establish platforms and collate lessons learnt to inform NbS policy and practice mainstreaming.
9. Develop enabling and analytical tools to identify and map opportunities for innovative NbS plans and projects.

Timeline: Opportunities are presented across a range of strategic short-term and medium-term priorities over a 5-year period, working towards the integration of NbS across AMS policy landscapes. The identified opportunities aim to align with the ASEAN Climate Change Strategic Action Plan (ACCSAP) 2025-2030 and other key global and regional policies.

Figure 5: Recommended timeline for action to 2030



5.2 Framework for strategic opportunities and priority actions

NbS policy opportunities are divided into two components – (i) overarching ASEAN-wide regional strategic opportunities (implemented by ASEAN Secretariat) and (ii) nationally-relevant AMS strategic opportunities (implemented by national government).

The ASEAN opportunities are grounded in governance, mainstreaming, innovation, capacity building and knowledge sharing principles, supported by global and regional AMS-AMS exchanges. The AMS opportunities are focused on national-level decisions, mechanisms and interventions to build the institutional and policy framework, cross-sectoral mainstreaming, capacity, platforms and M&E systems to mainstream NbS.

Figure 6: NbS policy opportunity focus areas (regional ASEAN (top) and national AMS (bottom))

Further details on each strategic opportunities and priority actions within these is presented below. Each section comprises three components – (i) a brief overview and context, (ii) a summary of possible priority actions AMS could implement (if they haven't already), to make progress on the strategic areas, and (iii) good practice examples or resources for implementing one or multiple actions.

5.3 Implementation and governance

5.3.1 Cross-cutting enabling mechanisms

Each of the proposed ASEAN and AMS strategic opportunities are grounded in and apply the following four cross-cutting enablers to support the scaling-up and success of NbS actions.

Figure 7: Cross-cutting enabling mechanisms for NbS policy action

1. Governance & policy frameworks
Mechanisms to integrate NbS into institutional and policy decisions

2. Technical standards, tools & innovation
Supporting guidance, tools and information platforms to expedite the mainstreaming of NbS into policy and practice

3. Skills & capacity building
Working with governments and other stakeholders to build awareness, capacity and skills to foster NbS policy integration

4. Stakeholder engagement, collaboration & knowledge exchange
Multi-stakeholder engagement and partnerships, including with communities, to share experiences and support with policy dialogues and prioritisation activities

5.3.2 Enabling stakeholders and actors

Opportunities are largely targeted and aligned with national government responsibilities, targets, activities and priorities. Other stakeholder groups, including local communities, NGOs, research organisations, development partners and financial institutions are critical to supporting the implementation of many of the strategic opportunities and priority actions.

5.4 ASEAN strategic opportunities and priority actions

5.4.1 ASEAN Strategic Opportunity A: Regional NbS frameworks and guidelines

Context and importance: A clear gap and challenge is the lack of consistent and formal alignment on NbS principles, targets and approaches across ASEAN. ASEAN is well placed to establish a common framework to guide national action across AMS, including but not limited to common definitions, principles and approaches, criteria, types and applicability of NbS, integration options, targets, policy, financing and M&E mechanisms.

Objective: *To build AMS capacity and provide guidance and standards on NbS implementation across ASEAN and a framework to inform national NbS policy frameworks and action plans.*

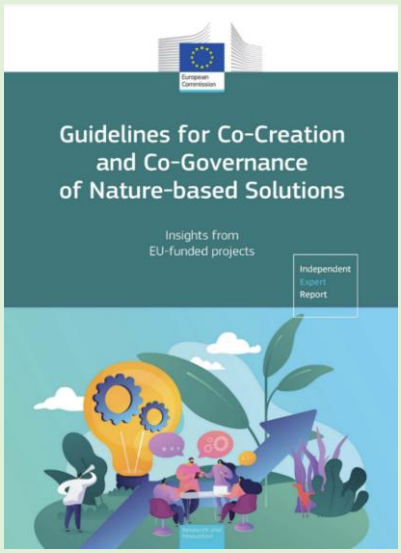
Priority actions:

Short-term action (2025-2027)

1. Develop an ASEAN NbS framework/guideline to provide guiding NbS principles, approaches, standards and targets
2. Establish relevant regional sectoral strategies, guidelines and toolkits
3. Consultations and capacity building workshops on NbS framework and prioritisation of activities

Box 2: Good practice example - Experiences with developing regional guidelines from the EU

The EU have developed extensive guidelines on NbS to guide national action and implementation. The reports identify knowledge gaps and outlines strategies to address them, including the need for stronger governance, cross-sector collaboration, and capacity-building to mainstream NbS into Europe's climate and biodiversity policies.



The reports can be found on the EU NetworkNature NbS knowledge database here.

5.4.2 ASEAN Strategic Opportunity B: Cross-sectoral coordination & action planning of NbS across ASEAN units, policies & practices

Context and importance: NbS is increasingly a key priority for ASEAN, across its platforms, plans, and engagement with AMS. There is a need for ASEAN to develop a coherent approach and plan of action towards NbS across its core work areas. The ACCSAP presents an opportunity to integrate NbS, aligned with existing policies. A future action plan can further mainstream NbS across policy and practice.

Objective: *To establish an ASEAN NbS action plan and mainstream NbS into relevant ASEAN platforms, plans, and working group activities.*

Priority actions:

Short-term action (2025-2027)

1. Mainstream NbS into the ACCSAP, including possible targets and actions
2. Develop an NbS action plan for ASEAN (building on ACCSAP) to identify gaps, opportunities and priorities for NbS mainstreaming activities going forward

Medium-term action (2028-2030)

1. Integrate NbS across ASEAN units and relevant AWG-led policies, strategies, workplans and outputs

Box 3: Good practice example - The role of the ASEAN Working Group on Climate Change and ASEAN Centre for Biodiversity for NbS coordination and mainstreaming

ASEAN Working Group on Climate Change (AWGCC) is the main responsible body for the implementation of the programmes and activities of this Strategic Priority Area. AWGCC serves the key purpose of establishing linkages with the UNFCCC and coordinating activities within AMS on climate change and related themes, including NbS. AWGCC are also currently leading the development of the ACCSAP. Other relevant sectoral bodies and/or partners are consulted for cross-sectoral and cross-pillar activities.

For biodiversity and natural resources, the ACB supports NbS-related mechanisms. Clarifying roles, responsibilities, collaborations and opportunities to integrate NbS as a strategic approach across ASEAN climate change and biodiversity priorities can be explored via future action planning, also building on the ACCSAP process.

5.4.3 ASEAN Strategic Opportunity C: Regional NbS knowledge exchange & innovation platform

Context and importance: ASEAN is well-positioned to establish a regional NbS platform, hub, working group or taskforce to bring together perspectives, expertise and tools from across the region. Such a platform can drive knowledge exchange and innovation, including on the action planning priorities, capacity needs, collaboration opportunities, existing good practices, M&E systems and tools needed to scale up and mainstream NbS. Such a platform could bring together multi-stakeholder groups across AMS, from public to private sector representatives.

Objective: *To establish an ASEAN NbS platform or taskforce to facilitate action planning and priority setting, awareness raising, capacity building, knowledge exchange and innovation on mainstreaming NbS into policy and practice.*

Priority actions:

Short-term action (2025-2027)

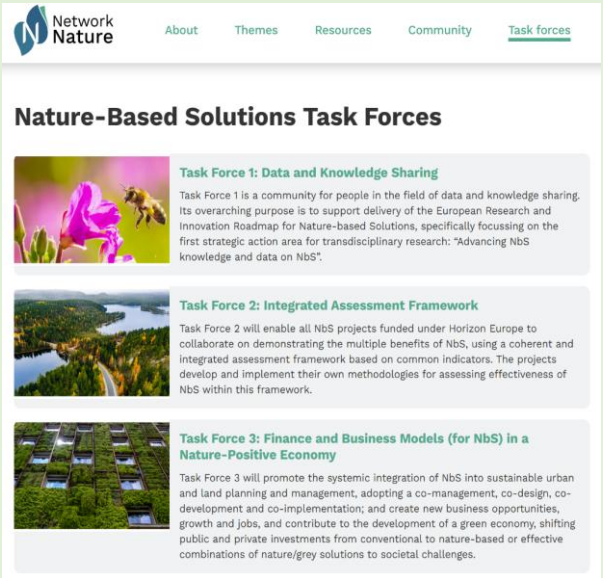
1. Establish a cross-ASEAN platform, hub, taskforce or working group on NbS
2. Identify operational procedures, members and observers
3. Develop centralised online ASEAN NbS webpage (platform) and collect existing policy briefs, good practice case studies and toolkits
4. Identify, map and stocktake existing good practice resources, technical guidelines, capacity building needs and knowledge sharing opportunities (building on those identified in this study)
5. Undertake capacity building needs and knowledge sharing workshops for key stakeholders

Medium-term action (2028-2030)

1. Undertake more targetted capacity building and knowledge sharing workshops for priority areas, across multi-stakeholder groups
2. Develop and expand sector and stakeholder guidelines and toolkits on NbS (based on identified priorities)

Box 4: Good practice example - The EU NetworkNature NbS Hub to supporting regional coordination and national action

NetworkNature is a hub resource for the NbS community, creating opportunities for local, regional and international cooperation to maximise the impact and spread of NbS. It will maintain and add to a diverse and science-based repository of evidence on NbS, strengthen partnerships and foster new relationships (including through TWGs) for a clear, strategic framework for action. This includes translating regional coordination to national implementation, through an EU network of national NbS Hubs. These help to create a nuanced understanding of NbS across Europe by looking into local specificities of NbS both in terms of the context and finding ways to better address local challenges.



Further details on NetworkNature can be found here.

5.5 AMS-level Strategic Opportunities and Priority Actions

5.5.1 AMS Strategic Opportunity 1: NbS integration into development, climate and biodiversity policy mechanisms

Context and importance: A key enabler and first step for integrating NbS into policy mechanisms is the framing of guiding NbS principles, targets and actions in country NDCs, NAPs and NBSAPs.

In the medium-term (based on policy renewal timelines) and where not yet present, AMS need to identify entry points for integrating NbS into key national guiding policies. This includes national socio-economic development plans and as a core approach within key cross-cutting national climate, disaster and environmental strategies (as present/relevant, and building on those in NDC, NBSAP and NDC). These can often provide a foundation for sectoral and local policy NbS integration and prioritisation. Where already present, AMS should build on existing references to develop more comprehensive and robust cross-sectoral policy targets and action.

NbS targets and actions may be linked to a national NbS framework (see Opportunity 2).

Objective: *To integrate NbS principles and targets into international policy commitments and key national development, climate, disaster and environmental policies.*

Priority actions:

Short-term action (2025-2027)

1. Integrate robust and measurable NbS principles, targets and actions into NDCs, NBSAPs and NAPs (and associated reporting mechanisms)

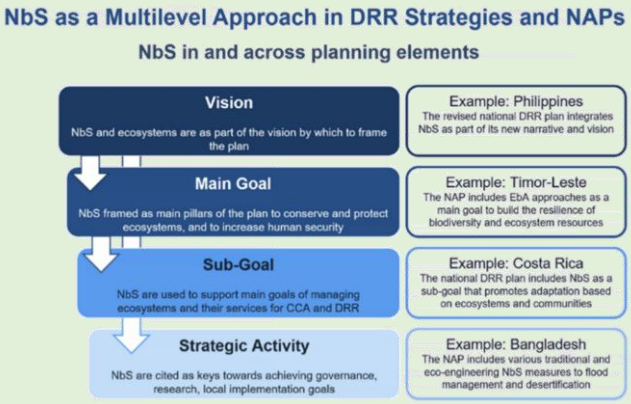
Medium-term action (2028-2030)

1. Integrate robust and measurable NbS principles, targets and actions into core national climate, disaster and environment plans and strategies
2. Integrate robust and measurable NbS principles, targets and actions into national development plans

Box 5: Good practice example - Integrating NbS into DRR policy mechanisms

NbS can be integrated into policy and planning across different scales and elements, and different countries approach it differently. The Philippines, amongst other countries, has integrated NbS as part of its DRR strategy.

Vision: Based upon lessons learned that integrating environmental management with resilience-building measures by harnessing ecosystem services is key for DRR plans, including through blue-green infrastructure and promoting locally led NbS processes.



Strategic activity: NbS are framed as a key output of various strategic activities in support of DRR goals and sub-goals. This includes conducting ecosystem stocktaking, mainstreaming ecosystem services into national and local development planning, conservation and restoration, urban greening, promoting sustainable integrated area development, promoting sustainable community resource-based enterprises/livelihood programs, and formulating an Integrated River Basin Management and Development Plan.

Further details can be found here as part of UNDRR's toolkit on NbS for DRR and CCA (2024)

5.5.2 AMS Strategic Opportunity 2: NbS policy mechanism or framework, with coordination and action planning

Context and importance: Whilst NbS is a policy priority for AM, it is often advanced without national context-specific framing or guidance. One of the main priorities for AMS is the development of a national NbS policy mechanism (e.g. framework or circular) to guide NbS integration and implementation across national and sub-national institutions and sectors. This could comprise a singular harmonised framework with ministry-specific ownership at the national level, as well as outlining subsidiary cross-sectoral and local responsibilities. Alternatively, this could be integrated into existing policy documents/mechanisms (e.g. NAP).

Key actions should include but not be limited to: (i) establishing NbS principles, criteria and standards, (ii) establishing national coordination operations, activities and collaborations on NbS, (iii) promoting NbS mainstreaming and integrated target setting across policies, plans and projects of relevant sectors and line agencies, (iv) support the M&E of NbS targets/indicators and initiatives. AMS are at varying stages of establishing coherent approaches to NbS – with different levels of prioritisation – requiring distinctive actions and targets.

Objective: *To develop national NbS policy frameworks, integrated targets and action plans to set the context and scope for comprehensive national development, climate and biodiversity integration and prioritisation across policy and practice.*

Priority actions:

Short-term action (2025-2027)

1. Stocktake existing nature-based approaches, targets and actions in national policies and plans
2. Identify the mandate/focal point for NbS policy development and coordination
3. Develop national NbS policy framework (or similar), with targets and action planning
4. Establish a government-led cross-sectoral NbS committee or technical working group (or integrate NbS activities into existing national biodiversity or climate committees or working groups)

Medium-term action (2028-2030)

1. Advance national technical standards, guidance, tools and capacity building activities

Box 6: Good practice example - Developing an NbS policy framework in the Philippines

NbS is explicitly referenced in the overarching PDP. Like other AMS, the Philippines faces challenges with defining and framing NbS across its core policies, programmes and projects. It is understood that a new Administrative Order (AO) is under development by DENR, led by the Climate Change Services (CCS) Department, on the *Institutionalization and Integration of Nature-Based Solutions (NbS) in Environment and Natural Resources (ENR) Related Policies, Plans, Programs and Projects*. It is understood that the AO will become a 'mother policy', initially focusing only on DENR-specific policies, plans and projects, with aims to:

- Establish general criteria on NbS standards across key sectors and ecosystem types
- Promote the mainstreaming of NbS into the policies, plans and projects of DENR and other agencies
- Strengthen the planning, implementation, monitoring and evaluation of NbS projects
- Establish an NbS Technical Working Group, comprising multiple line agencies

When it comes into force, this will be applied across all ENR-related policies, plans, programs and projects of the government, civil society, the private sector, and development partners.

5.5.3 AMS Strategic Opportunity 3: NbS integration in national priority sectoral policy and practice

Context and importance: Through NbS policy frameworks and cross-sectoral platforms, AMS need to work towards the mainstreaming of NbS across all priority sectoral policies and projects. This includes both the inclusion of NbS in sectoral plans and strategies, and technical guidelines, standards and project planning systems. As with national development/climate plans, AMS need to identify entry points (linked to policy renewal timelines) for integrating NbS into key sectors (e.g. agriculture, water resources, coastal, urban).

Where already present, AMS should build on existing sectoral policy guidance to develop a comprehensive range of priority pilots/demonstration projects to demonstrate NbS effectiveness and upscaling potential, as well as build institutional awareness and capacity to implement such projects.

Objective: *To integrate NbS into priority sectoral policy and guidance mechanisms and translate policy into practical action.*

Priority actions:

Short-term action (2025-2027)

1. Policy stocktake and identify entry points to mainstream NbS into priority sectoral policies and plans (building on action plan/national targets)
2. Develop sectoral NbS strategies, guidelines and identify priority areas for key sectors

Medium-term action (2028-2030)

1. Advance sectoral technical standards, cost norms and capacity building activities
2. Launch a range of strategic/priority pilot and demonstration projects for key sectors

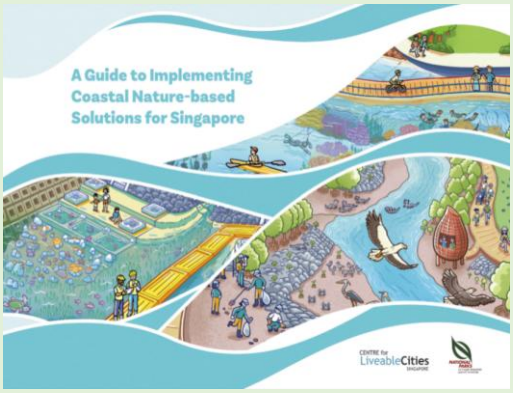
Box 7: Good practice example - Translating national policy to sectoral action – establishing integrated NbS programmes and guidelines for Singapore's marine sector

The Singapore Green Plan 2030 is a movement to advance the national agenda on sustainable development, establishing concrete targets by 2030, including NbS-related ambitions for expanding green spaces and networks and enhancing coastal resilience through nature-based and hybrid solutions.

The country's flagship ABC *Waters Programme (Active, Beautiful, Clean Waters),* led by PUB (Singapore's National Water Agency) has set a precedent for mainstreaming NbS for urban flood management, water purification and ecosystem restoration, including via their Design Guidelines.

More recently, PUB and NParks have established Singapore's *Coastal Protection and Flood Management Research Programme*, with integrated NbS a core component. This has paved the way for implementing coastal NbS including perched beaches with seagrasses and mangroves fronting a seawall. A guideline for implementing coastal NbS aims to provide background information, typology examples and guiding principles for coastal NbS.

PUB is also developing a new Code of Practice (COP), to provide a set of common design standards and O&M requirements to guide design, construction and O&M of coastal infrastructure.



Further information on the Singapore NbS guidelines can be found here

5.5.4 AMS Strategic Opportunity 4: National monitoring, tools and innovation

Context and importance: AMS are increasingly integrating NbS targets and indicators within both their national development and climate M&E systems, to support reporting and monitoring of NbS implementation. Measurable and comprehensive NbS-related targets, indicators, and codes now need to be further integrated into AMS frameworks, plans and strategies, in particular across priority sectors.

AMS are also demonstrating the feasibility and viability of NbS approaches, through pilot projects, and the sharing of experiences with relevant stakeholders and potential partners on the project MEL performance, evidence, technical feasibility, and opportunities for replication. Through government or external-led platforms, it is important that AMS build the evidence base by collating information on NbS projects, successes, and failures, to inform and update policies, plans, targets and technical standards.

Objective: *To establish innovations in tools, reporting mechanisms and information platforms, to support the integration of NbS into policy mechanisms and MEL systems.*

Priority actions:

Short-term action (2025-2027)

1. Stocktake and collect existing targets, indicators and project inventories and integrate into national climate (and development) M&E/MRV systems or knowledge platforms

Medium-term action (2028-2030)

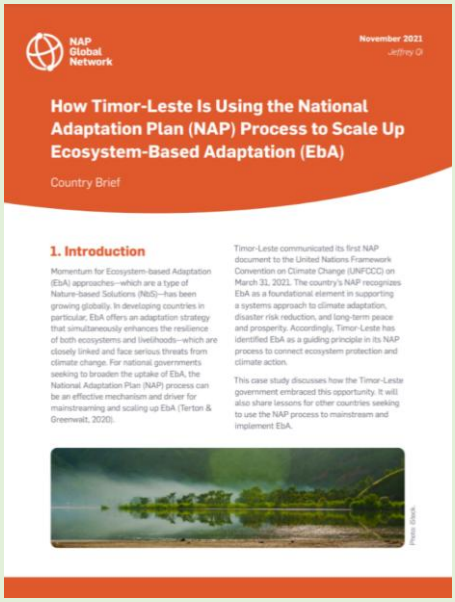
1. Develop and integrate more robust NbS targets and indicators into M&E systems
2. Develop and pilot NbS reporting mechanisms and tools linked to the M&E system across priority sectors

Box 8: Good practice example - Developing EbA inclusive indicators and M&E system for Timor-Leste's NAP

Timor-Leste communicated its first NAP document to the UNFCCC in 2021. The country's NAP recognises EbA as a foundational element in supporting a systems approach to CCA, DRR, and long-term peace and prosperity. EbA is a guiding principle in its NAP process to connect ecosystem protection and climate action.

Guiding Principle 8 of the NAP focuses on *ensuring accountability and performance by building an evidence base for EbA solutions as part of an overall NAP M&E system.* The NAP acknowledges that the lack of continuous observation and monitoring networks poses a barrier to building an evidence base for adaptation actions, including EbA. The NAP team is establishing a national monitoring, evaluation, reporting, and learning (MERL) framework, along with specific indicators and targets for each sector, many aligned with NbS to track progress and ensure accountability.

Further details on the lessons learnt from Timor-Leste's NAP process and M&E development can be found here.



5.5.5 AMS Strategic Opportunity 5: National NbS platforms for capacity and knowledge exchange

Context and importance: Multi-stakeholder networks and platforms can support improved coordination, action planning and priority setting, knowledge exchange and capacity development activities on NbS. They can also drive scientific research needs, technological advancement, financing and innovation to inform NbS priorities.

There is an opportunity for countries to establish national cross-sectoral and multi-stakeholder NbS platforms - or 'hubs' - led by government agencies or relevant national institutions.

Objective: *To provide a space for multi-stakeholder discussions and collaborations on NbS policy needs and advancing practical action and possible innovative solutions.*

Priority actions:

Short-term action (2025-2027)

1. Establish cross-sectoral multi-stakeholder NbS platforms, hubs or taskforces
2. Undertake national NbS stocktake and collect evidence from NbS demonstration projects across priority sectors and stakeholder mapping
3. Identify research, development, innovation and capacity gaps and priorities

Medium-term action (2028-2030)

1. Establish online, open-access NbS knowledge sharing and learning portals, or integrate into existing climate platforms
2. Advance thematic guidance and standards, tools and knowledge exchange/capacity building activities

Box 9: Good practice example - Establishing national NbS hubs

NetworkNature and other partners have supported the establishment of various national NbS knowledge hubs across European countries.

The *NbS Italy Hub* was established with a mission to promote the conservation of natural areas and the restoration of degraded ecosystems through NbS capable of transforming Italian cities and environments integrated with nature and biodiversity. The main objective is to implement NbS in civil and administrative practices, permeating local and national legislation, through cooperation between researchers, the private sector, local administrations and communities. *More details can be found here.*

The *India Forum for Nature-based Solutions,* which was established by Cities4Forests and is largely steered by NGOs, is a platform focused on accelerating NbS across urban India. It is India's first urban NbS consortium that aims to raise awareness and scale up the adoption of NbS across cities. *More details can be found here.*

5.6 Recommendations for implementation and way forward

Eight high value NbS strategic opportunities have been identified and recommended for ASEAN and AMS to explore in the next five years and beyond. These include possible actions for AMS to review, consider and build on, aligning these with its own national implementation plans, strategies and frameworks, and considering their existing capacity, support network and prioritisation/strategic importance given to the integration of NbS into policy mechanisms at this point in time. As new evidence, perspectives, stakeholders, commitments and opportunities for NbS integration arise in the coming years, the priority actions outlined in this report may evolve.

Annex 1: ASEAN and AMS Policy Profiles

1. ASEAN NbS Policy Profile

1.1. ASEAN governance and coordination on NbS

The governance and mandate arrangements for NbS across ASEAN units are wide-ranging and complex, focused across areas under the ASEAN Socio-Cultural Community (ASCC) and the ASEAN Economic Community (AEC); tow of the three main pillars of ASEAN.

The ASCC includes an environmental dimension. ASEAN Senior Officials on Environment (ASOEN), who meet annually, provide strategic guidance in advancing ASEAN cooperation on environment. Under the ASOEN, subsidiary thematic Working Groups lead the technical and operational implementation of their respective Working Group Action Plans. There are seven working groups to oversee the priority areas of ASEAN environmental cooperation, almost all of which have alignment and/or priorities on NbS:

- ASEAN Working Group on Nature Conservation and Biodiversity (AWGNCB)
    - The AWGNCB is supported by the ASEAN Centre for Biodiversity (ACB) which facilitates cooperation and coordination on the conservation and sustainable use of biodiversity across ASEAN.
- ASEAN Working Group on Coastal and Marine Environment (AWGCME)
- ASEAN Working Group on Water Resources Management (AWGWRM)
- ASEAN Working Group on Environmentally Sustainable Cities (AWGESC)
- ASEAN Working Group on Climate Change (AWGCC)
- ASEAN Working Group on Chemicals and Waste (AWGCW)
- ASEAN Working Group on Environmental Education (AWGEE).

The working groups also provide support to relevant cross-sectoral issues beyond the environment sector (and beyond the ASCC) such as on the issues of climate resilience, disaster risk, cities and urban resilience, agriculture and forestry. Outside of the ASCC, the AEC also comprises several key sectoral bodies/committees engaged on NbS related activities, in particular Food, Agriculture, and Forestry, led by the Senior Officials of ASEAN Ministers on Agriculture and Forestry (SOM-AMAF) and ASEAN Ministers on Agriculture and Forestry (AMAF). Key working groups relating to NbS include:

- ASEAN Working Group on Forest Management (AWG-FM)
- ASEAN Working Group on Social Forestry (AWG-SF)
- ASEAN Working Group on Forest and Climate Change (AWG-FCC).

The ASEAN Committee on Disaster Management (ACDM) was first established in 2003 to facilitate regional cooperation in addressing problems associated with disaster management, and enable individual members to fully realise their development potentials as well as to enhance the mutual ASEAN spirit

ASEAN Smart Cities Network (ASCN), established in 2018, which is a collaborative platform where cities from the 10 AMS work towards the common goal of smart and sustainable urban development.

1.2. Regional stocktake of NbS policy within ASEAN

1.2.1. ASEAN NbS initiatives

ASEAN is addressing NbS-related practices through various ecosystem-based initiatives, including climate resilience networks, sustainable natural capital, supporting greening policies, and targeted conservation efforts via the ASEAN Centre for Biodiversity (ACB).

The ACB is a key NbS actor and leads several key initiatives to protect the region's rich ecosystems and enhance NbS. The ASEAN Heritage Parks (AHP) Programme recognises biodiversity-rich protected areas that also help to mitigate climate change, with a focus on effective management and capacity building. The ASEAN Green Initiative (AGI) was launched by ACB and the ASEAN Secretariat in 2021 and sets objectives for restoring forests and promoting ecosystem restoration, through the planting of 10 million native trees across AMS over 10 years. Meanwhile, the *EnCORE Wetlands* project, in partnership with the Global Environment Centre, focuses on conserving carbon-rich wetlands and peatlands to reduce emissions and enhance biodiversity, with pilot sites in Malaysia and the Philippines. The *Effectively Managing Networks of Marine Protected Areas in Large Marine Ecosystems in the ASEAN Region* (ASEAN ENMAPS), is designed to enhance the management of marine protected area networks and corridors within targeted large marine ecosystems in Indonesia, the Philippines, and Thailand. [14]

Several NbS studies and report have been commissioned across the various ASEAN Major Sectoral Bodies/Committees and Working Groups, focusing broadly across NbS sectors and stakeholders, but also on agriculture and forestry.[15] The reports have identified possible areas to build frameworks, guidelines financing mechanisms and capacities for implementing and upscaling NbS in the region, along with critical challenges and ways forward.

The AWG-SF, with FAO and other partners, are currently developing an ASEAN guideline and toolkit on NbS/EbA in the forestry sector (one of the first ASEAN-led sector guideline on NbS).

ASEAN's Climate Resilience Network (ASEAN-CRN) is an existing platform for regional exchange, particularly for sharing information, experiences, and expertise around climate-resilient agriculture, and has supported various studies and discussions on NbS. The ASEAN Environmental Knowledge Hub also provides a platform for public access to knowledge and enables information sharing on the emerging environmental issues in ASEAN.

The ACB is also in the process of establishing an NbS knowledge sharing webpage on NbS tools (including a catalogue of measures relevant to ASEAN) and policy briefs.

1.2.2. Regional and transboundary NbS initiatives

Transboundary initiatives have been undertaken across most AMS considered in this study. Continued attempts have been made on transboundary IWRM, fisheries, protected area management, and forest and wetland restoration opportunities across terrestrial borders in the Mekong region (Cambodia, Lao PDR, Thailand and Viet Nam). Several of these have included the development of projects agreements, task forces, MoU's, and permanent joint steering committees, supported AMS governments or by institutions such as the Asian Development Bank and Mekong River Commission. Marine restoration efforts have been undertaken involving both the Philippines and Indonesia, including regional initiative supported by the Coral Triangle Initiative on coral reef restoration and MPAs.

[14] ACB, 2025

[15] GIZ, 2022; ASCC, 2024; ASCC, 2025.

Box 10: Regional, transboundary institutions supporting NbS action across ASEAN

Apart from ASEAN-led initiatives, several regional platforms and mechanisms support NbS action for CCM, CCA and DRR, engaging AMS and neighbouring regions to foster collaboration and implement joint solutions.

1. The **Asian Development Bank (ADB)** is Asia and the Pacific's leading climate bank. ADB is designing and delivering innovative NbS initiatives and financial instruments to enhance climate resilience, ecosystem health, and well-being. ADB adopts a programmatic approach to integrating NbS at both policy and project levels through policy support, project implementation, financing mechanisms, and knowledge exchange. Supporting all project stages, from identification to execution, ADB takes a cross-sectoral approach, promotes bankable solutions such as sponge cities, and aligns its NbS strategy with financing and policy frameworks within its climate action plan. ADB launched the Nature Solutions Finance Hub (NSFH) at COP28 in December 2023 to scale up NbS through innovative financing approaches. It aims to mobilise $5 billion for NbS projects, with at least 15% from the private sector, to enhance biodiversity conservation and climate resilience across Asia and the Pacific.
2. The **Coral Triangle Initiative (CTI)** is a multilateral partnership that supports member countries (Indonesia and Philippines from this study) on activities related to marine biodiversity conservation and sustainable fisheries. Their approach includes EbA for fisheries management, enabling climate resilient marine protected areas (MPA), and nature-based tourism.
3. The **Mekong River Commission (MRC)** is an intergovernmental organisation that supports riparian countries for the sustainable development and management of the transboundary Mekong River Basin, including driving integrated water resource management (IWRM), NbS for flood and drought management (e.g. watershed restoration and wetland rehabilitation), and opportunities for hybrid measures, such as hydropower and irrigation infrastructure. The MRC and its members have established transboundary IWRM 'Joint Projects', including in the 9C-9T sub-basin (shared between Cambodia and Thailand) and the 3S sub-basin (shared between Cambodia, Lao PDR and Viet Nam), both of which prioritise NbS actions for flood and drought resilience.
4. **Partnerships in Environmental Management for the Seas of East Asia (PEMSEA)** is a regional UN partnership programme that supports sustainable coastal and marine management, including through integrated coastal management (ICM), climate resilience and blue economy. PEMSEA's blue carbon program supports NbS for CCM/CCA, including for mangroves, seagrass meadows, and tidal marshes.

Other regional forums and organisations supporting NbS initiatives include Asia-Pacific Economic Cooperation (APEC) Asian Disaster Preparedness Center (ADPC), World Bank, IUCN Asia.

1.3. ASEAN Policies on NbS

ASEAN has embraced NbS to address climate challenges, although it has yet to be formally defined and institutionalised throughout ASEAN. ASEAN has embraced NbS to address climate challenges, although it has yet to be formally framed and institutionalised throughout ASEAN. Table 9 outlines some of the key ASEAN-level policies and frameworks that aim to promote the integration and uptake of NbS across the region. As demonstrated, NbS is well referenced and integrated across key ASEAN Division policies and frameworks – with 10 of 12 (80%) of reviewed ASEAN policies referring to NbS/EbA priorities and activities, relating to stocktaking, capacity building, awareness raising, research/science and investment. Going forward, NbS will also be a key component of the ASEAN Climate Change Strategic Action Plan 2025-2030 (ACCSAP).

Table 9: Examples of key NbS integration into ASEAN-level policy mechanisms

Policy/ framework area	No of policies analysed	No of policies mentioning NbS	Key policy referencing NbS (with examples) / Comments
Environment Division (ASCC)	6	6 (100%)	ASEAN Biodiversity Plan (2024, ACB) Target 8 Strategies and Key Actions: • Stocktake on NbS and/or ecosystem-based approaches in the ASEAN, including ASEAN Heritage Parks • Develop an e-learning course on NbS Target 12 Strategies and Key Actions – 'Enhance Green Spaces and Urban Planning for Human Well-Being and Biodiversity': • Promote awareness of NbS – its benefits, challenges and considerations Target 20 Strategies and Key Actions – '*Strengthen Capacity-Building, Technology Transfer, and Scientific and Technical Cooperation for Biodiversity*': • Promote capacity development on NbS
Other Divisions (under APSC, AEC, ASCC or crosscutting networks)	5	4 (80%)	ASEAN Socio-Cultural Community Strategic Plan (ASCC, 2025) Objective 11.2 (Strategic Measure 11.2.3): • Enhance mitigation and adaptation to climate change and reduce vulnerability by promoting climate resilience and adaptive capacity, implementing NbS and ecosystem-based approaches through active engagement of the ASEAN Community-based Climate Action Objective 12.2 (Strategic Measure 12.2.3): • Intensify efforts in utilising and harnessing the full potential of science, technology, and innovation in strengthening climate, disaster resilient infrastructure, and NbS for sustainable development to realise ASEAN as a centre of excellence for disaster management
Food, Agriculture and Forestry Division (AEC)	1	(0%)	-

1.4. Barriers and enablers to NbS integration

As highlighted, there is a distinct lack of commonality and alignment of NbS principles and approaches across ASEAN working groups and policy frameworks. This is supported by other ASEAN studies and review, which outline critical challenges for NbS implementation in the ASEAN region including lack of a common understanding and a framework or guideline(s) for NbS implementation; limited governance and regional strategies to integrate NbS; and insufficient scientific research, technical expertise, and financial incentives.

Figure 8: Barriers to NbS policy integration in ASEAN

1. Absence of ASEAN-led NbS definition, principles and approaches

Policy barrier: There is no formal framework outlining guiding principles and criteria for guiding NbS application across ASEAN units and AMS, providing a challenge for mainstreaming and implementation across AMS. Work on NbS lacks interconnectedness and is not guided by a framework or guideline, making it difficult for ASEAN actors.

2. Lack of robust NbS targets and actions

Policy barrier: Whilst it is apparent that NbS is well referenced across key ASEAN Division policies and frameworks (80% of reviewed policies), further work is required to provide more detailed NbS guidance, and ambitious and robust targets and actions for ASEAN and AMS. Current policies lack comprehensive and action-oriented NbS objectives and targets.

3. Lack of coordination and communication across ASEAN units, policies and practices on NbS

Institutional (capacity) barrier: A clear lead focal point for NbS coordination and action within ASEAN is missing. Challenges with dedicated capacity and coordination across the ASEAN Major Sectoral Bodies/Committees and Working Groups. Different groups have different NbS discussions, activities and priorities (requiring improved communication and alignment).

4. Lack of ASEAN projects and planning for NbS

Institutional (capacity) and technical barrier: There has been a lack of ASEAN-led formal NbS development initiatives and projects to date, although new projects and partnerships have been established in recent years (examples include partnerships with GIZ, the EU and Swiss/FAO). Projects seem somewhat ad hoc, rather than aligned with ASEAN strategic priorities and action planning for NbS.

Despite the identified barriers, there are several key enablers and successes that provide the foundation for NbS mainstreaming in ASEAN.

Figure 9: Enablers of NbS policy integration in ASEAN

1. ASEAN-wide NbS policy prioritisation

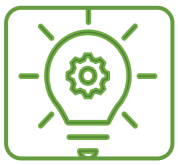
Policy enabler: As presented in this report, ASEAN has various frameworks that support and enable the uptake of NbS across ASEAN (to some degree, although with no overaching framework). NbS is seen as a key integrated priority for ASEAN and AMS

2. Cross-sectoral coordination on NbS

Institutional enabler: NbS is an increasingly strategic priority area within ASEAN for climate and biodiversity, across its various sectoral and thematic groups (from agriculture to climate) platforms, plans and engagement with AMS.

3. Transboundary collaboration & regional projects on NbS

Technical and institutional enabler: ASEAN has already supported a range of well established climate and biodiversity decisions and projects across AMS, influencing transboundary NbS-related cooperation, partnerships and action on the ground.



4. Regional knowledge platform

Technical and institutional enabler: ASEAN is already well positioned - through its existing units, channels and multi-stakeholder platforms - to foster capacity development, knowledge exchange, collaboration and research/innovation to scale up NbS in the region.

1.5. Opportunities for NbS integration

Based on stakeholder consultations and a stocktake of ASEAN policies and practices, several gaps have been identified that may provide opportunities to better integrate NbS priorities and actions through ASEAN.

1. ASEAN-wide policy framework and action planning

ASEAN is well placed to establish a common ASEAN-contextualised NbS framework to guide national action across AMS, with guidance for countries on NbS principles, concepts, criteria, approaches across sectors, policy and finance implementation mechanisms, M&E etc.

2. Cross-sectoral coordination and mainstreaming across ASEAN through NbS guidelines and targets

There is an opportunity for ASEAN to develop a coherent approach to NbS across its core work areas and sectoral practices. The ACCSAP (and other key policy mechanisms) presents an opportunity to better integrate NbS into its core climate working.

3. Fostering transboundary collaboration and regional projects on NbS

Opportunities could be explored to promote and establish transboundary mechanisms, partnerships and projects on NbS across relevant regions (e.g. Mekong and Coral Triangle) to foster increasing NbS implementation and upscaling.

4. Regional knowledge exchange, capacity development and tools via an ASEAN NbS platform

A regional NbS platform, hub or taskforce could bring together stakeholder perspectives and expertise and collate evidence and tools from across the region. Such a platform can drive knowledge exchange, capacity development and innovation, built on capacity needs, collaboration opportunities and systems needed to scale up and mainstream NbS. It can bring together stakeholders across different ASEAN groups and AMS.

Priority areas (as identified by ASCC, 2024) for the platform could include (i), NbS standards, tools, and policy and evidence-based practices; (2) scientific knowledge for dissemination; (3) developing technical capacity of local authorities and communities; and (4) technical NbS expertise in via stakeholder collaborations and partnerships.

2. Cambodia national policy profile

2.1. Climate hazard and disaster risk context and sector priorities

Cambodia has among the highest exposure to riverine floods globally (ranked fourth by the Inform Risk Index for flood exposure) and is faced with a series of other climate-related hazards, including drought, extreme heat, wildfires, and sea level rise (SLR). To a lesser extent, Cambodia also faces exposure to cyclones and landslides.[19]

Cambodia has been successful at achieving rapid growth and improvements for disadvantaged people, yet its current development path has increased its vulnerability to climate risks. While wealthy regions near the capital are expected to cope better with climate shocks, marginalised populations and regions in the Mekong and Tonle Sap basins, and the Northwest are at greater risk[16]. Here, the frequency and intensity of flood and drought are increasing, exacerbated by socio-cultural development challenges and urban expansion at high-risk locations. SLR, erosion, inundation, and saline intrusion risks also threaten coastal ecosystems, livelihoods, agriculture and infrastructure across its four coastal provinces.

Historic land-use patterns have led to high deforestation rates, with 30% forest loss in the past two decades, now standing at just under 40% of total land cover. This has reduced the ability of ecosystems to regulate climate shocks, while also curtailing natural carbon sinks. Approximately 80% of communities in rural areas depend on forest-based ecosystem services and non-timber forest products (NTFPs). Cambodia has also lost almost 45% of its natural wetland area, which has increased exposure to floods, droughts, and wildfires. These trends are beginning to shift, with efforts to improve agricultural resilience, develop the eco-tourism sector, strengthen protected area management, and rehabilitate forest and wetland landscapes, supporting the government's ambition for 60% forest cover by 2050.[17]

Cambodia's NDC 3.0 identifies the key economic and vulnerable adaptation sectors, including energy; industry; agriculture; FOLU; human health and WASH; Infrastructure; livelihood and ecosystems; disaster and climate risk management; social protection, social services and child protection; food systems; and air quality.

Table 10: Priority risk areas in Cambodia

Priority risk 1: flood risk

Flooding is Cambodia's most common and recurring disaster, with the country highly exposed to riverine floods, particularly along the Mekong and Tonle Sap floodplains – home to 80% of the national population

Priority risk 2: drought (and heat stress) risk

Variability in rainfall causes frequent droughts, with the southeast regions and Pailin province the most exposed.

Cambodia also faces high exposure to heat stress, and cities suffer from urban heat island effects

Priority risk 3: Ecosystem degradation (forest and wetland loss)

The country also faces threats to biodiversity and ecosystem services from land use changes (e.g. agricultural intensification), with at-risk priority ecosystems including forests and wetlands

Priority risk 4: Coastal-related risks

Flooding through SLR and inundation will increasingly threaten Cambodia's coastal zone, particularly along the northernmost portions.

Saline intrusion and water/agricultural impacts is particularly a concern near Kampot and Kep

[16] MoE, 2025
[17] World Bank, 2023a; World Bank, 2024a; Cambodian MoE, 2023

2.2. National NbS stocktake

NbS priorities and interventions in Cambodia have been increasing in recent years. The majority of government-led NbS activities for CCA and DRR in Cambodia are driven by the Ministry of Environment (MoE), Ministry of Land Management, Urban Planning and Construction (MLMUPC), Ministry of Tourism (MoT) and Ministry of Agriculture, Forestry and Fisheries (MAFF), including with support by development partners.

The NbS landscape in Cambodia is generally focused around IWRM and river basin planning, urban resilience and green infrastructure, climate-resilient ecotourism, agro-ecological and forest-based livelihoods, and coastal resilience. Along its coastline, NbS have been targeted across landscapes within Kampot, Kep and Koh Kong, focusing on mangrove restoration and coastal erosion.

Strategic inland regions for ecosystem resilience building – as highlighted by Cambodia's NDC and stakeholder consultations – include the Mekong River, Tonle Sap Lake/Basin and surrounding areas. Projects in in these critical landscapes are aiming to establish an ecosystem approach via NbS intervention across SNRM, watershed management, ecotourism, agriculture and fisheries, supporting biodiversity and generating sustainable livelihoods for marginalised communities. Cambodia has also expanded its protected area network, including community protected areas, to conserve critical habitats and support local governance. Recent urban NbS initiatives have included the Phnom Penh Sustainable City Plan 2018-2030 and pilot projects for NbS design and recommendations for land use zoning, blue-green infrastructure and establishing green parks and corridors as part of development projects.[18] In addition, the MLMUPC are currently leading the development of a national policy guideline on NbS for urban resilience, along with a national policy on public open space and green space.

In terms of CCM, Cambodia is one of the most advanced AMS for carbon credits, establishing strong policies and practices on REDD+ and other associated mechanisms, to protect forest-based livelihoods, support protection and restoration activities, and conserve biodiversity.

2.3. Policies and platforms relevant to NbS

The MoE are the lead ministry for climate and environmental policy and practice, with national NbS planning and implementation falling under its Department of Climate Change (DCC) mandate. The National Council for Sustainable Development (NCSD), established in 2015, is the inter-ministerial body that oversees climate and biodiversity action. The multisectoral Environment and Climate Change Technical Working Group (ECCTWG) plays a key role in coordinating the implementation of the country's environmental and climate aligned policies. Different ministries have also been allocated different sectoral NbS mandates. For example, the MLMUPC has recently launched a cross-ministerial technical working group, with MoE, MoT and others, to support the implementing of its NbS guideline and action plan.

2.3.1. International climate, disaster and biodiversity-related policy mechanisms

Cambodia submitted its NDC 3.0 in 2025, establishing adaptation commitments across 11 key sectors. The revised NDC integrates NbS/EbA targets, with a particular focus on coastal resilience, community livelihoods and climate-resilient ecotourism. NbS-related references are typically aligned with the IUCN Global Standard NbS *Criteria 1 (addressing societal challenges*). The recently published Cambodia Climate Change Strategic Plan (CCCSP) 2024-2033 serves as the countries National Adaptation Plan (NAP).

In its 2016 NBSAP, Cambodia directly highlights the importance of an ecosystem approach for biodiversity conservation, under its strategic objectives. It is understood that Cambodia is currently planning and drafting its third NBSAP as of mid-2025.

[18] Thorn et al., 2022

Table 11: NbS integration into international policy commitments in Cambodia

Policy document	Institution	Date and status	NbS relevance
NDC	NCSD / MoE	2025 (NDC 3.0)	**Direct** mention of NbS, EbA and ecosystem-based approaches under the Livelihoods and Ecosystems sector – adaptation measure no.: • 50 – increase coastal and MPAs by applying ecosystem-based approaches • 52 – *Strengthen community livelihood in Protected Areas, Community Forestry and Community Fisheries through ecotourism*, including through NbS ○ The strategy also promotes targets for climate-resilient ecotourism, with 20 community sites supported and 10 coastal administrations integrating NbS/EbA Mention of forest-ecosystem adaptation under measures 18&19 – forest ecosystem adaptation and resilience through restoring degraded forests and biodiversity ecosystems Various NbS-related approaches and concepts mentioned for CCM (e.g. nature-based flood control infrastructure, green infrastructure, agroecological practices, agroforestry, natural forest restoration) and CCA (e.g. green spaces for urban planning, IMSP, IWRM, IFLM, forest ecosystem adaptation, indigenous knowledge for climate-driven conservation)
NBSAP		2016 (NBSAP 2.0)	**Direct** mention of ecosystem-based approaches, highlighted as part of strategic objectives and key actions Various NbS-related approaches and concepts mentioned (e.g. ecosystem-based mitigation, natural infrastructure, ICZM, IWRM, landscape approach)

2.3.2. National crosscutting and sectoral policy mechanisms across priority risk areas

Development policy: Cambodia's Pentagonal Strategy Phase 1, Rectangular Strategy Phase 4 (RS-IV) 2019-2023 and National Strategic Development Plan (NSDP) 2024-2028 govern development priorities in the country. The Pentagonal Strategy explicitly highlights the use of NbS as a core approach under Side 2 (*Sustainable Management of Natural Resources, Cultural Heritages, and Tourism*) and Side 5 (*Ensuring Environmental Sustainability and Readiness for Responding to Climate Change, as well as Promotion of Green Economy*). Other development policies do not reference NbS/EbA and contain limited reference to associated principles (largely focused on sustainable natural resource management).

CCA, DRR and environment policies: Cambodia's key policy to steer strategic outcomes, targets and activities for NbS comes from its recently published CCCSP 2024-2033, with a clear prioritisation for immediate-term (2024-2028) actions on NbS, aligning with IUCN Global Standard for NbS *Criteria 1 (societal challenges)*.[19] Specific activities and aligned budgets are outlined for NbS for mitigation and adaptation programmes. Strategic Outcomes 1.5 (mitigation) 'increase urban green space and urban greening programme utilising NbS' and 2.1 (adaptation) 'strengthen resilience measures across all economic sectors', outline an activity to develop and implement NbS targets, guidelines and platforms for urban areas. Strategic Outcome 2.3 also outline priorities for strengthening ecosystem conservation and SNRM across the Mekong River, Tonle Sap and other landscapes, via NbS. Specific budget estimates and funding mechanisms are outlined for these activities. Cambodia also has an active gender and climate master plan and action plan.

In terms of environment, neither the Circular Strategy on Environment 2023-2028 (MoE, 2023) nor the Code on Environment and Natural Resources, MoE (2023) directly mention NbS/EbA, although they both have widespread reference to aligned approaches and interventions.

The newly launched National Action Plan for Disaster Risk Reduction 2024-2028 is the key DRR policy, however no priorities or actions related to NbS/EbA approaches are made.

Sectoral policies: Whilst four of the key NDC sectors reference ecosystem-related measures/priorities for CCA – (i) agriculture (and fisheries), (ii) FOLU, (iii) infrastructure, and (iv) livelihood and ecosystems – only the Strategic Planning Framework for Fisheries 2015-2024 mentions ecosystem-based approaches, and only in general reference to the CCCSP. Most sectoral plans, including for water, forestry and biodiversity, are somewhat outdated (published over 7-20 years ago), reflecting a general lack of alignment with up-to-date climate priorities, integrated ecosystem-based principles and the IUCN NbS Criteria.

Despite being a key at-risk sector and important for establishing IWRM and NbS-led flood and drought resilience priorities, the water sector is lacking CCA and NbS policy integration, although the 2015 Sub-decree on River Basin Management does provide legislation for IWRM and river basin planning and management.

There is also no specific law on sustainable coastal and marine development, nor is there a consistent policy for implementing integrated coastal management (ICM) or marine protected areas (MPA). This is a key gap for protecting marine ecosystems and their services (e.g. mangroves, seagrasses), as well as determining coastal CCA, DRR and NbS priorities – although both the NDC and CCCSAP do identify proposed targets and actions.[20]

To try and improve the integration of NbS for infrastructure resilience, the Ministry of Rural Development (MRD), MPWT, NCSD and MoE previously collaborated on the development of several sectoral mainstreaming guidelines (Box 11).

[19] According to Cambodia's BTR (MoE, 2025), 15 ministries have prepared climate change priority action plans aligned with the CCCSP.
[20] World Bank, 2023b

Box 11: The development of sector guidelines for green infrastructure in Cambodia

Relevant sectors and landscapes: Infrastructure, transport, urban, agriculture, water resources

NbS approach: Green infrastructure

Context and rationale: Infrastructure development in Cambodia has typically comprised hard engineered solutions, with limited consideration to the role of natural green infrastructure to build resilience. A range of NbS-related guidance products across different sectors were prepared by MoE and NCSD in 2019.

Policy intervention: To increase the integration and application of ecosystem-based approaches for infrastructure resilience, MRD, NCSD and MoE published a suite of guidance products. The *Green Rural Infrastructure Guide (a CCA guide for the rural infrastructure sector)* provides guiding principles and insights for policy makers, planners and practitioners on how to apply climate resilience and green infrastructure to their planning and project implementation. Identified measures include field trenches, mangrove planting, and vegetated check dams. Similarly, the MPWT, NCSD and MoE published a *Green Infrastructure Guide* for public works and transport sectors on green adaptation measures for climate resilience, such as constructed wetlands, drainage corridors, green roofs and rain gardens. A *Water Resources Adaptation* Guide, focusing on NbS/green infrastructure for IWRM, was also published by MoE and NCSD (with MOWRAM).

NCSD have also established the Green Building Code and Cambodia Green Building Council, which provides guidance on green infrastructure in the built environment.

Outlook: A key challenge with ensuring the awareness and implementation these guidelines is the lack of policy mandate and M&E of their effectiveness and application by relevant stakeholders. As ecosystem-approaches are further mainstreamed into policy and practice, the guideline will prove increasingly useful. Going forward, the guidelines may require update and monitoring by NSCD/MoE (or integration with other policies), along with capacity building for relevant line agencies and practitioners. The new MLMUPC NbS policy guideline will also build on many of the measures outlined in the NCSD/MoE guidance products.

Table 12: NbS integration into national policy mechanisms in Cambodia

Priority policy area	Relevant policy with reference to NbS	Direct (explicit) NbS reference and alignment
Climate	Cambodia Climate Change Strategic Plan 2024-2033 (NCSD, 2025) National Adaptation Plan Financing Framework and Implementation Plan (NCSD/MoE, 2017)	Direct mention of NbS/EbA, including under Strategic Objectives 1.5, 2.1 and 2.3 on urban greening and NbS and strengthening ecosystem conservation and SNRM via NbS Direct mention of ecosystem-based approach potential for forestry sector, and for potential funding sources for aquaculture and fisheries
Disaster	-	No direct/explicit reference
Environment	-	No direct/explicit reference
Development planning	Pentagonal Strategy Phase 1	Direct mention of NbS as a core approach under Side 2 (*Sustainable Management of Natural Resources, Cultural Heritages, and Tourism*) and Side 5 (*Ensuring Environmental Sustainability and Readiness for Responding to Climate Change, as well as Promotion of Green Economy*).
Water resources	-	No direct/explicit reference

Coastal & marine	-	No direct/explicit reference
Agriculture & fisheries	Strategic Planning Framework for Fisheries 2015-2024 (MAFF, 2015)	Direct mention of ecosystem-based approaches, referencing key climate change policy
Forests	-	No direct/explicit reference
Ecosystems & biodiversity	-	No direct/explicit reference

2.3.3. Climate change reporting, monitoring systems and evaluation tools

NDC tracking system: The MoE has established a detailed MRV and M&E system to track the progress of NDC implementation, through the online tracking tool, known NDC/LTS4CN. The tool is updated annually by line agencies to reflect their commitments and progress outlined in the NDC.[21] Suggested indicators by measure and sector have been formulated in partnership with the CCTWG. The tool tracks progress across various sectors and themes, including gender, youth, and the private sector. It serves as an effective communication resource and provides access to information necessary for national policy and reporting under the UNFCCC BTR. The NDC 3.0 includes several specific NbS-related activities and targets, for example a target for 10 coastal administrations integrating NbS.

Cambodian Climate Change M&E Framework: The Cambodian Climate Change M&E Framework goes beyond a focus just on NDC/LTS4CN and ensures national mainstreaming and alignment across Cambodia's National Strategic Development Plan, SDGs and CCCSP. It tracks national institutional readiness indicators (measuring institutional capacities to manage climate risks) and impact indicators covering adaptation and mitigation.[22]

[21] https://ncsd.moe.gov.kh/ndc-tracking/
[22] https://ncsd.moe.gov.kh/dcc/monitoring-climate-change-response

2.4. Barriers and enablers to NbS policy integration

As identified via stakeholder consultations and policy reviews, Cambodia faces several key challenges for the integration of NbS approaches and targets in national and sectoral policies.

Figure 10: Barriers to NbS policy integration in Cambodia

1. Lack of clarity and policy setting for NbS criteria and approaches

Policy barrier: There is no formal policy mechanism or framework to define and guide NbS activities in Cambodia. Whilst the new NDC and CCCSP provide good foundations, NbS principles, criteria and approaches are not detailed. Integrating NbS into regulatory and policy documents and across sectors are therefore not guided by a common and coordinated NbS approach, making it difficult for line agencies to identify clear concepts, priorities and actions

2. Lack of dedicated NbS institutional capacity and understanding

Institutional (capacity) barrier: Cambodia experiences challenges with horizontal and vertical coordination and capacity across both national and provincial sectoral agencies. Although Cambodia has prioritised ecosystem protection and restoration, there is a lack of dedicated in-house expertise working on NbS. In addition, as NbS is still a recent approach in Cambodia, there is a lack of existing knowledge and buy-in to develop NbS- focused plans and projects

3. Lack NbS integrated across sectoral policies

Institutional (capacity) and policy barrier: This review has demonstrated that there is insufficient NbS mainstreaming across sectoral policies, in particular across the priority sectors of (i) agriculture, (ii) water resources, (iii) coastal, (iv) urban development/ infrastructure and (v) biodiversity. There is also an absence of NbS in DRR policy. Also, whilst some guidelines exist, their degree of reference and implementation is unclear

4. Lack of NbS demonstration and follow up M&E

Technical barrier: The design and piloting of NbS interventions is at an early stage, with a lack of advanced project implementation to date. This results in an absence of national level data and stocktaking on NbS practices, costs and benefits, to inform policy, planning, buy-in and investment decisions. Where piloting has occcured, they have not typically undergone thorough monitoring, evaluation and learning, limiting upscaling and mainstreaming potential

Despite the identified barriers, there are several key enablers and successes that provide the foundation for NbS mainstreaming into Cambodia's policy landscape.

Figure 11: Enablers of NbS policy integration in Cambodia

1. Increasing interest and prioritisation of NbS within climate policy

Policy and institutional (capacity) enabler: NbS is well aligned with the development priorities and climate/biodiversity agenda in Cambodia - including being referenced in the Pentagonal Strategy Phase 1, NDC and CCCSP. There is also a real interest by various ministries in advancing plans and programmes on NbS, aligned with Cambodia's green pathway vision, including via the MoE, MLMUPC, MoT, MAFF and other focal agencies

2. Multi-stakeholder insights and platforms for NbS policy dialogues

Institutional enabler: There is a strong capacity for NbS evidence building and innovation via academia, development partners, NGOs and local communities in Cambodia, who are already well established in supporting NbS projects, capacity building, science base and demonstration potential in the country. The newly formed cross-sectoral NbS TWG, led by the MLMUPC, is also supporting government-led action planning and prioritisation on NbS for spatial planning and urban development

3. Experience with sectoral NbS policy guidelines and piloting

Technical enabler: Whilst sectoral policies do not typically provide reference to NbS principles or targets, the new NDC and CCCSP provides a foundation for embedding NbS into future sector policy updates. Several ministries have established NbS-related guidelines and pilots – such as MoE, MPWT's Green Infrastructure Guide (2019) and MLMUPC's urban NbS guideline (under development), to support national and local mainstreaming and demonstration of NbS

2.5. Opportunities for NbS policy integration

Based on stakeholder consultations and a stocktake of NbS policies and practices, several gaps have been identified that may provide opportunities to better integrate NbS priorities and actions across Cambodia's national policy mechanisms.

1. NbS policy mechanism and action plan

Consider forming a singular harmonised NbS policy circular or framework, and action plan, with ministry-specific ownership (e.g. under MoE) at the national level, with integrated actions, targets and indicators for priority sectors that build on the NDC and CCCSP 2024-2033. Such a framework could define key approaches and mechanisms to bring greater clarity to future NbS implementation. Tools such as the NDC tracking system provide an opportunity to better embed NbS-related M&E through the framework. An accompanied action plan could identify key gaps, needs and priorities across sectors and thematic areas, in the short to medium term.

2. Sectoral NbS policy integration (gaps) and guidelines

Opportunities for NbS policy mainstreaming and sector-specific strategies, guidelines, standards and tools could focus on (i) agriculture, (ii)water resources/river basin planning, (iii) coastal, and (iv) natural resource management and biodiversity sectors, which require greater integration of NbS and related approaches.

Strategies, guidelines and/or toolkits in these sectors should build on priorities and learning experiences of MPWT, MRD, NCSD, MoE and MLMUPC on NbS.

3. NbS capacity building and knowledge sharing programmes for policymakers and practitioners

A key priority identified for Cambodia is building capacity for integrating NbS across national, sectoral and local policies and practices. This is important for translating national policy into provincial and district scale practices. Capacity building initiatives and programmes should aim to outline relevant tools and processes for the identification, design and implementation of NbS projects, including the multiple benefits of NbS, and the importance of working with local communities. Opportunities could be mapped by an NbS action plan or hub (aligned with 1 and 4).

4. NbS Hubs or forums to engage in NbS policy and practice dialogues

Creating channels for open stakeholder participation and support could allow for line agencies to fill key knowledge and technical gaps, by drawing on local researchers, community and development partner expertise. A possible option is the establishment of a multi-stakeholder national NbS forum/hub (building on the MLMUPC TWG), hosted by an agreed upon authority, such as MoE, or a national research institution. This could be supported by national knowledge sharing conferences/forums, capacity building activities, action planning and priority setting.

2.6. AMS summary

Criteria	Description	Criteria	Description
Priority adaptation sectors	(i) Energy, (ii) industry, (iii) agriculture, (iv) FOLU, (v) human health and WASH, (vi) Infrastructure, (vii) livelihood and ecosystems, (viii) disaster and climate risk management, (ix) social protection, social services and child protection, (x) food systems, (xi) air quality	*NbS for climate and disaster resilience sectoral focus (apparent focus to date)*	(i) Coastal, (ii) water resources, (iii) livelihood and ecosystems, (iv) urban
NbS policy integration across reviewed policies	NbS reference in 6 of 25 policies (24%)	*NbS practical application*	Focus typically on NbS across climate mitigation, adaptation and disaster resilience
Key barriers	NbS capacity; principles and criteria; sectoral policy integration; demonstration	*NbS policy successes*	CCCSP 2024-2033 – NbS targets and activities for priority sectors
Key opportunities	NbS policy mechanism; sectoral policy and guidelines; NbS dialogue platform and capacity building		

3. Indonesia national policy profile

3.1. Climate hazard and disaster risk context and sector priorities

Indonesia ranks among the world's most disaster-prone nations, with a high risk of events such as tropical cyclones, tsunamis, and forest fires. Hydro-meteorological disasters, including floods and droughts, account for 80% of occurrences and pose threats to livelihoods. Climate change is likely to intensify these hazards, driving more extreme weather conditions.

Indonesia comprises a diverse range of biophysical landscapes, from rainforests in East Kalimantan, wetlands and peatlands in Sumatra, to drylands in East Nusa Tenggara. As the world's largest archipelagic nation with extensive low-lying and small island regions, Indonesia's marine environment is highly vulnerable to climate impacts, with the country's blue economy becoming a strategic priority. SLR poses a significant risk of submerging small islands and shrinking coastal areas, endangering industries, cities, and the marine-dependant livelihoods of 42 million at-risk coastal inhabitants. Projections suggest a 13 to 29% decline in total fish catch by 2050. Marine and coastal ecosystems are also vulnerable. Indonesia contains almost 25% of the world's mangroves and 16% of global coral reefs. Yet, rising sea temperatures put 82% of Indonesia's reefs under stress.

On land, 75% (144 million hectares (Ha)) of Indonesia's terrestrial area is forested, yet 66% of this is allocated for timber and other conversion uses. Around 34% of communities are located at forest fringes and rely on forest-based ecosystem services and Non-Timber Forest Products (NTFPs). Indonesia is also home to more than 24 million Ha of peatlands – much of which has been degraded over recent decades – comprising 36% of the world's tropical peatlands. [23]

Indonesia's NAP (2020) highlights four priority sectors for CCA, with (i) coastal and marine identified as most likely to be impacted by climate change, followed by (ii) agriculture, (iii) water and (iv) health sectors. The country's 2024 BTR also highlights ecosystem resilience as a key CCA action (reforestation, mangrove restoration, marine habitat protection).

Table 13: Priority risk areas in Indonesia

Priority risk 1: Flood risk

The National Disaster Management Agency reports significant losses from hydrometeorological disasters, including floods. With an estimated 68% of Indonesia's population expected to reside in cities by 2025, tackling urban flooding is an increasing priority

Priority risk 2: Coastal-related risks

Approximately 102,000 km of Indonesian coastline is categorised as vulnerable and 1,800 km highly vulnerable to coastal risks. The north coasts of Java and South Sulawesi are among the most vulnerable to SLR, coastal innundation, erosion and land subsidence (groundwater extraction), with north Java particularly vulnerable

Priority risk 3: Ecosystem degradation (forest, peatland and marine)

The country's forests (terrestrial and coastal mangroves) and peatlands have long been subjected to unsustainable practices, such as land conversion and deforestation, driven by the rapid expansion of palm oil plantations and timber monocultures. Wildfires have also destroyed large areas. Many remaining forest and peatland areas are degraded.

Priority risk 4: Landslide risk

Landslides are one of the country's most frequent disasters, caused by land use alterations, flash flooding, storms and earthquakes. Population exposure to landslide risk is over 194 million. High risk areas include western Sumatra, southern and central Java, Bali, Nusa Tenggara, Sulawesi, Maluku, and southern/central Papua.

[23] MoEF, 2021; MoEF, 2021; BAPPENAS, 2023; MoEF, 2024

3.2. National NbS stocktake

Indonesia has a long history of biodiversity conservation and climate resilience, however NbS/EbA approaches are relatively new. The diversity of the country's natural landscapes provides for complexity in NbS/EbA prioritisation and implementation. There is interest in the synergistic approaches of CCA, CCM and DRR to advance Indonesia's blue and green economy, though recent policies and practices have been targeted more towards CCM.

As outlined in Indonesia's BTR, climate and natural resource policies and programmes have historically prioritised marine conservation and the protection and restoration of carbon sinks (focused on forests and peatlands e.g. REDD+ projects). Indonesia has implemented a moratorium for the clearing of primary forest, reduction of forest degradation, recovery of ecosystem functions, and sustainable forest management through social forestry. Similarly, peatland (and linked wetland) and mangrove restoration activities have been focused on CCM targets. The Peatland and Mangrove Restoration Agency were previously tasked with restoring over 1.5 million Ha and 1.2 million Ha of degraded peatland and mangrove ecosystems respectively by 2024. Implementation of these targets proved challenging – in 2021, 34,911 Ha was restored (under 6% of the 2024 target). Across wider productive agro-agricultural and river basin landscapes, EbA studies and pilots are being developed, such as for climate resilient coffee farming in Flores, to build sustainable livelihoods.[24]

For CCA, the coastal, small islands and marine environment is a priority area. Mangrove, seagrass and coral reef protection and restoration are important biodiversity and eco-tourism priorities for Indonesia. In terms of NbS/EbA, good practice pilot projects and programmes have been undertaken in Java to combat coastal risks through NbS/hybrid measures (Box 3). Efforts to reduce urban flooding and better management stormwater are being explored in coastal cities including Banjarmasin, Bima, Manado, Medan, Semarang and Nusantara new capital. Recently, there has been renewed focus on marine protected areas (MPAs) to safeguard marine ecosystems and build climate resilience, with plans to preserve 10% of Indonesia's total marine area (32.5 million Ha) as MPAs by 2030, in line with the RPJMN, NAP, National Ocean Policy, MPA Vision 2030, and Indonesia Blue Economy Roadmap.

For DRR, the National Disaster Management Agency (BNPB) is increasingly adopting Eco-DRR models, including an emphasis on sustainable watershed management, including upstream efforts such as reforestation and integrated land use; midstream river restoration initiatives; and downstream measures, such as mangrove planting and coral reef restoration.

[24] Indonesian National Disaster Management Agency (BNPB), 2023; UN, 2024; MoEF, 2024; Tran, 2025

Box 12: From practice to policy – hybrid solutions through building with nature (BwN) in Java, Indonesia

Relevant sector and landscape: Coastal/marine

NbS approach: Building with Nature

Context and rationale: A key governance challenge in Indonesia is the lack of ICM policies and approaches across coastal Indonesia, to build ecosystem-based CCA and DRR, whilst combating ecosystem degradation and land use conversion.

Building with Nature (BwN) is an ICM approach that supports resilience through coupled smart engineering and ecosystem rehabilitation (hybrid NbS), as well as sustainable land use practices. In Demak, north-central Java, BwN has been applied to combat coastal erosion along a 20km stretch to safeguard 70,000 people, implemented through a public private partnership under government leadership.

Good practice example – policy and practice: The BwN approach has supported policy dialogues and the mainstreaming of measures into integrated local development plans and budgets, master plans, and even national policy references as a good practice example (such as in the NDC and NAP). On-the-ground demonstration have included the construction of permeable dam structures as sediment traps, combined with mangrove rehabilitation, river restoration to mitigate saline intrusion and ensure sediment input to the mangrove greenbelt, capacity building, and livelihood diversification.

Recommendation and outlook: The approach offers an alternative for hybrid coastal NbS over conventional hard infrastructure and has the potential to be scaled up across northern Java, and Indonesia more widely.

3.3. Policies and platforms relevant to NbS

In Indonesia, the Directorate General of Climate Change Control (DGCC/Ditjen PPI), under the Ministry of Environment (MoE), holds the overall mandate to formulate, monitor and implement climate change policies. The Ministry of Forestry (MoF) now separately oversees watershed management, ecosystem and forest restoration. In terms of direct climate policy coordination, BAPPENAS oversees the NAP (RAN-API Secretariat) to coordinate the implementation of RAN-API, whilst the MoE (DGCC) coordinates the implementation of the NDC and associated mechanisms, as focal point for the UNFCCC. Discussions as part of this study with MoE (formerly MoEF) and BAPPENAS have suggested different approaches between the two agencies on terminology, with MoE stating a preference for EbA when referring to domestic work (acknowledging NbS for international fora), whilst BAPPENAS adhere to the NbS term.

3.3.1. International climate, disaster and biodiversity policy-related mechanisms

NbS/EbA has received limited reference to date in Indonesia's international climate policy commitments. Indonesia is in the process of developing its NDC 3.0, due to be submitted in 2025. It is understood that this will expand on NDC 2.0's emphasis on the role of EbA for coastal zone protection/development, expanding across other sectors and strategic priorities. Important NbS-related concepts are highlighted in the current NDC, including landscape approach and watershed ecosystem management. Indonesia is in the process of updating its NAP as of mid-2025, with submission expected at COP30 in November 2025.

For biodiversity, NbS is an increasing priority. BAPPENAS recently published Indonesia's IBSAP 2025-2045, where NbS and ecosystem-based approaches are highlighted as key strategic issues, under biodiversity and climate change, although there is limited specific reference to NbS/EbA related targets and actions.

Table 14: NbS integration into international policy commitments in Indonesia

Policy document	Institution	Date and status	NbS relevance
NDC (Enhanced NDC)	Kementerian PPN/Bappenas	2022 (NDC 2.0)	**Direct** mention of EbA for coastal zone protection Various NbS-related approaches and concepts mentioned (e.g. ecosystem management approach for mitigation and adaptation), including specifically for CCM (e.g. climate change adaptation in forest management) and CCA (e.g. IWM, landscape-based approach)
NAP		2020	**Direct** mention of EbA with community-based adaptation for marine and coastal sectoral infrastructure (including hybrid and mangrove measures) and capacity building on EbA for coastal communities Limited NbS-related approaches and concepts mentioned (e.g. green infrastructure)
NBSAP (IBSAP 2025-2045)		2024 (NBSAP 3.0)	**Direct** mention of NbS and ecosystem-based approaches, including as one of the IBSAPs strategic issues to 2045 - *the relationship between biodiversity management and climate change* (noting an emphasis on NbS for CCM and biodiversity management) Some NbS-related approaches and concepts mentioned (e.g. ecosystem approach fisheries, OECMs)

3.3.2. National crosscutting and sectoral policy mechanisms across priority risk areas

Development policy: The National Medium Term Development Plan (RPJMN) 2025-2029 and National Long-Term Development Plan (RPJPN) 2025-2045 govern Indonesia' development planning. The RPJPN references NbS under its resilience to disasters and climate change policy direction, focused on NbS for coastal areas, including via protected areas.

Climate and disaster policy: The NAP (2019) mentions NbS/EbA for CCA when referring to EbA for climate-resilient infrastructure and capacity building priorities, aligned with *Criteria 1 (societal challenges), 2 (design at scale), and 8 (mainstreaming sustainability)*.

Sectoral policy: Of priority CCA sectors outlined in the NAP, (i) coastal/marine, (ii) agriculture, and (iii) water are of most relevance for NbS mainstreaming.[25] Three policies explicitly reference NbS. The National Water Resources Policy (2023) highlights ecosystem approaches for water networks. The Grand Strategy of Agricultural Development 2015-2045, emphasises NbS for provisioning ecosystem services, aligned with *Criteria 1 (societal challenges)*, whilst the FOLU Net Sink 2030 strategy identifies NbS for CCM outcomes (mangroves).

[25] NbS typically build climate resilience in the health sector by indirect/co-benefits, rather than direct interventions.

No reference to NbS is made in coastal/marine policies, despite being a CCA and main NbS/EbA priority for Indonesia. BAPPENAS' *Blue Economy Roadmap* (2nd edition) does however mention an ecosystem approach to fisheries management and aquaculture, integrated marine conservation and area-based management approaches, and ecosystem-based marine spatial planning, aligning with *Criteria 1 (societal challenges), 2 (design at scale), 4 (economic feasibility)*. Several additional coastal and marine sectoral policies and guidelines can support the effective implementation of integrated NbS approaches going forward, including the National Strategy for Wetlands Management (Mangroves and Peatland), MPA Vision 2030 and Roadmap to MPA management. Whilst not highlighted as priority sectors, urban and thematic biodiversity policies show limited direct integration to date, requiring more alignment of NbS/EbA resilience building measures (Table 15).

Box 13: NbS policy mainstreaming opportunities for resilient urban development in Indonesia

The implementation of NbS in Indonesia can be strengthened by existing legal frameworks, such as Law Number 26 of 2007 on Spatial Planning, which defines Green Open Space for open use and tree planting. Regulations on RTH in buildings, including roof gardens and green walls, are outlined in the Regulation of the Minister of Agrarian Affairs and Spatial Planning/Head of the National Land Agency Number 14 of 2022. Additionally, green infrastructure practices including permeable pavements align with green building principles as specified in the Regulation of the Minister of Public Works and Public Housing (PUPR) No. 2 of 2015 and No. 9 of 2021. These frameworks provide a solid foundation for further advancing urban NbS development opportunities, including building in more integrated NbS/EbA concepts and approaches.

Upon review, there is no dominant sectoral line agency that has well integrated and mainstreamed NbS for climate and disaster resilience policy priorities, indicating that it is not a strategic priority for cross-sectoral policy. Where present, policies often lack adaptive, inclusive and robust NbS principles or targets.

Table 15: NbS integration into national policy mechanisms in Indonesia

Priority policy area	Relevant policy with reference to NbS/EbA	Direct (explicit) NbS/EbA reference and alignment
Climate	National Adaptation Plan (Kementerian PPN / BAPPENAS, 2019)	Direct mention of EbA, including for climate-resilience infrastructure and capacity building priorities
Disaster	-	No direct/explicit reference
Environment	-	No direct/explicit reference
Development planning	National Long-Term Development Plan (RPJPN) 2025-2045	Direct mention of NbS under its resilience to disasters and climate change policy direction, focused on NbS for coastal areas, including via protected areas
Water resources	National Water Resources Policy (Kementerian PURR, 2023)	Direct mention of ecosystem approaches for water networks
Coastal & marine	Indonesia Blue Economy Roadmap (Kementerian PPN / BAPPENAS, 2023)	Direct mention of ecosystem approaches for coastal/marine

Agriculture and fisheries	Grand Strategy of Agricultural Development 2015-2045 (MoA, 2014)	Direct mention of NbS, including related to provisioning ecosystem services
Forests	Indonesia's FOLU Net Sink 2030 Strategy (MoEF, 2023)	Direct mention of NbS, including peatland and mangrove roles for CCM
Ecosystems and biodiversity	-	No direct/explicit reference

3.3.3. Climate change reporting, monitoring systems and evaluation tools

National Registry System for Climate Change (SRN PPI): Established in 2016 and managed by the DGCC, SRN is a publicly accessible web-based data and information management system. It is designed to document and report on climate policies and actions, including to UNFCCC, serving as an MRV/M&E tool to track the progress of central and local government commitments, including possible NbS-related activities.[26]

AKSARA: A platform-based mechanism developed and managed by BAPPENAS for M&E of climate resilience measures, which can include NbS. This is an integrated process from planning, budgeting, M&E, to reporting, and involves all relevant government line agencies, local governments, and non-governmental organisations (NGOs).

Indonesia has developed several additional tools, including SIDIK (Vulnerability Index Data Information System), CCRAA (Climate Change Risk and Adaptation Assessment), and CRIDS (Climate Resilience Index Development Study), which may offer options for NbS integration.[27]

[26] Bappenas, 2019; MoEF and Bappenas, 2022
[27] Wetlands International, 2021; Suroso, et al., 2021

3.4. Barriers and enablers for NbS policy integration

As identified via stakeholder consultations and policy reviews, Indonesia faces several key challenges for integrating NbS approaches and targets in national and sectoral policies.

Figure 12: Barriers to NbS policy integration in Indonesia

1. Lack of enabling NbS/EbA integration in NDC, NAP and NBSAP policies

Policy barrier: Robust NbS/EbA principles, targets and actions are generally lacking in core policy. The climate and disaster policy landscape in Indonesia is relatively outdated. NDC 3.0 and the new NAP (under development) should go some way towards correcting this, but work is needed to advance policies that deliver effective targets and actions and that provide the mandate/drive for national advancement on NbS or EbA

2. Lack of national NbS/EbA agenda and prioritisation for carbon

Policy barrier: Most NbS-related policies and activities to date have prioritised carbon mitigation related targets and actions, with climate and disaster resilience, biodiversity and community outcomes as co-benefits. NbS/EbA approaches have also not been prioritised as much at the national level, vs internationally. A paradigm shift towards providing clarity on a preference in approach and developing integrated NbS or EbA priorities could be considered

3. Lack of NbS/EbA alignment and unclear mandate

Institutional barrier: NbS/EbA action requires cooperation at all governance levels. While BAPPENAS are seen as the policy lead for coordinating climate action, NbS mainstreaming is not a priority. In addition, MoE and MoF both have their own priorities, with differening NbS/EbA mandates, resulting in a lack of centralised focal point (or committee)

4. Lack of clarity and policy setting for NbS criteria and approaches

Policy barrier: There is no formal policy mechanism or framework to define and guide NbS or EbA activities in Indonesia, partially linked to the lack of prioritisation and formal endorsement of either principle. Integrating NbS into regulatory and policy documents and across sectors are therefore not guided by a common and coordinated NbS or EbA approach, making it difficult for line agencies to identify clear concepts, priorities and actions

5. Lack NbS integrated across sectoral policies and siloed working

Institutional (capacity) and policy barrier: Whilst NbS/EbA projects on the ground are increasing, NbS policy mainstreaming is not yet prioritised by different line agencies, with no strong reference to NbS across priority adaptation sectors - although there is a strategic drive for the blue economy, which aligns with NbS-related approaches. There is no strong recognition of adaptive and biodiversity-positive NbS

Despite the identified barriers, there are several key enablers and successes that provide the foundation for NbS mainstreaming into Indonesia's policy landscape.

Figure 13: Enablers for NbS policy integration in Indonesia

1. Advancements in NbS (and/or EbA) prioritisation

Policy enabler: Recent advancements in agreed terminologies for NbS and EbA at the national and international level may provide a rationale for now better defining and clarifying Indonesia's outlook and approach to NbS/EbA. Efforts are also being made to further integrate NbS/EbA across policy priorities.

2. Focus on NbS for climate change mitigation (carbon sinks) across key climate and development policies

Policy enabler: Increasing climate and disaster resilience and building environmental sustainability is a key priority of the RPJMN. The RPJMN and national climate policies outline strong ambitions for mitigation objectives for FOLU and blue carbon, including marine, peatland and forest-based targets. These provide a foundation for expanision to better integrate resilience-led NbS targets and actions.

3. NbS sectoral priorities

Policy enabler: NbS is referenced in all relevant priority adaptation sectoral policies, (agriculture, water resources, coastal and marine), although they are very high level mentions with limited to no NbS-led climate and disaster resilience targets or associated actions. References to forest and wetland restoraton and integrated management priorites across key water and marine policies provide enabing conditions to better integrate NbS going forward.

4. Local NbS mechanisms to foster policy dialogue

Institutional enabler: Much of the experience on comprehensive NbS/EbA for climate and disaster resilience in Indonesia is being spearheaded by local community groups, NGOs and development partners, in collaboration with local government agencies. These groups support local NbS activities, which aim to build the evidence base for policy dialogues and inclusion.

3.5. Opportunities for NbS policy integration

Based on stakeholder consultations and a stocktake of NbS policies and practices, several gaps have been identified that may provide opportunities to better integrate NbS priorities and actions across Indonesia's national policy mechanisms.

1. Leveraging mitigation ambitions for the mainstreaming NbS into key climate and development policies

It is recommended that Indonesia build on existing climate mitigation/carbon sink narratives in its key national development and climate planning policies, and integrate wider NbS targets, actions and activities. This includes the RPJMN, NDC, NAP and NBSAP. Once NbS is prioritised and mainstreamed across key policies, including identifying priority sectors for NbS, this can support further integration.

2. NbS and/or EbA terminology, stocktaking and prioritisation

A possible option is for Indonesia to develop a circular policy via Bappenas and MoE, to provide clarity on NbS and/or EbA terminology and priorities for climate and disaster resilience, guiding principles and approaches. This can provide the foundation for national clarity, future uptake and mainstreaming of NbS/EbA across priority policies and activities. A national stocktake and survey could support this process.

3. NbS forums to engage in NbS dialogues and priority setting

Creating channels for open stakeholder participation and support could allow for line agencies to fill key knowledge and technical gaps, by drawing on local researchers, community and development partner expertise. At this stage this may include research symposiums, national capacity building workshops and knowledge sharing events/conferences - to foster positive outcomes for NbS policy, identify key needs, action planning and thematic priority setting (linked to 1, 2 and 3 above).

4. Sectoral NbS policy integration (gaps) and guidelines

Water and marine sector policies, strategies, guidelines and tools should be a priority for NbS mainstreaming, including building on existing national strategic entry points for ICZM, MPAs, integrated watershed management (river basin planning), green infrastructure, climate-resilience agriculture (flood and drought), and urban resilience. Efforts should also build NbS principles into sectoral targets and projects.

3.6. AMS summary

Criteria	Description	Criteria	Description
Priority adaptation sectors	(i) coastal and marine, (ii) agriculture, (iii) water, (iv) health, (v ecosystem resilience)	*NbS for climate and disaster resilience sectoral focus (apparent focus to date)*	(i) Forestry and land use, (ii) coastal and marine
NbS policy integration across reviewed policies	NbS reference in 8 of 25 policies (32%)	*NbS practical application*	Focus typically on NbS for climate mitigation/carbon sinks
Key barriers	NbS/EbA capacity; challenges with definition, criteria and M&E; national and sectoral policy integration	*NbS policy successes*	RPJPN (NbS principles for climate and disaster resilience for coastal areas)
Key opportunities	NbS/EbA prioritisation and policy mechanisms; climate, environment and disaster policy; sectoral policy; NbS forums		

4. Lao PDR national policy profile

4.1. Climate hazard and disaster risk context and sector priorities

Ecosystems and local communities in Lao PDR are highly vulnerable to climate change impacts, with 46% of settlements (over 3 million people) exposed to at least one climate change-related hazard.[28] The country has very high exposure to flooding, including both riverine and flash flooding, as well as some limited exposure to tropical cyclone-related floods. Drought exposure is also a key challenge and typically occurs from mid-June to mid-July when the monsoon moves from southeast to southwest.[29]

Lao PDR relies heavily on its natural resources for development. The country is rich in minerals, water sources (rivers – including the Mekong River – and wetlands), forests and other flora and fauna, many of which are in relatively good condition compared to other AMS. However, climate and disaster risk poses significant challenges, impacting key sectors, including water and forestry, agriculture, and energy. Rural livelihoods, representing 67% of the population, are particularly at risk. Over 70% of livelihoods are associated with the agricultural sector – mostly of paddy rice and cassava production – which accounts for 30% of the national GDP. In 2019, around 40% of rural family income came from non-timer forest products (NTFPs). Simultaneously, the country is undergoing rapid and unplanned urbanisation, with the highest increase in urbanisation rate in Southeast Asia, significantly increasing urban vulnerability.[30]

The six key sectors for adaptation priorities identified in Lao PDR's NDC include (i) agriculture, (ii) forestry and land use, (iii) water resources, (iv) transport and urban development, (v) public health, and (vi) energy.

Table 16: Priority risk areas in Lao PDR[31]

Priority area 1: Flood risk

Flooding is Lao PDR's most common and recurring disaster. Significant flash floods occurred in 1995, 1996, 2000, 2002 and 2005. Flooding is most prominant in southern provinces (e.g. Champasak, Attapeu and Sekong)

Priority area 2: Drought (and heat stress) risk

Meteorological and hydrological drought are the main drivers of drought eposodes in Lao PDR, with northern provinces particualrly affected.

Lao PDR also faces high exposure to heat stress, with outdoor workers and cities suffering

Priority area 3: Ecosystem degradation (forest loss)

The country's forests continue to be exploited in unsustainable ways, legal and illegal logging, land conversion and deforestation, and the rapid expansion of rubber monocultures

Priority area 4: Landslide risk

Landslide may be caused by storms and flash floods, and are frequent in the mountainous northern region, as well as central and southern provinces, where they impact transport and health services. Further research is needed to map and understand the temporal landslide risk under climate change

[28] UN Habitat, 2021
[29] World Bank, 2021a; Lao PDR MONRE, 2024
[30] World Bank, 2021a; UNDP, 2024
[31] Statistics from CFE-DM, 2024

4.2. National NbS stocktake

The NbS approach is a relatively new model for Lao PDR, with limited reference and guidance provided in national and sectoral policy frameworks, outside of the countries NDC and NBSAP. Having said this, NbS (largely applying EbA terminology) is increasingly being integrated for climate and disaster resilience, with a considerable portfolio of on-the-ground locally led and community inclusive NbS pilot projects being implemented across priority sectors. Most of these activities are supported by international organisations, working with government agencies and are typically targeted at the sub-national level. Many projects are demonstrating the value and opportunity for replication across Lao PDR and are also gradually resulting in the mainstreaming of EbA into local and national plans and strategies, although effective policy integration is still at an early stage.

As identified in Lao PDR's NDC Implementation Plan (2024), various schemes aim to support NDC sectoral adaptation objectives and targets across four priority sectors, aligned with NbS/EbA related objectives (agriculture, water resources, transport and urban development, forestry and land use). Most NbS-related activities to date have focused on building resilience in the water resource (river basin planning) and urban sectors – where the country is establishing itself as a pioneer for urban EbA – executed by MoNRE, as well as MPWT. Examples include local policy and practice EbA mainstreaming in Vientiane (Nong Loup Ian urban wetland rehabilitation), Luang Prabang, Pakse, Paksan and Savannakhet (all urban flood risk EbA), Xe Bang Hieng River Basin (IWRM and EbA) and Xe Champhone catchment (NbS for irrigation dam safety, exploring the integration of hybrid NbS with water infrastructure). A key recent success story is also the establishment of an NbS Knowledge Hub through the National University of Laos (NUoL) to strengthen institutional capacity on urban EbA.[32]

To build climate and disaster resilience across priority sectors, forest and wetland rehabilitation is an increasing focus for Lao PDR. As identified in the Lao PDR Forestry Strategy to 2035, the country aims to increase forest cover to 70%, with community-driven restoration and management schemes across strategic locations seen as vital to achieve this. Recent efforts include the establishment and restoration of the Nam San Watershed Protection Forest, the increasing upgrading of the countries National Parks (e.g. Nakai Nam Theun and Nam Et-Phou Louey), as well as REDD+ readiness and pilot programmes. Wetland restoration and climate resilient livelihood projects have also been undertaken across both urban and rural sites, including the two critical Ramsar sites; Boeung Khiat Ngong and Xe Champhone.

Nature-based ecotourism – emphasised across recent policies and projects – is also seen as a key opportunity for fostering local and sustainable forest-based livelihood models.

4.3. Policies and platforms relevant to NbS

In Lao PDR, the Department of Climate Change (DCC) within MoNRE is designated as the national focal point for coordinating climate-related activities – including NbS – and NDC implementation across sectoral ministries. Within DCC, the Technical Working Group on Climate Change brings together knowledge from across ministries, research institutions and NGOs to advance climate related implementation, tracking, data collection and prioritisation.

[32] AIT, 2025

4.3.1. International climate, disaster and biodiversity-related policy mechanisms

Lao PDR has successfully committed to NbS and EbA related approaches and priorities in both its NDC and NBSAP. Recognising the need for climate action, Lao PDR became the first ASEAN country to submit its intended NDC in 2015, later enhancing its commitment with a more ambitious updated NDC in 2021.[33] NbS is widely mentioned in the NDC across priority sectors, including agriculture, water resources, transport and urban development, although with limited clarity on what classifies as NbS. The Implementation Plan for the Lao PDR NDC (2024) provides an assessment of NbS-related activities, based on NDC targets (see Box 5).

In its NBSAP, EbA is highlighted related to climate and disaster risk policy, financing and project implementation. It is anticipated that its NDC 3.0 and revised NBSAP will further build on NbS-related objectives, along with concrete targets and actions.

Table 17: NbS integration into international policy commitments in Lao PDR

Policy document	Institution	Date and status	NbS relevance
NDC (enhanced NDC)	MoNRE	2021 (NDC 2.0)	**Direct** mention of NbS and EbA, including as long-term adaptation objectives for (i) agriculture, (ii) water resources and (iii) transport and urban development sectors. NbS also noted as low-cost options to counter climate-induced disasters Various NbS-related approaches and concepts mentioned, including specifically for CCM (e.g. sustainable forest (landscape) management) and CCA (e.g. INRM, climate resilient farming, green infrastructure, integrated land use planning)
NBSAP		2016 (NBSAP 2.0)	**Direct** mention of EbA under cross-cutting themes, including for mainstreaming climate change into NBSAP – *CC & DRM into Strategy 5: Implementing Effective Plans, Projects and Programs*, focusing on climate finance Various NbS-related approaches and concepts mentioned (e.g. natural infrastructure, IWRM, agro-ecological approaches)

[33] Lao PDR is currently developing its new NAP, to identify national and sector specific adaptation priorities, targets and measures for the coming years.

Box 14: NbS-related targets and their degree of implementation – a review of the Lao PDR NDC and associated Implementation Plan

Context: The Implementation Plan for the Lao PDR NDC (2024) provides an assessment of NbS-related activities based on NDC targets across key sectors – (i) water resources, (ii) forestry and land-use; (iii) agriculture; and (iv) urban and transport.

Challenge – defining NbS targets in national policies: Lao PDR has yet to establish a formal policy framework or approach for NbS, resulting in some barriers in aligning NbS activities with NDC sectoral targets and priority actions.

Examples – sectoral NbS targets: The NDC outlines two adaptation targets for the water sector. Based on the identified contributing projects, the target *to "increase water resource infrastructure resilience to climate change through nature-based solutions"* is considered as 'on track' in the report. When reviewed further, most of this target implementation (USD 100 of the 130 million budget) is associated with the 1st (of 2) priority actions to "*roll out canal construction and completion programs (construct additional canals and ensure canal networks are adequately connected in urban areas for improved flood management)"*. This hard-infrastructure related action conflicts with the 2nd priority action to "*roll out waterway rehabilitation programs (rehabilitate key urban waterways using NbS such as improved natural retention ponds, embankment plantings, and stream dredging for improved flood management*)".

Policy examples – sectoral NbS targets: The NDC outlines two adaptation targets for the water sector. Based on the identified contributing projects, the target *to* "increase water resource infrastructure resilience to climate change through nature-based solutions" is considered as 'on track' in the report. When reviewed further, most of this target implementation (USD 100 of the 130 million budget) is associated with the 1st (of 2) priority actions to "roll out canal construction and completion programs (construct additional canals and ensure canal networks are adequately connected in urban areas for improved flood management)". This hard-infrastructure related action conflicts with the 2nd priority action to "roll out waterway rehabilitation programs (rehabilitate key urban waterways using NbS such as improved natural retention ponds, embankment plantings, and stream dredging for improved flood management)".

In contrast, the urban sector target to *"promote ecosystem-based adaptation solutions"* is fulfilled through the priority action to "disseminate urban ecosystem-based adaptation good practices (develop case studies, undertake reviews and build handbooks and/or other knowledge products on relevant ecosystem-based adaptation and hold dissemination events, including study tours to facilitate broader uptake)". This suggests a stronger understanding of NbS in the urban sector, evidenced by the range of urban EbA projects.

Outlook: To ensure the appropriate application of NS concepts, approaches, project reporting and evaluation, future climate policies should aim to define NbS principles across priority sectors and identify robust targets, along with a transparent NbS classification approach.

4.3.2. National crosscutting and sectoral policy mechanisms across priority risk areas

Whilst Lao PDR has made good progress on NbS-related references and objectives in its international policy commitments, there is limited explicit integration of such approaches into national or sectoral policies, with only a single direct mention of NbS in the 18 reviewed laws, plans or strategies (under the National Strategy on Disaster Risk Reduction (NSDRR) 2021-2030). It is important to note that most national and sectoral policies well acknowledge the importance of conserving and restoring ecosystems and as part of their climate and development priorities. Therefore, while NbS approaches are not commonplace in policy documents yet, due to the extensive range of ongoing priority projects, policy led requirements, principles and targets are anticipated to follow in time.

Table 18: NbS integration into national policy mechanisms in Lao PDR

Priority policy area	Relevant policy with reference to NbS	Direct (explicit) NbS reference and alignment
Climate	-	No direct/explicit reference
Disaster	-	Direct mention of NbS under Strategy 1, Objective 5 for the development of a policy and technical framework for hybrid and NbS. Various indirect mentions (e.g. maintenance of green natural infrastructure, capacity building for hybrid and nature-based risk reduction)
Environment	-	No direct/explicit reference
Development planning	-	No direct/explicit reference
Water resources	-	No direct/explicit reference
Agriculture and fisheries	-	No direct/explicit reference
Forests	-	No direct/explicit reference
Ecosystems and biodiversity	-	No direct/explicit reference

Development planning policy: Whilst there is no explicit mention of NbS in the 9th Five-Year National Socio-Economic Development Plan (2021-2025), Lao PDR is strongly prioritising natural resource sustainability and ecosystem restoration – as highlighted in Outcome 3 of the plan. Nature-related approaches are widely reflected across targets, indicators and priorities, including targets for increased forest cover (70% cover), afforestation (200,000 Ha) and forest rehabilitation (1,800,000 Ha), expanding upstream water source forest models, and the development of river basin management plans, including for climate (mitigation and adaptation) and disaster resilience. References are made to participatory, community-based, biodiversity and economic values. Therefore, whilst NbS is not explicitly referenced, such national priorities are well aligned with the *8 Global NbS Criteria*.

Climate, disaster and environment policy: No explicit reference is made to NbS across core climate policy documents (NSCC and NAPA). They lack guiding NbS principles, although do highlight NbS- related concepts and approaches (e.g. IWRM, watershed restoration, agricultural ecosystem management, urban greening).[34]

For disaster risk, NbS for infrastructure resilience is a focus area of the NSDRR 2021-2030, under Strategy 1, Objective 5. The policy identifies the need to convene a multi-sector *Taskforce on Resilient Infrastructure*, with consideration for the *development of a policy and technical framework for hybrid and nature-based solutions*. The strategy also highlights *capacity building for nature-based risk reduction and hybrid solutions*.

Sectoral policy: No mention of NbS/EbA is made across any sectoral policies. Nevertheless, Lao PDR has established several robust and integrated climate and disaster-related sectoral mechanisms, in particular across agriculture (National Agro-Biodiversity Programme and Action Plan II 2015-2025 and Green and Sustainable Agriculture Framework for Lao PDR towards 2030) and water (National Water Resources and River Management and Use Strategy towards 2030) sectors. These refer to landscape planning approaches, wetland protection, forest watershed management, biodiversity corridors and IWRM principles.

Box 15: Future Urban Ecosystem-Based Adaptation policy guideline

Relevant sector and landscape: Urban

NbS approach: EbA

Context and rationale: Building urban resilience through EbA to combat flood and drought risk is an increasing priority for Lao PDR. Efforts are now moving away from traditional hard infrastructure schemes towards integrated EbA approaches. Whilst efforts are advancing, there is no standard or tool to guide relevant stakeholders on key urban EbA principles, steps, interventions, ecosystem valuation, financing options and M&E approaches.

Good practice example – policy and knowledge sharing: Under the GCF project *Building resilience of urban populations with ecosystem-based solutions in Lao PDR*, MoNRE, the National University of Laos (NUoL) and Water Sensitive Cities Australia, are in the process of developing a new step-by-step Urban Ecosystem-Based Adaptation guideline for policy makers and technical experts. The guideline will become the first NbS-related guideline in Lao PDR and is anticipated to cover wetland and urban stream restoration and management, sustainable urban drainage systems. The guidelines will include components such as (i) options for urban EbA measures, (ii) possible priority intervention sites, (iii) estimates for EbA cost-benefit analysis, (iv) EbA M&E, (v) EbA financing strategies and instruments.

The programme will also support the development of an 'EbA knowledge hub', hosted by the NUoL, with activities to support (i) joint research of EbA, (ii) the establishment of an EbA database, (iii) a curriculum for graduate students, and (iv) an interactive exhibition centre at NUoL.

Outlook: The initiative will launch the first sectoral NbS/EbA guidelines in Lao PDR. This will set a precedent for the development of further sectoral guidelines, for example on river basin planning, agriculture, transport and energy infrastructure, and other priority CCA sectors.

Further information can be found on the 'building resilience of urban populations with ecosystem-based solutions in Lao PDR' GCF project webpage here: https://www.greenclimate.fund/project/sap009

[34] Several new policies are under development (e.g. NAP), and it is anticipated that NbS will be integrated into a number of these.

4.3.3. Climate change reporting, monitoring systems and evaluation tools

MRV tracking system – According to the 2023 NCCS and the LNDC Climate Action Portal, the MRV will be led by MoNRE and will focus on the (i) UNFCCC BTR reported every two years, (ii) annual national communication to the UNFCCC, and (iii) annual national climate inventory. National level metrics and quantitative indicators will be defined linked to the future NAP. Quantitative indicators to track long-term adaptation progress in sectors such as agriculture, forestry, energy, water, and urban development will be defined in sectoral adaptation strategies and reflected in the 2025 NDC. Verification of the 2025 adaptation targets will rely on the formal approval of sectoral strategies and the integration of adaptation measures by the responsible ministries. In the absence of the MRV system, the DCC has established a portal for climate action tracking, which includes NbS/EbA projects.

Lao PDR's 9th NSEDP places strong emphasis on environmental issues and depends heavily on data to track progress. The plan's M&E framework includes 23 environment-related indicators, accounting for over 14% of all indicators, although about half of these are process-based rather than impact-focused.[35]

The Ministry of Planning and Investment has also launched the ODA Management Information System (ODA-MIS) for a centralised climate knowledge base and aid management. Climate-related projects and funding sources are recorded in the system, although not all projects have been registered to date. ODA-MIS also does not provide detailed information on NbS-related activities.[36]

[35] OCED, 2024
[36] Lao PDR MoNRE, 2024

4.4. Barriers and enablers for NbS policy integration

As demonstrated above, whilst Lao PDR is increasingly implementing NbS interventions on-the-ground, the country faces several key barriers for the integration of NbS principles, approaches and targets across national and sectoral policies. Yet, despite the identified barriers, there are several key enablers and successes that provide the foundation for NbS mainstreaming into Lao PDR's policy landscape.

Figure 14: Barriers to NbS policy integration in Lao PDR

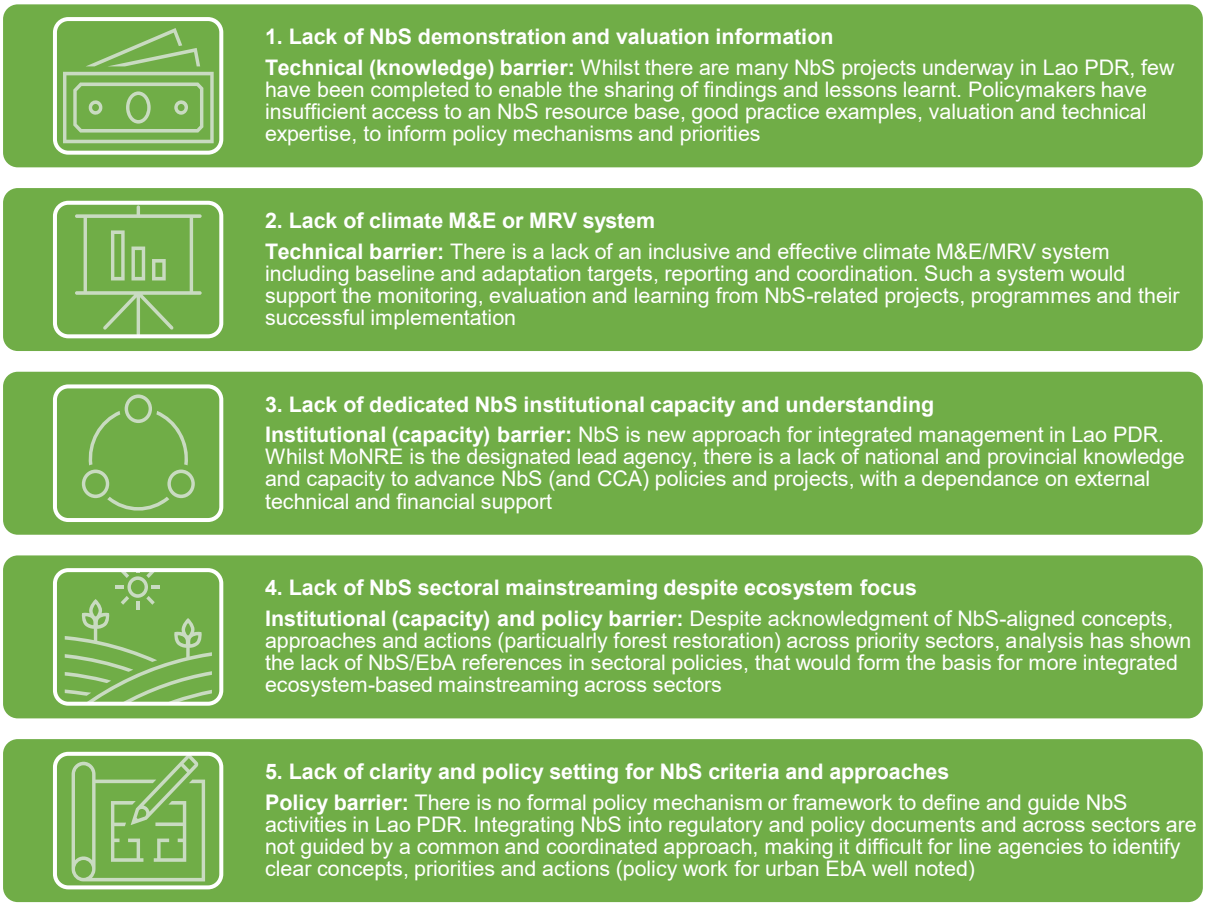
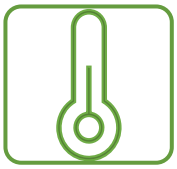


Figure 15: Enablers of NbS policy integration in Lao PDR



1. National development and climate policies

Policy enabler: Lao PDR was the first AMS to submit its NDC, and is increasingly building a strong foundation in climate policy, with its new NDC, NAP and sectoral climate change strategies. Lao PDR's NSEDP also emphasises the importance of nature and biodiversity conservation. This presents good opportunities to integrate and mobilise NbS/EbA further across such policy mechanisms.

2. Nascent urban EbA approach and expansion to other sectors

Policy and institutional enabler: Urban resilience is one of the most progressive areas for NbS integration in Lao PDR, spearheaded by MoNRE and MPWT. Plans to develop a national urban EbA guidelines offer an important first step for sectoral mainstreaming, and demonstrating approaches and processes that other sectors can follow.

3. National NbS interest and evidence for piloting to policy integration

Institutional enabler: Ecosystem conservation, restoration and natural resource management is a key priority for development priorities and the climate and disaster agenda in Lao PDR. NbS is well aligned with this and there is a real interest from government agencies in establishing projects and programmes on NbS, including via DCC.

4. NbS knowledge hub for policy dialogue and capacity building

Institutional enabler: Lao PDR has a strong development partner and NGO resource base, who support most NbS work and capacity building in the country. The establishment of a national NbS knowledge hub at NUoL can provide a centralised platform for NbS activities and engagement in the country.

4.5. Opportunities for NbS policy integration

Based on stakeholder consultations and a stocktake of NbS policies and practices, several gaps have been identified that may provide opportunities to better integrate NbS priorities and actions across Lao PDR's national policy mechanisms.

1. National development and climate policies

Looking forward, it is recommended that Lao PDR integrates NbS more deeply into its core national development, environment and climate strategies, building on existing priorities on forest conservation, water resource management, and community resilience to climate-related disasters. This could explore opportunities for strong targets, actions and activities across priority sectors and thematic areas.

2. Nascent urban EbA approach and expansion to other sectors

Urban EbA progress can set an example for other sectors and ministries to follow. Further work is needed to integrate NbS across policies and programmes of key at-risk sectors. Priority sectors in need of NbS policy mainstreaming and strategies/guidelines include (i) water (linked to National Water Resources and River Management and Use Strategy), (ii) agriculture (linked to Agriculture Development Strategy/Green and Sustainable Agriculture Framework), (iii) forestry (National Forestry Strategy), and (iv) energy and infrastructure development.

3. National NbS policy mechanism and action plan

Lao PDR could consider forming a singular harmonised NbS policy circular or framework, and action plan, with ministry-specific ownership (e.g. under MoNRE) at the national level, with integrated actions, targets and indicators for priority sectors. Such a framework could define key approaches and mechanisms would bring greater clarity to future NbS implementation. An accompanied action plan could identify key gaps, needs and priorities across key sectors and thematic areas, in the short to medium term. For example, whilst the NSEDP does not refer to NbS, it highlights the need for the development of action plans, manuals and environment guidelines, aligning with the rationale for a national NbS policy.

4. NbS capacity building and knowledge sharing programmes for policymakers

A key priority identified for Lao PDR is building internal capacity for integrating NbS across national, sectoral and local policies and practices. Capacity building initiatives and programmes for policymakers and practitioners can aim to outline relevant tools and processes for the identification, design and implementation of NbS plans and projects, including the multiple benefits of NbS. Opportunities could be mapped by the new NbS Hub or an NbS action plan.

4.6. AMS summary

Criteria	Description	Criteria	Description
Priority adaptation sectors	(i) agriculture, (ii) forestry/land use, (iii) water resources, (iv) transport/urban development, (v) public health, (vi) energy	*NbS for climate and disaster resilience sectoral focus (focus to date)*	(i) urban development, (ii) water resources
NbS policy integration	NbS referenced in 3 of 20 policies (15%)	*NbS practical application*	Focus typically on NbS for climate and disaster resilience
Key barriers	NbS capacity; principles and criteria; M&E; sectoral policy integration; demonstration	*NbS policy successes*	(i) NDC (NbS integrated across most priority sectors), (ii) urban EbA guidelines (*in progress*)
Key opportunities	NbS policy mechanism; climate, environment and sectoral policy mainstreaming and guidelines; NbS capacity building		

5. Philippines national policy profile

5.1. Climate hazard and disaster risk context and sector priorities

The Philippines was ranked first on the 2023 World Risk Index as being highly vulnerable to climate and disaster impacts. This is largely due to its geographical location, with 74% of its population – many of whom comprise vulnerable groups that bear the brunt of climate-induced displacement, livelihood loss, and increasing inequality – located in at-risk areas.[37] In 2021, the Philippine's National Panel of Technical Experts characterised the top ten climate-related risks in the country. The top five risks comprise (i) SLR, (ii) coastal erosion, (iii) flooding, (iv) increase in frequency and severity of tropical cyclones, and (v) drought, with biodiversity loss also highlighted.

The Philippines' natural resources and priority sectors are also under significant threat, impacting critical sectors such as agriculture and fisheries (drought and variable rainfall, impacting declining rice yields) and water resources (water stress and shortages). Natural assets such as forests, mangroves, and coral reefs, which offer critical ecosystem services for local communities and the world, face destruction. Recurring threats including forest fires, mangrove degradation, and coral bleaching, exacerbate these risks. However, in recent years, ecosystem restoration has become an increasing priority, implemented through national greening programmes and local schemes.

The top five priority sectors at risk – and requiring intervention – include (i) coastal, marine and fisheries sector, (ii) health, (iii) agriculture, (iv) water, and (v) forestry and biodiversity (CHAWF sectors). [38]

Table 19: Priority risk areas in the Philippines[39]

Priority area 1: Coastal-related risks (tropical storms, SLR and coastal erosion)

The Philippines is highly vulnerable to tropical cyclones, which cause significant damage to infrastructure, agriculture, and coastal livelihoods. The rate of SLR is also expected to increase, with approximately 150,000 Filipinos facing permanent displacement due to SLR by 2040

Priority area 2: Flood risk

Rainfall patterns are expected to become more extreme, leading to intensified rainfall throughout the year, especially to the east. By 2030, up to 4.8 million and 250,000 Filipinos could be affected by pluvial and fluvial flooding respectively

Priority area 3: Ecosystem degradation (forest and marine ecosystem loss)

Forest loss continues to be a big issue in the Philippines, largely driven by urbanisation and commodity-driver deforestation. 1.42 million Ha of tree cover was lost from 2001 to 2022, representing a 7.6% decrease in total tree cover (CCC, 2024). Marine ecosystems, such as mangroves, coral reefs and seagrasses are also being degraded

Priority area 4: Drought risk (and heat stress)

Drought prevalance and uncertainty is expected to continue to increase into the future, impacting critical sectors, productivity and livelihoods. The number of Filipinos potentially impacted by extreme heat may increase to 74 million by 2050 , particualrly in cities

[37] CCC and DENR, 2023
[38] As outlined on the National Integrated Climate Change Database Information and Exchange System (NICCDIES), 2024
[39] Data sourced from NAP (2024)

5.2. National NbS stocktake

The Philippines is at one of the most advanced stages of NbS integration of the AMS reviewed for this study, with NbS activities being spearheaded by national government and development partners through national and sectoral policy and locally-led on-the-ground piloting and implementation.

With support from UNDP and other partners, DENR are currently conducting NbS stocktaking studies, to map the current landscape of NbS implementation across the environment and natural resources sector, NGOs, and the private sector.[40] In terms of sectoral NbS implementation, successful priorities and actions to date have predominantly focused on coastal resilience, flood risk and river basin planning, with various programmes, studies and pilots having been undertaken. Emerging sectoral priorities include NbS for agriculture and nature-based and climate-resilient infrastructure and urban planning.

On land, DENR and the Department of Public Works and Highways (DPWH) are working extensively to strengthen rural livelihoods, protect biodiversity ecosystem services, and reduce climate and disaster vulnerability through EbA interventions across at-risk river basins. Initiatives with development partners have worked to establish approaches for integrating NbS and ridge-to-reef approaches into river basin management practices and flood risk master plans (Box 16).

Box 16: Mainstreaming NbS planning in priority river basins

Relevant sector and landscape: Water resources (river basins)

NbS approach: EbA

Context and rationale: The Philippine government have recognised the importance of ecosystem approaches for river basin planning and management. Several initiatives have focused on the application of IWRM, ecosystem services valuation and EbA measures in major river basins including Luzon, Visayas and Mindanao.

Example initiatives: GIZ have supported DENR under the *Ecosystem-based management and ecosystem services valuation in two river basins in the Philippines* project, with applying networks of EbA measures and ecosystems services valuation in Visayas and Mindanao. EbA interventions include the restoration of riverbanks and the establishment of urban/agricultural buffer zones link to protected areas, to combat flood and drought risk, forest loss and the sedimentation of streams and reservoirs.

ADB are supporting DPWH to develop comprehensive basin-level flood risk management master plans that integrate NbS approaches to through natural river management, with short, medium, and long-term strategies, as well as feasibility studies and detailed designs of priority NbS and hybrid infrastructure. The initiative has developed a guidance brief – *Nature-Based Solutions for Flood Risk Management Revitalizing Philippine Rivers to Boost Climate Resilience and Enhance Environmental Sustainability*, highlighting the natural river management approach and lessons from the Philippines on how NbS can strengthen flood risk management in cost-effective ways.

Outlook: Experiences from these projects should aim to further embed NbS into water resource management policies and plans at the national and local level, linked to DENR's newly launched Integrated Water Resources Management Plan (2024), as well provide framing for future EbA work in the sector.

National programmes that are aligned with NbS-type concepts and approaches have also been established. The (enhanced) National Greening Program (NGP) is a large-scale DENR-led forest rehabilitation program, aiming to rehabilitate all the remaining unproductive, bare and degraded forestlands by 2028. On top of supporting reforestation, the NGP has indirectly contributed to the improved irrigation, river water quality and reduced flood risk.

[40] UNDP, 2024b

The National Convergence Initiative for Sustainable Rural Development (NCI-SRD) is a government-led strategy that aims for improvements in governance, smallholder farmer and fisherfolk livelihoods and the sustainable use of resources. The NCI-SRD focuses on watershed and river basin management and rehabilitation through a ridge-to-reef framework approach.

The Department of Budget and Management (DBM) also launched the "Green, Green, Green" assistance program in 2018, which aims to increase public green space (and associated green infrastructure) across the country's 145 cities for urban liveability, sustainability and climate and disaster resilience. Example projects include the Puerto Princesa Balayong Nature Park and the Cagayan De Oro City Eco-Park, which is a nature-based/hybrid component of the national infrastructure development program, "Build, Build, Build".

Coastal and marine resilience interventions have focused on ridge-to-reef approaches, the protection and restoration of coastal forests, mangroves, seagrass meadows and coral reefs, the expansion of MPAs, and the establishment of Local Climate Change Action Plans formulated by local governments to address climate concerns. In Siargao for example, the Siargao Island Protected Landscape and Seascape (SIPLAS) authorities are working with local municipalities to build NbS-led climate and disaster resilience through watershed and coastal resource management, under the SIPLAS Management Plan. Several municipalities are spearheading local action (Box 7).

Box 17: Local management approaches and NbS transformations for CCA, DRR and biodiversity conservation in Siargao Island

Relevant sector and landscape: Marine and local fishery livelihoods (islands)

NbS approach: Eco-DRR (mangrove protection and restoration)

Context and rationale – balancing ecosystem protection and local development: Siargao is a unique island, protected under SIPLAS due to its diverse ecosystems – such as mangroves and coral reefs – and extensive biodiversity. The protection and restoration of Siargao's natural ecosystem is at odds with the island's tourism and development priorities and natural-resource dependant livelihoods. The island's local population, infrastructure and ecosystems are also highly vulnerable to climate and disasters risks, including typhoons, storms surges, flood, drought and ecosystem degradation.

Good practice example – mangroves for disaster resilience: To the east of the island, the Del Carmen municipality has prioritised conservation actions since 2010, to build disaster resilience and combat ecosystem degradation, working towards alternative livelihoods for local communities historically involved in illegal mangrove cutting. The Del Carmen Mangrove Forest now stretches across over 4,871 Ha due to these interventions and is the largest contiguous mangrove forest in the Philippines, providing food, carbon storage and protection against storm surges. In December 2021, Typhoon Odette (category 5) made landfall in Siargao, causing devastation for island residents and ecosystems. Despite this, the mangrove forest has been attributed to a reduction in damage and casualties.

Outlook: The successful rehabilitation of the Del Carmen mangrove forest has led to it being recognised by the Philippine government as a wetland of international importance, with proposals now underway for its inclusion as a global Ramsar site. Future work by SIPLAS and local municipalities is working to ensure sustainable ecosystem resilience, balanced with ecotourism.

The above case study is presented based on interviews with Siargao officials and community representatives

5.3. Policies and platforms relevant to NbS

The national Climate Change Commission (CCC) is the lead policy-making body on climate change, coordinating, monitoring, and evaluating climate change-related activities. Work on NbS is crosscutting, and the CCC and DENR collaborate on various CCA and NbS-related activities; for example, the NAP 2023-2050 is a collaborative effort between the CCC and DENR. Both agencies work on NbS initiatives, although DENR is taking the lead on national NbS-related policy mechanisms and frameworks, including via a multi-stakeholder TWG.

5.3.1. International climate, disaster and biodiversity-related policy mechanisms

The Philippines has established strong foundational policy mechanisms for NbS, in particular its NAP (2023-2050), where scaling up NbS is highlighted as one of the five thematic cross-sector adaptation strategies in the NAP. This strategy emphasises the importance of prioritising NbS to enhance climate resilience and protect vulnerable populations. Whilst no mention of NbS is outlined in the Philippine NDC (2021), it is anticipated that the upcoming 2025 submission will include important references to NbS.

Philippines new NBSAP goes beyond NbS as a key principle, and details specific targets and indicators for adopting NbS across both policy and practice, aiming for more comprehensive mainstreaming.

Table 20: NbS integration into international policy commitments in the Philippines

Policy document	Institution	Date and status	NbS relevance
NDC	CCC	2021 (NDC 1.0)	No direct mention of NbS/EbA. Limited indirect mention of NbS measures (e.g. forest restoration and reforestation)
NAP 2023-2050	CCC/ DENR	2023	**Direct** mention of NbS and EbA, including as one of the five thematic cross-sector adaptation strategies in the NAP – *scale up NbS*. Sector specific mentions, including as key strategies for (i) land use and urban planning; (ii) climate-resilient infrastructure, (iii) incentives for private investment in NbS. Various NbS-related approaches and concepts mentioned (e.g. green infrastructure, ridge-to-reef approach, IWM, SLM, agroforestry, indigenous peoples' knowledge, and local knowledge systems)
PBSAP 2024-2040	DENR	2024	**Direct** mention of NbS and EbA, including in the PBSAP framework (with specific targets for NbS initiatives) and under Theme 3 (Biodiversity Impacts): • *Number of local government units in target sites that adopt NbS and EbA* • *Number of policies issued on NbS and EbA* Various NbS-related approaches and concepts mentioned (e.g. landscape-seascape integrated management approach, urban green and blue spaces, sustainable use of natural resources, sustainable watershed management, indigenous knowledge systems and practices)

5.3.2. National crosscutting and sectoral policy mechanisms across priority risk areas

Across core national and sectoral policy levels, there is widespread reference and importance given to NbS approaches; the most comprehensive out of the AMS in this study. A transformative NbS policy outcome will be the new Administrative Order (AO) being formulated by DENR to develop a 'mother policy' framework on NbS (Box 9). Whilst the AO is under development, line agencies are well advancing on a range of NbS priorities.

Development policy: National NbS-related mechanisms are spearheaded by the Philippine Development Plan (PDP) 2023-2028, with direct mention of NbS and EbA, including for climate action (mitigation and adaptation) and disaster resilience, along with sectoral NbS significance given to agriculture, forestry and fisheries, and infrastructure planning and design. The prioritisation of NbS, as well as acknowledgements of the importance of NbS for sustainable land use, indigenous knowledge, biodiversity and upscaling, highlight the PDP's general alignment with the *8 IUCN NbS Criteria*.

Climate, disaster and environment policy: Fundamentally, the Climate Change Act (2009) and Disaster Risk Reduction and Management Act (2010) provide clear CCA and DRR mandates for government agencies. Gender equality, disability and social inclusion (GEDSI) based approaches have also been well advanced in the formulation and implementation of climate change policies, plans, programs, and activities in the country.

The Philippines stands out among other AMS for its proactive, inclusive and forward-thinking approach to institutionalising responses to climate and disaster resilience. Some of the oldest climate policies as far back as 2010 reference integrated ecosystem-based management approaches, although it is noted that its core national climate policies need updating. The Philippines is also one of few AMS, along with Lao PDR, that emphasises the role of NbS in its National Disaster Risk Reduction and Management Plan, identifying priorities for blue-green infrastructure including indicators for NbS projects.

Box 18: Developing a DENR-led NbS policy framework in the Philippines

Challenge and rationale: Like other AMS, the Philippines faces challenges with defining and framing NbS across its core policies, programmes and projects, in particular as it NbS is explicitly referenced in the overarching PDP.

Initiative: A new 2025 AO is under development by DENR, led by the Climate Change Services (CCS) Department, on the *Institutionalization and Integration of Nature-Based Solutions (NbS) in Environment and Natural Resources (ENR) Related Policies, Plans, Programs and Projects*. The AO will initially focus only on DENR-specific policies, plans and projects.

The AO will become a 'mother policy' and aims to:

- Establish general criteria on NbS standards across key sectors and ecosystem types
- Promote the mainstreaming of NbS into the policies, plans and projects of DENR and other agencies
- Strengthen the planning, implementation, monitoring and evaluation of NbS projects
- Establish an NbS Technical Working Group, comprising multiple line agencies

When it comes into force, this will be applied across all ENR-related policies, plans, programs and projects of the government, civil society, the private sector, and development partners.

Outlook: In time, the DENR AO should work to embed NbS across other line agency policies and plans.

Sectoral policy: Forest and water sector policies led by DENR provide strong alignment with NbS and EbA for climate and disaster resilience. The Integrated Water Resources Management Plan recognises NbS as a priority cross-cutting strategy for river basin planning and implementation, following IWRM approaches. The Master Plan for Climate Resilient Forestry Development also refers to forests' role for EbA, and highlights resilience building for livelihoods, equity and social justice, integrated watershed management, conflict resolution needs, and capacity building and funding opportunities, aligning with the *8 IUCN NbS Criteria*. Future policy updates in these sectors are expected to further build on this.

Along with references to NbS, many sectors also advocate for integrated watershed management, as well as the ridge-to-reef approach – an NbS type concept and approach that strongly complements NbS principles in the Philippines. Sectoral guidelines are also being developed that align with NbS, such as the *Guidelines for Sustainable Development Planning and Management of Peatlands* (DENR, 2022), which recognises and promotes NbS and EbA to conserve and protect peatlands from degradation and climate impacts.

Table 21: NbS integration into national policy mechanisms in the Philippines

Priority policy area	Relevant policy with reference to NbS	Direct (explicit) NbS reference and alignment
Climate	National Framework Strategy on Climate Change (NFSCC) 2010-2022 (CCC, 2010)	Direct mention of integrated ecosystem-based management approach
	The National Climate Change Action Plan (NCCAP) 2011-2028 (CCC, 2012)	Direct mention of integrated ecosystem-based management approach
Disaster	National Disaster Risk Reduction and Management Plan 2020-2030 (NDRRMC, 2020)	Direct mention of NbS and EbA, including as a new direction for DRR aligned with blue-green infrastructure, and as key output under Outcome 6 (on natural resources and ecosystem integrity), with an indicator on *number of green/nature-based solutions implemented by 2022*
Environment	*Nature-based Solutions Policy Document (DRAFT) (DENR, 2025)*	*Policy to institutionalise and integrate NbS into all ENR-related policies, plans, programs and projects of the government, civil society, the private sector, and development partners*
Development planning	Philippine Development Plan (PDP) 2023-2028 (NEDA, 2023)	Direct mention of NbS and EbA, including for climate action (mitigation and adaptation) and disaster resilience; agriculture, forestry and fisheries; infrastructure planning and design
Water resources	Integrated Water Resources Management Plan (DENR, 2024)	Direct mention of NbS and EbA as a priority cross-cutting strategy for river basin planning and implementation following IWRM approach. Strategic action under environment (forestry) for development of flood control and coastal protection infrastructure using hybrid NbS
Coastal and marine	Blue Economy Act (Senate Bill No. 2450) (2025)	Direct mention of ecosystem-based management
Agriculture and fisheries	National Agriculture and Fisheries Modernisation and Industrialisation Plan (NAFMIP) 2021-2030 (DoA, 2022)	Direct mention of integrated ecosystem-based management approach (when referencing the NFSCC)
Forests	Philippine Master Plan for Climate Resilient Forestry	Direct mention of EbA for climate resilience and biodiversity conservation and ecosystems services

	Development (PMPCRFD) 2023-2028 (DENR, 2023)	
Ecosystems & biodiversity	PBSAP	Referenced in PBSAP (no further mention in other thematic ecosystem/biodiversity policies)

Whilst the coastal/marine and fisheries, agriculture, and forestry sectors are identified as priorities for CCA resilience building measures, further work could be undertaken to develop sectoral NbS strategies and guidelines for priority sectors.

5.3.3. Climate change reporting, monitoring systems and evaluation tools

National Integrated Climate Change Database and Information Exchange System (NICCDIES): NICCDIES is the main CCC enabling platform for consolidating and monitoring information on climate change and climate action from public and private sector sources and actors. It allows for decision-makers to access, distribute, and monitor data for use in policymaking, planning, and investment decision-making. NICCDIES contains several typology codes for NbS-related tagging.[41]

National Climate Risk Management Framework (NCRMF): The CCC adopted the NCRMF in 2019, with the aim of harmonising climate risk management efforts across all sectors and stakeholder groups. Major activities include a national stocktake on climate risk information and tools, a climate risk evaluation, and a risk management action formulation (M&E and budget tagging). The NCRMF envisions a unified, science-based climate action planning system, supported by a robust integrated risk database accessible at all levels. The NCRMF guides key national plans, including the PDP, NCCAP, NAP, and NDC, ensuring targeted and effective climate strategies and programs. As such, NbS is a component of the NCRMF.[42]

NCCAP Result-Based Monitoring and Evaluation System (RBMES): The NCCAP RBMES was established to monitor and assess the NCCAP implementation. Building on government efforts to integrate CCA and DRR into planning, it enabled the production of 2011-2016 M&E report. This evaluates actions to mainstream climate change through policies, programs and systems, identifying a need for stronger institutional capacity and better coordination of government agencies for effective implementation and monitoring of climate programs.

The Philippines is also developing a comprehensive Natural Capital Accounting Data Management System, comprising geospatial data and environmental and economic information, to foster an approach towards natural capital accounting.

[41] NICCDIES, 2024b.
[42] Philippines CCC, 2024.

5.4. Barriers and enablers for NbS policy integration

Despite the growing NbS narrative in the Philippines, there are still several barriers to the comprehensive integration of NbS approaches across the policy landscape, many of which will be targeted through the DENR NbS policy mechanism.

Figure 16: Barriers to NbS policy integration in the Philippines

1. Overlap and alignment of institutional mandates

Institutional barrier: CCC and DENR both have the mandate to work on NbS activities, with CCC's focus on CCM, CCA and DRR, whilst DENR also covers these areas, as well as the environment and natural resources sector more widely. The national NbS TWG should provide greater clarity and alignment on relevant tasks and mandates across the two agencies.

2. Lack of clarity and policy setting for NbS standards and approaches

Policy barrier: NbS is well represented across key policies and plans in the Philippines, however there is not yet a standardised set of principles, approaches and criteria to guide the design and implementation of NbS activities across priority sectors. This results in challenges for converting and translating policy objectives and targets into effective local NbS projects, supported by local line agencies and communities. The ongoing DENR NbS policy work will aim to tackle this and provide clear principles, standards, indicators and M&E frameworks.

3. Lack of NbS demonstration and evidence base across priority sectors

Technical (knowledge) and policy barrier: Although a number of NbS pilot and demonstration activities have been undertaken, these have not yet resulted in the mainstreaming of NbS into several priority sectoral policy areas (e.g. agriculture), including principles, targets and practical activities on the ground. More effort is needed to build linkages and support implementation from policy to practice, and also practical learnings to inform new/updated policy mechanisms.

Despite the identified barriers, there are several key enablers and succusses that provide the foundation for NbS mainstreaming into the Philippine's policy landscape.

Figure 17: Enablers of NbS policy integration in the Philippines

1. Institutional leadership, national NbS policy mechanism & platform

Institutional enabler: the ongoing DENR policy mechanism is a critical first step for fostering and aligning the nbs policy landscape in the philippines, and can provide a championing example for other AMS. The nbs TWG also provides a key platform for multi-stakeholder and cross-sectoral discussions.

2. Focus on inclusive and community-led NbS approaches

Institutional and policy enabler: philippines core development, climate and environment policies have a strong inclusion of community led and GEDSI principles and considerations for ecosystem-based plans, programmes and projects.

2. Strong sectoral NbS mainstreaming

Policy enabler: the philippines has one of the strongest national and sectoral nbs policy landscapes across ASEAN, with nbs integrated into all key sectors. The aim for the country is now develop more robust targets, actions and activities, and to increasingly turn policy to practice (and in turn in form policy updates).

3. Monitoring, evaluation and learning from NbS pilot activities

Policy enabler: the philippines has established a strong climate M&E foundation, including through NICCDIES and RBMES, which can support nbs reporting, integration and M&E through future nbs frameworks ad targets. Going forward this should support evaluation and learning activities.

5.5. Opportunities for NbS policy integration

Based on stakeholder consultations and a stocktake of NbS policies and practices, several gaps have been identified that may provide opportunities to better integrate NbS priorities and actions across the Philippine's national policy mechanisms.

1. Cross-sectoral national NbS policy framework

In time, opportunities may exist to advance the DENR policy and embed NbS into wider sectoral policies and plans. The policy could also create a formalised platform to facilitate this. The DENR policy mechanism can set a precedent and share experience for other AMS on establishing and integrating national NbS policies, standards and approaches. This can also support expanded targets, indicators and actions on NbS.

2. Policy to practice - advance plans for sectoral NbS mainstreaming

As highlighted in the NAP, a key opportunity is the integration of climate adaptation and NbS across national planning (e.g. for climate-resilient NbS design and planning and Green Building Code), including NbS strategies, guidelines, tools and pilot studies to support this, across key sectors. Options could include NbS guidelines and toolkits for priority areas such as agriculture, coastal and urban sectors (if not already under development).

3. National platform for NbS policy dialogues

Knowledge sharing, M&E and capacity building on NbS through national instruments and multi-stakeholder platforms is critical for future mainstreaming. This is already an action identified in the NAP. Possible options for establishing a formal platform - through an NbS hub or forum approach for example - could come out of discussions under the new DENR NbS TWG.

4. NbS capacity building and knowledge sharing programmes for policymakers and practitioners

A key priority identified for the Philippines is building the capacity of national and local stakeholders, to integrating NbS across sectoral and local policies and translate policy into local practices. This is particularly the case for building awareness and capacity of local stakeholders on NbS/EbA approaches through pilot and large-scale integrated projects. Capacity building initiatives and programmes should aim to outline relevant tools and processes for the identification, design and implementation of NbS projects, including the multiple benefits of NbS. It is understood capacity building needs are being mapped through the NbS TWG.

5.6. AMS summary

Criteria	Description	Criteria	Description
Priority adaptation sectors	(i) Coastal, marine and fisheries, (ii) health, (iii) agriculture, (iv) water, (v) forestry and biodiversity	*NbS for climate and disaster resilience sectoral focus (apparent focus to date)*	(i) Coastal and marine, (ii) water resources, (iii) biodiversity
NbS policy integration across reviewed policies	NbS referenced in 11 of 23 policies (48%)	*NbS practical application*	Strong focus on NbS for climate mitigation, adaptation and disaster resilience
Key barriers	NbS targets; clear mandate; criteria and M&E; policy integration; evidence base	*NbS policy successes*	DENR NbS policy framework, NAP and Integrated Water Resources Management Plan
Key opportunities	NbS cross-sectoral policy; mainstreaming into practice; expanded NbS dialogue platform and capacity building		

6. Thailand national policy profile

6.1. Climate hazard and disaster risk context and sector priorities

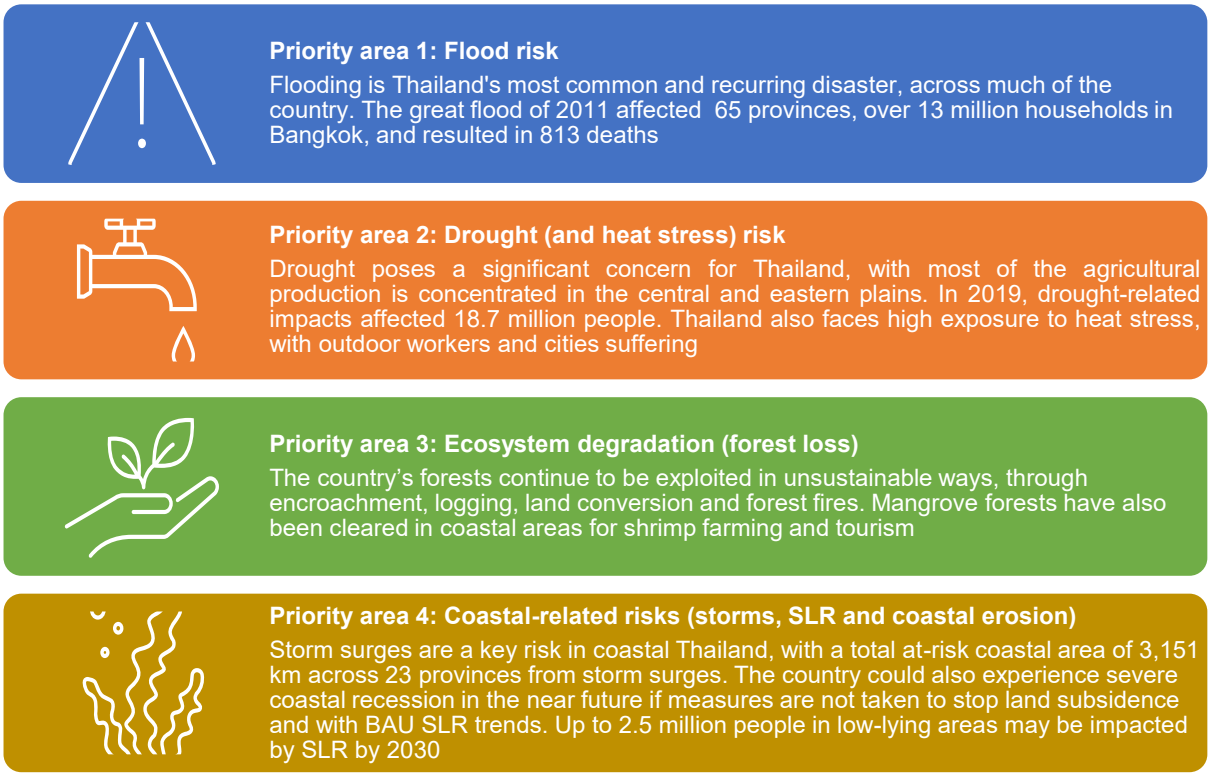
Thailand was ranked 8th on the Global CRI (2020) as highly vulnerable to climate change. The most severe natural disaster experienced in Thailand is flooding, which result in recurrent, seasonal risks during the monsoon season. Conversely, like other Mekong countries, Thailand is also susceptible to intensifying and variable droughts in the dry season. Flood risk is compounded further by tropical cyclones and typhoons. Landslides also occur simultaneously with flash flooding, increasing in frequency and severity due to deforestation, unplanned infrastructure developments, farming on steep slopes, and soil erosion.[43]

Thailand's agricultural sector and annual crop production, including rice, sugar cane, and cassava cultivation in the Central Plain lowland area of the Chao Phraya River, are affected significantly by seasonal floods and droughts, as the sector represents more than 70% of the country's water use. In addition, with Thailand's population now largely concentrated in towns and cities, urbanisation is increasing urban vulnerability to climate-related risks, particularly flooding. Other key impacted sectors include tourism and industry.[44]

Thailand's natural forest cover of almost 32% has already declined by 12% since 2000, due to human pressures, land conversion and forest fires. Mangrove forests have also been cleared in many coastal areas.[45] Recent interventions have prioritised community-led restoration activities, such as rehabilitating watershed forests for flood and drought management.

Thailand's NAP emphasises long-term action across six priority sectors, including (i) water resource management, (ii) agriculture and food security, (iii) tourism, (iv) public health, (v) natural resource management, (vi) human settlements and security.

Table 22: Priority risk areas in Thailand



[43] Thai Office of the National Economic and Social Development Council, 2023.
[44] World Bank, 2024b.
[45] World Bank, 2024b; Thai DCCE, 2024a.

6.2. National NbS stocktake

Thailand has been advancing its NbS agenda in recent years, through national policy development, domestic programmes and projects, and support from international development partners, with a particular focus on the water resources (river basin planning for flood and drought risk), coastal (including tourism) and urban (city greening) sectors.

Thailand's water resource management approaches have traditionally favoured hard infrastructure solutions for CCA and DRR, over locally driven, networks of NbS. This also stems from the complexity and dynamics of Thailand's water governance and policy mandates. In recent years, Thailand's Office of National Water Resources (ONWR) and other line agencies, are increasingly promoting NbS approaches to IWRM and river basin planning and management for flood and drought resilience (Box 10). These aim to build on community-driven and traditional knowledge initiatives. As highlighted in Thailand's 2024 BTR, measures such as wetland rehabilitation, watershed forest restoration, riparian buffers and living weirs or dykes, as well as hybrid nature-based (green) infrastructure solutions are now being applied, and feature in the Climate Change Master Plan and NAP. The BTR also highlights discrete examples of RID supporting the management of paddy fields to serve as man-made wetlands in the wet season for flood retention, suggesting a gradual shift towards piloting EbA. [46]

Box 19: Mainstreaming NbS into river basin planning – good practice examples from Thailand's water sector

Relevant sector and landscape: Water resources (river basins)

NbS approach: EbA

Context and rationale: Thailand's water resource management approaches have traditionally followed a top-down approach, with line agencies typically favouring large-scale, hard infrastructure solutions, such as channelised and embanked rivers, irrigation canals, tunnels, dikes and large-scale storage reservoirs, over locally driven, smaller-scale networks of nature-based initiatives. Many of these hard measures, such as the storm drainage systems, have not been designed to withstand extreme events, such as 100-year or even 30-year flood events. In response, ONWR and other water resource management agencies, are increasingly promoting NbS approaches to IWRM and river basin planning and management for flood and drought resilience. These often build on community-driven and traditional knowledge initiatives.

Good practice example – policy and practice: ONWR through its collaboration with development partners such as GIZ and IUCN have developed an *Ecosystem-based Adaptation Code of Practice (CoP) Compendium for the Thai Water Sector*. The EbA CoP provides a blueprint for different EbA interventions, providing technical guidance on design aspects (for measures such as living dikes, forest restoration and riparian buffers) and insights into EbA cost-benefit analysis. Through the same partnership a *Guidebook for the Design and Implementation of Ecosystem-based Adaptation in River Basins in Thailand* was developed, providing a step-by-step guide for line agencies, practitioners and other stakeholders on mainstreaming EbA into IWRM for Thailand's 22 river basins.

A GIZ-led study has also examined EbA effectiveness and impact - *Lessons from Piloting Monitoring & Evaluation of Ecosystem-based Adaptation in Thailand's Water Sector.* The guide provides a step-by-step process to develop and apply M&E approaches for EbA, using on-the-ground pilot measures as examples.

Outlook: Evidence-based studies such as these must now be used to inform policy development and EbA integration, as well as design standards, cost norms and M&E frameworks at the national and local level.

[46] Mongabay, 2023; Thai DCCE, 2024b.

Other flood reduction NbS measures are being design and implemented along the coast through MNRE, such as mangrove restoration, urban resilience and biodiversity-led livelihood and ecotourism initiatives. Green infrastructure (urban parks and green corridors) are being piloted in several inland and coastal cities. Thailand is also developing policy guidelines and M&E tools for climate and biodiversity action, which will comprise NbS-related mechanisms.

Thailand's National Science and Technology Development Agency (NSTDA) has recently developed an NbS white paper and national science, research and innovation (SRI) roadmap, focusing on NbS for CCM and biodiversity, to guide future research and development for NbS in Thailand (Box 11).[47]

Box 20: Thailand NbS science, research and technology (STI) roadmap

Context and rationale: The national science, technology and research (SRI) NbS roadmap (focusing on NbS for CCM and biodiversity), highlights gaps in research related to four ecosystems (i) terrestrial forest ecosystems; (ii) wetland ecosystems; (iii) agricultural ecosystems; and (iv) urban ecosystems. The studies consider political, economic, social, technology, environmental and legal issues, and aims to serve as guidelines for policymakers. The roadmap itself is divided into capacity building, research and technology, policy and finance recommendations over a 3 (2028), 5 (2030) and 10 (2035) year period to net zero.

Policy recommendations: Examples of short-term policy and capacity roadmap recommendations include NbS guidelines (and capacity building, an NbS knowledge hub, a national cross-sectoral NbS committee and MRV mechanism for NbS projects.

6.3. Policies and platforms relevant to NbS

Established in 2007 under the Prime Minister's Office regulation, Thailand's National Committee on Climate Change Policy (NCCC) coordinates national efforts to address climate change. Chaired by the Prime Minister or a designated Deputy, with co-vice chairs from the MNRE and Foreign Affairs, the NCCC formulates policies, guidelines, and mechanisms to meet Thailand's climate goals and ensure effective collaboration and implementation. The National Environment Board (NEB) also sets and endorses national policy decisions on environmental protection, natural resource management and biodiversity conservation.

NbS policy in Thailand falls under the joint remit of ONEP and DCCE (MNRE). ONEP has the lead mandate to develop environment policies in the country and promote NbS into national planning frameworks. DCCE's NbS supporting role in supervising climate-related policies and project activities is facilitated via inter-departmental collaboration and policy alignment.

6.3.1. International climate, disaster and biodiversity-related policy mechanisms

NbS approaches are well established across Thailand's international policy commitments, including its NDC, NAP and NBSAP. Thailand's NDC Roadmap 2021-2030 identifies several NbS-related activities, including a focus on increasing forest cover to 40% through local community participation through headwater and mangrove forest rehabilitation to enhance ecosystem adaptive capacity. It is anticipated that Thailand's revised NDC will continue to build on NbS-aligned principles, targets and approaches.

Thailand has integrated NbS extensively in its NAP, being referenced directly across key sectors, including water resource management, natural resource management and biodiversity, tourism, and urban sectors. Considerations include human-nature coexistence, biodiversity conservation, upscaling and capacity building needs, representing the *8 IUCN NbS Criteria*.

The country's NBSAP similarly strongly supports climate change and biodiversity synergies, promoting the study and implementation of NbS and EbA approaches, the importance of build knowledge and understanding on NbS, as well as developing pilot initiatives.

[47] NSTDA, 2025

Table 23: NbS integration into international policy commitments in Thailand

Policy document	Institution	Date / status	NbS relevance
NDC	ONEP, MoNRE	2022 (NDC 2.0)	**Direct** mention of EbA, in reference to Thailand's NAP and as a key support need for CCA to implement the NDC Various NbS-related approaches and concepts mentioned (e.g. IWRM, sustainable use, management and rehabilitation of natural resources)
NAP		2023	**Direct** and extensive mention of NbS, EbA and ecosystem-based approaches, including a mention in the foreword. Specific NbS measures mentioned across key sectors: • *Water resource management* – NbS/EbA for river basin management (including support needs for guidelines and pilot implementation) • *Natural resource management* – (i) ecosystem-based approach for protected areas, ecological corridors and buffer zones; (ii) criteria for forest and human coexistence using NbS/EbA; and (iii) enhance adaptative capacity of stakeholders through EbA/NbS • *Human settlements* – integration of NbS into urban development plans and strategies • *Tourism* – ecosystem-based approaches for drought risk and nature-based tourism. Various NbS-related approaches and concepts mentioned (e.g. green infrastructure approaches for climate-resilient water resource management, sustainable use of biodiversity and ecosystem services approaches, IWRM, ICZM)
Thailand's National Biodiversity Action Plan 2023-2027		2025	**Direct** mention of NbS, EbA, Eco-DRR and EbM, including under Target 4 (reduce threats to biodiversity from climate change and pollution). Target 4, Recommended Actions 1 (*climate change on biodiversity*). This measure also has two NbS operative guidelines: • *Study and promote the implementation of nature-based adaptation approaches and/ or EbA approaches to address climate change impacts* • *Build knowledge and understanding of the situation, impacts, and risks of climate change impacts on biodiversity, and enhance the capacity of all relevant sectors by using NbS principles and EbA approaches* • A 'target value' for 4.1 of *at least 6 pilot areas implementing NbS to reduce climate change impacts*. Various NbS-related approaches and concepts mentioned (e.g. CBNRM, IBM, OECM's for ecosystem connectivity, integrated spatial planning, agroforestry)

6.3.2. National crosscutting and sectoral policy mechanisms across priority risk areas

Development policy: A key NbS policy mainstreaming successes in Thailand is its inclusion in Thailand's 13th National Economic and Social Development Plan (NESDP) 2023-2027. NbS is referenced under *Milestone 11: Thailand Can Mitigate Risks and Impacts of Natural Disaster and Climate Change*. This includes sub-strategy 3.1 on sustainable agriculture and nature-based development, as well as sub-strategy 4.3 on the role of NbS to sustainably address natural disasters and climate change (including wetland rehabilitation for flood prevention and sediment management, mitigating droughts via forest watershed rehabilitation, and preventing coastal erosion through natural coastal ecosystem defences). The NbS-related strategies, targets and approaches outlined in the NESDP are largely aligned with the *8 IUCN NbS Criteria*.

Box 21: Integration of NbS M&E approaches into Thailand's NESDP 2023-2027

Context and rationale: NbS is integrated directly in Thailand's 13th NESDP 2023-2027 under *Milestone 11: Thailand Can Mitigate Risks and Impacts of Natural Disaster and Climate Change*. Other NbS-aligned concepts and approaches also support the integration of measures into policy and practice across other key milestones, including *Milestone 8: Thailand has smart cities as well as safe and liveable regions with sustainable growth*, which provides a rationale for urban NbS, including via sponge city models.

Example intervention: To ensure the effective implementation of the NESDP, the National Economic and Social Development Council (NESDC) are responsible for coordination and monitoring the reporting of activities by line agencies aligned with the NESDP.

As part of its recent review of Milestone 8 via the IMENSA M&E platform, NESDC noted the lack of development in implementing the master plan sub-indicator for sponge cities. As such, NESDC commissioned a study, supported by ADB, to identify possible obstacles for the nationwide implementation and upscaling of sponge city interventions. Findings suggest a lack of clarity for local governments and municipalities on sponge city concepts, as well as challenges in accessing finance. NESDC and ADB subsequently collaborated to develop a framework guideline to encourage and support local governments in piloting and identifying financing solutions for sponge city concepts. A full sponge city program was subsequently launched in 2024.

Outlook: The case of the sponge cities M&E review highlights the need and effectiveness of applying M&E frameworks for NbS mainstreaming. Further reviews by NESDC should seek to identify other NbS-related areas that are not meeting NESDP implementation targets.

Climate, disaster and environment policy: Thailand's main national climate policies comprise the Climate Change Master Plan (CCMP) 2015-2050 and Long-Term Low Greenhouse Gas Emissions Development Strategy (LT-LEDS) (2022), both of which reference NbS/EbA. The LT-LEDS highlights the need for international partnership and NbS support for water resource management and human settlements, to provide for nature-based designs for natural carbon sinks. Where referenced, CCA policies are typically limited to NbS *Criteria 1 (societal challenges) and 2 (design at scale)*.

Thailand is in the process of finalising its draft Climate Change Act and Biodiversity Act, which will establish a legal framework for addressing climate and nature-related challenges and priorities. The Biodiversity Act also serves as a mechanism for integrating biodiversity into relevant sectoral policies, driving ecosystem-based approaches.

For DRR, the 2015 National Disaster Risk Management Plan makes no explicit mention of NbS, however does highlight the importance of ecosystem rehabilitation for disaster resilience (e.g. reforestation, growing ground cover plants for soil erosion protection, introduction of drought-tolerant plants, riverbank vegetation planting, mangrove planting).

Sectoral policy: Whilst the integration of NbS is well advanced in the climate and development planning space, it is somewhat lacking across key sectors, with no explicit reference to NbS in sectoral plans. Despite positive developments and ambitions in the water sector – such as specific guidelines on EbA – Thailand's 20-year National Water Resources Management Master Plan (2018-2037) does not explicitly mention NbS/EbA, nor does it provide specific guidelines or objectives for increasing ecosystem-led capacity, although indirect mentions are made.[48]

Across other priority sectors, the need for upstream watershed forest management and restoration to secure energy infrastructure resilience, is outlined in the Alternative Energy Development Plan (2018-2037), whilst the Twenty-Year Agriculture and Cooperative Strategy (2017-2036) contains no reference to NbS and some limited NbS type concepts and approaches (e.g. agroforestry, organic farming and the need to conserve natural resources).

Table 24: NbS integration into national policy mechanisms in Thailand

Priority policy area	Relevant policy with reference to NbS	Direct (explicit) NbS reference and alignment
Climate	Climate Change Master Plan (CCMP) 2015-2050 (ONEP/MNRE, 2015)	Direct mention of NbS/EbA to promote EbA for fisheries, under Strategy 1 (CCA), 2.3 Ensuring Food Security
	Long-Term Low Greenhouse Gas Emissions Development Strategy (LT-LEDS) (Revised) (ONEP/MNRE, 2022)	Direct mention of NbS/EbA for support needs/ international partnerships, including water resources, human settlements
	NDC Action Plan on Mitigation 2021-2030 (DRAFT) (MNRE, 2024)	Direct mention of NbS for GHG reduction operations.
Disaster	-	No direct/explicit reference
Environment	Environmental Quality Management Plan 2023-2027 (ONEP/MNRE, 2023)	Direct mention of ecosystem approach as one of twelve principles in managing natural resources and the environment
Development planning	13th National Economic and Social Development Plan (NESDP) 2023-2027 (NESDC, 2023)	Direct mention of NbS, including under sub-strategy 3.1 for sustainable agriculture and sub-strategy 4.3 for natural disasters and climate change)
Water resources	-	No direct/explicit reference
Coastal and marine	-	No direct/explicit reference
Agriculture and fisheries	-	No direct/explicit reference
Forests	-	No direct/explicit reference
Ecosystems & biodiversity	-	No direct/explicit reference

[48] IUCN, 2022.

6.3.3. Climate change reporting, monitoring systems and evaluation tools

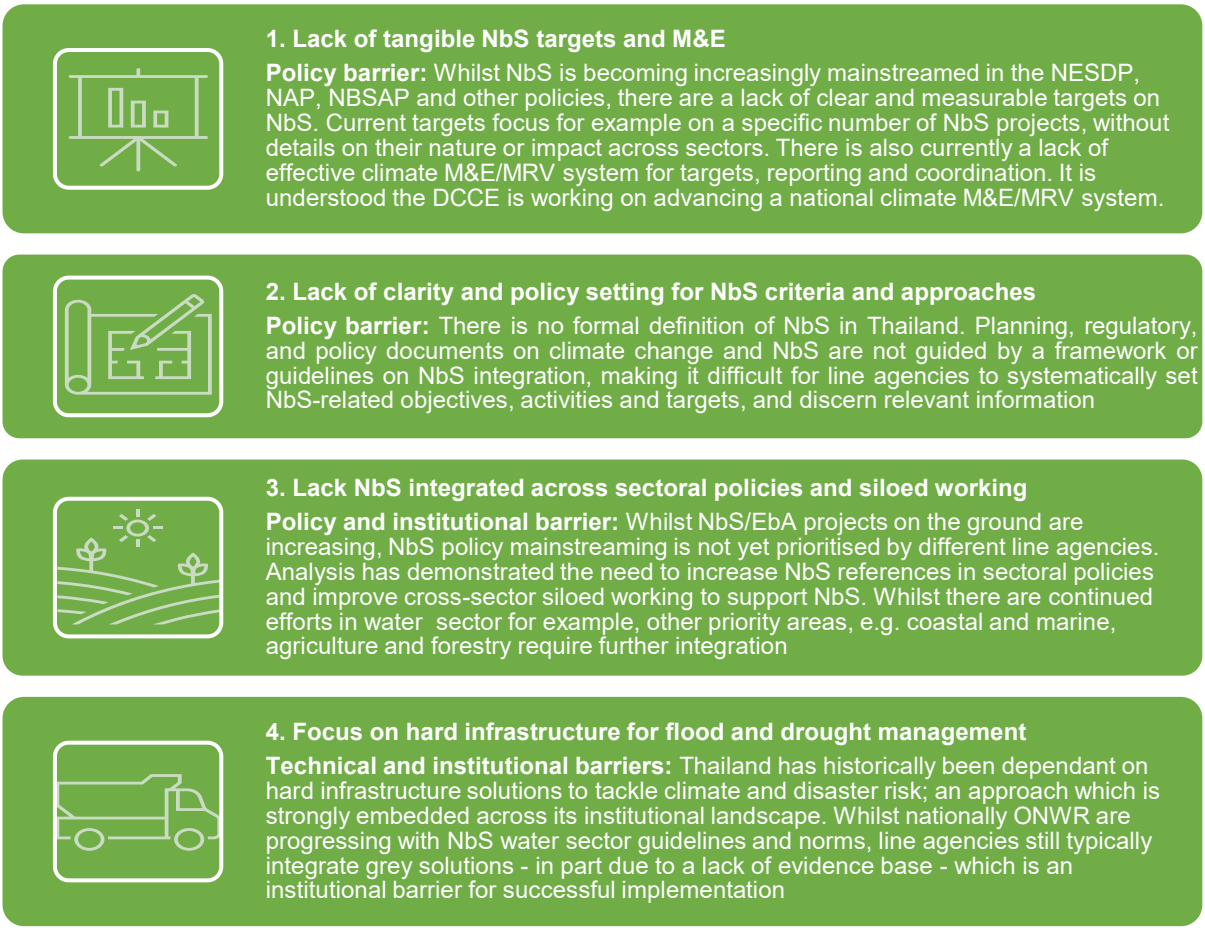
Climate adaptation M&E framework and system: DCCE is currently developing sector-specific climate resilience indicators as part of its adoption of an M&E framework under the new Climate Change Act. These indicators aim to assess the resilience and robustness of sectors against climate and disaster risk, by analysing sectoral vulnerabilities and trends over time. DCCE will work through M&E sectoral focal points to establish results from adaptation planning, implementation and evaluation, as well as to support sector reporting.[49]

IMENSA: Comprises the M&E framework and platform aligned to the NESDP. Government line agencies upload and report on relevant annual projects via IMENSA, including project details, activities, outputs, expected outcomes and targets. A screening and scoring process is undertaken by the NESDC to confirm alignment with NESDP priorities and activities, and to identify any significant delays or challenges with implementation. As NbS is a component of the NESDP, NbS-related projects and aligned targets are continuously monitored by NESDC.

6.4. Barriers and enablers for NbS policy integration

Despite positive steps, several key barriers exist for Thailand to mainstream NbS into policy.

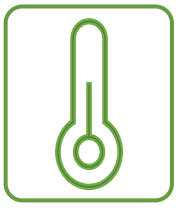
Figure 18: Barriers to NbS policy integration in Thailand



Despite the identified barriers, there are several key enablers and successes that provide the foundation for NbS mainstreaming into the Thai policy landscape.

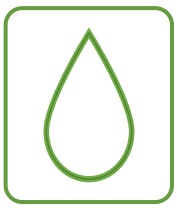
[49] DCCE, 2023

Figure 19: Enablers of NbS policy integration in Thailand



1. NbS integrated into development, climate and biodiversity policy

Policy enabler: NbS is well aligned with the development planning priorities and climate and disaster enabling environment in Thailand, including being central to the 13th NESDP. Thailand also has a strong foundation in climate and biodiversity policy, with its NDC, NAP and NBSAP all outlining NbS priorities, targets and actions.



2. Nascent NbS mainstreaming in the water sector

Policy and institutional enabler: The existing work undertaken by ONWR and others to develop national guidelines and increasingly integrate NbS into programmes and projects provides a strong foundation and rich evidence base to mainstream NbS across the water sector, including into policy. Whilst still in its infancy, this can also set a precedent and demonstration approach for integration across other priority sectors.

3. National NbS interest and evidence for piloting to policy integration

Technical enabler: Ecosystem conservation, restoration and natural resource management is a key priority for development priorities and the climate and disaster agenda in Thailand. The country has a rich and diverse portfolio of projects and programmes aligned with NbS objectives and targets, across a range of sectors and supported by various line agencies and development partners.

6.5. Opportunities for NbS policy integration

Based on stakeholder consultations and a stocktake of NbS policies and practices, several gaps have been identified that may provide opportunities to better integrate NbS priorities and actions across Thailand's national policy mechanisms.

1. National NbS policy mechanism

Consider forming a singular harmonized framework with ministry-specific ownership (e.g. ONEP) at national level, with integrated actions, targets and indicators for priority sectors that build on the NBSAP and NAP. Such a framework could define key approaches and mechanisms would bring greater clarity to future NbS implementation. Tools such as the new DCCE climate M&E system provide an opportunity to better embed NbS-related M&E through the framework. An accompanied action plan could identify key gaps, needs and priorities across key sectors and thematic areas, in the short to medium term.

2. Mainstreaming and upscaling NbS into priority sector policies, strategies and demonstration projects

Going forward, NbS needs to be increasingly integrated into priority sectors, such as water resources and agriculture policies, standards and demonstration on the ground by ONWR, RID and DWR. Due to waters integrated nature, continued leadership from water-related agencies can influence advancements across other sectors. Other priority sectors for NbS policy and practice includes agriculture, natural resource management (forests, wetlands and coastal ecosystems), and urban development. Sectors should aim to develop NbS-related strategies, mainstreaming guidelines and toolkits, to support piloting

3. National platform for NbS policy and practice dialogues and capacity building

Knowledge sharing and capacity building on NbS through national instruments and multi-stakeholder platforms is critical for future mainstreaming. This could comprise an inter-ministerial committee, led by DCCE or ONEP, or be a knowledge hub led by national institutions (e.g. research or university). Building capacity and understanding on NbS is a key priority identified in the NAP and NBSAP, to support the integration of NbS across sectoral and local policies and translate policy into locally-led inclusive practices with stakeholders through pilot, as well as large-scale integrated projects. Capacity building initiatives and programmes should aim to outline relevant tools and processes for the identification, design and implementation of NbS projects, including the multiple benefits of NbS.

6.6. AMS summary

Criteria	Description	Criteria	Description
Priority adaptation sectors	(i) Water resource management, (ii) agriculture and food security, (iii) tourism, (iv) public health, (v) natural resource management, (vi) human settlements and security	*NbS for climate and disaster resilience sectoral focus (apparent focus to date)*	(i) Coastal, (ii) water resources, (iii) urban, (iv) biodiversity
NbS policy integration across reviewed policies	NbS referenced in 8 of 23 policies (35%)	*NbS practical application*	Focus typically on NbS for climate and disaster resilience
Key barriers	NbS capacity; principles and criteria, M&E system; sectoral policy integration; focus on hard infrastructure	*NbS policy successes*	(i) 13th NESDP NbS integration and (ii) NAP
Key opportunities	NbS policy mechanism; cross-sectoral policy and guidelines; NbS mainstreaming into practice; NbS dialogue and capacity building		

7. Viet Nam national policy profile

7.1. Climate hazard and disaster risk context and sector priorities

Viet Nam is one of the most at-risk countries to climate change, faced with a range of complex multi-hazard risks. It has extremely high exposure to riverine, flash, and coastal flooding (ranked joint 1st with Bangladesh), as well as high exposure to tropical cyclones and their associated hazards (ranked 8th) and to a lesser extent drought (ranked 82nd).[50]

Viet Nam's coastal region is one of the most at-risk areas. The country has very high exposure to tropical cyclones, with landfall along its northern coast. It is also one of the world's most vulnerable countries to SLR, with low-lying coastal and river delta regions, such as the Mekong Delta, particularly vulnerable. SLR caused by climate change is expected to intensify future storm surge related risks posed by tropical cyclones, as well as coastal erosion. Livelihoods and industries in Vietnam's low-lying regions are further impacted by land conversion (e.g. for shrimp farming), land subsidence, saline intrusion and ecosystem degradation, which has driven land-use alterations, abandonment and reduced agricultural yields in many provinces.

Inland flood and drought risk provides a significant threat to Viet Nam's agriculture and water sectors. Urban residents and rural ethnic minority groups in mountainous and riverine environments are also at risk, including from fluvial, flash floods and landslides. Despite improvements in recent years, Viet Nam's forests and related ecosystem services are also increasingly degrading due to overexploitation, logging and land use conversion, compounded by climate change. Coastal forests and mangroves have been extensively cleared for human activities and economic development, although restoration activities are underway.

Viet Nam's NAP identifies priorities across all sectors facing climate-induced risks (e.g. agriculture and food security, ecosystems/biodiversity, water resources and coastal/marine, public health, housing and settlements, and technical infrastructure).

Table 25: Priority risk areas in Viet Nam[51]

	**Priority area 1: Flood risk** Vietnam is highly exposed to flooding, with over 60 major events, 5000 deaths and 25 million impacted in the last 50 years. A World Bank study estimates 33% of Viet Nam's population are vulnerable to 1-in-25-year floods, primarily in the Red and Mekong River deltas and urban areas of Hanoi and Ho Chi Minh City
	**Priority area 2: Drought (and heat stress) risk** Drought is a major seasonal challenge, evidenced by the severe drought of 2015-2017. The Central Coast, Northern Delta, Midlands and Central Highlands have high vulnerability and risk to drought, water scarcity, and desertification. Viet Nam also faces increasing exposure to urban heat stress
	**Priority area 3: Ecosystem degradation (forest, wetland and biodiversity loss)** Vietnam's forest and wetalnd landscapes face challenges from competing land uses, resource overexploitation, and limited capacity in forest governance and management. Deforestation and forest degradation persist in regions such as the Central Highlands
	**Priority area 4: Coastal-related risks (cylcones, SLR, saline intrusion and erosion)** Tropical cyclones pose the greatest threat, with over 80 storm events recorded between 1953 and 2010, impacting approximately 45 million people and resulting in nearly 19,000 fatalities (World Bank, 2021). SLR, subsidence and inundation increasingly threaten coastal zones, such as the Mekong Delta

[50] World Bank, 2021b.
[51] Data sources: World Bank, 2021b.

7.2. National NbS stocktake

Like its Mekong neighbours, Viet Nam has historically focused on hard infrastructure measures to tackle its climate and disaster challenges. This has ranged from hydropower dams, water storage reservoirs and irrigation infrastructure for water security, upstream flood and drought management, to dykes, embankments and sluice gates along its coastline to deal with coastal threats. However, prominent institutions such as the Ministry of Agriculture and Environment (MAE) are increasingly recognising and mainstreaming EbA approaches at the national level. In fact, as early as 2013, the Institute of Strategy and Policy on Agriculture and Environment published a technical guideline on EbA mainstreaming. Despite this, challenges persist with implementation at the provincial and district level, where awareness of NbS and EbA approaches, and their multiple benefits, are still relatively limited.[52]

The Mekong Delta is a strategic national priority area for applying NbS and hybrid interventions at scale, to build resilience to SLR, coastal flooding, saline intrusion and coastal erosion. A strategic focus in the delta is how to develop NbS projects at scale, for example through flood-based agriculture and mangrove-shrimp farming systems, that have tangible landscape scale benefits (Box 12). National and provincial line agencies and development partners are also working to protect the coastline through mangrove restoration as opposed to hard infrastructure, with Ca Mau province in the Mekong Delta a prime example.

Box 22: Building good practice portfolios – EbA for coastal urban resilience in Viet Nam

Relevant sector and landscape: Urban, agriculture, water resources (coastal and delta)

NbS approach: EbA and green infrastructure

Context and rationale: Urban and rural communities impacted by coastal hazards have become a particular focus of NbS demonstration projects in recent years in Viet Nam. The government is prioritising smart, resilient eco-cities, as well as sustainable local livelihood models.

Example initiatives: Initiatives are being supported by partners for conceptualising and piloting NbS interventions from Can Tho in the Mekong Delta, central coastal cities such as Hue, to Haiphong port in the north of the country. Prioritised NbS have included riverbank restoration, urban greening and flooded parks. Within peri-urban and rural agricultural areas, projects have explored mangrove restoration, wetland rehabilitation and scalable sustainable livelihood models (e.g. mangrove-shrimp farming or beekeeping).

Outlook: A key next step is mainstreaming such interventions into local climate action plans, and the development of coastal NbS guidelines and platforms to share and build coastal NbS knowledge, demonstration, standards and evidence-based learning.

The Central Highlands and Red River Delta are similarly important regions for resilience building, with critical natural resources (such as forests, rivers and wetlands), economic activities (energy, agriculture, mining, manufacturing and textiles) and infrastructure (settlements, hydropower dams, and irrigation networks and reservoirs). Hybrid solutions are seen as some of the most promising options for regions such as these. Several pilot programmes and projects have been developed to integrate NbS into conventional decision-making and to demonstrate effectiveness on the ground, including across riverine, reservoir, upland, agricultural (and coastal) landscapes. Widespread afforestation, agroforestry and forest restoration resilience building measures have also been prioritised and implemented across various provinces. For example, after several damaging typhoons hit the country in 2020, the Prime Minister called for the planting of 1 billion trees nationwide between 2021-2025 (*Decision No. 524/QD-TTg*), to build disaster resilience. Although forest cover continues to increase, the quality of natural forests continues to deteriorate. This is partly due to the expansion of agriculture and plantation forests, as well as the way 'forest' (includes palm and bamboo plantations) is officially defined and applied across policy and planning.

[52] Government agencies and partners largely refer to EbA, with NbS being still a relatively new concept.

7.3. Policies and platforms relevant to NbS

Coordination of climate change and green growth policy formulation and implementation is primarily the responsibility of the National Committee on Climate Change (NCCC), which is led by the Prime Minister, Deputy Prime Minister and the Minister of MAE. MAE, through the Department of Climate Change (DCC), and Ministry of Planning and Investment (MPI) are the two agencies responsible for coordinating the development of climate change and green growth policies and actions. In terms of NbS, as outlined in Viet Nam's NAP and NAP M&E framework, MAE (formerly MARD) monitors EbA-related models and activities in the country.

7.3.1. International climate, disaster and biodiversity-related policy mechanisms

All of Viet Nam's key international policies acknowledge the importance of taken an NbS and EbA for climate and disaster resilience and biodiversity conservation indicating the countries strong global policy commitment. Its NDC, NAP and NBSAP are collectively aligned with all *8 IUCN NbS Criteria*, acknowledging the importance for NbS principles that incorporate local communities, vulnerable groups and sustainable livelihoods, biodiversity conservation, resource mobilisation and capacity building across a range of priority sectors. Viet Nam also notes the need to promote the development and implementation of NbS/EbA in the future, acknowledging the general absence of these approaches to date. Therefore, the next challenging step will be translating national and sub-national policy into practice.

Table 26: NbS integration into international policy commitments in Viet Nam

Policy document	Institution	Date and status	NbS relevance
NDC	MAE	2022 (NDC 2.0)	**Direct** mention of nature-based and ecosystem-based models for climate adaptation Various NbS-related approaches and concepts mentioned, including for CCM (linked to agroforestry models) and CCA (e.g. adaptive ecosystem models for sustainable livelihoods)
NAP (for the period 2021-2030 with a vision to 2050)		2025 (updated)	**Direct** mention of NbS and EbA for CCA, including (i) nature-based and ecosystem-based models for forest ecosystems and nature reserves; and (ii) nature-based and ecosystem-based models for CCA infrastructure. NbS and EbA highlighted as resource mobilisation and engagement need for CCA. Specific M&E indicator 2.5 under resilience and capacity for CCA on *number and scale of CCA ecosystem-based models deployed* Various NbS-related approaches and concepts mentioned (e.g. IWRM, ecosystem-based adaptation livestock and climate-smart agriculture models, integrated river basin planning, sustainable livelihood models, traditional culture and indigenous knowledge)
NBSAP (National Biodiversity Strategy to 2030, Vision to 2050)		2020	**Direct** mention of NbS, EbA and ecosystem-based approaches, highlighted as key opportunities and challenges in Viet Nam. Various NbS-related approaches and concepts mentioned (e.g. ICZM, community-based management, conservation and development of biodiversity)

7.3.2. National crosscutting and sectoral policy mechanisms across priority risk areas

Development policy: Viet Nam's Socio-economic Development Plan 2021-2025 does not directly provide reference to NbS/EbA, with limited consideration for wider ecosystem-based approaches. The plan does suggest developing roadmaps, mechanisms, policies to form and operate a model of green economy, which could provide opportunities for NbS frameworks.

Climate, disaster and environment policy: At the national level, Viet Nam has demonstrated dedication towards climate and disaster action, through a range of policy mechanisms. Mainstreaming climate into development planning is a requirement emphasised in the Law on Environmental Protection and National Master Plan on Environmental Protection for 2021-2030. Climate resilience policy progress is however slow, with a lack of application from sectoral agencies, provinces and municipalities. Adaptation efforts largely remain at the policy level, lacking clear guidance for local implementation.

The National Master Plan on Environmental Protection provides for the mainstreaming of NbS across various priority areas, advocating for the application of ecosystem-based models (*scalability*) across different regions and administrative divisions. The strategy also highlights gender equality and biodiversity benefits.

In terms of NbS, whilst there is no mention of either NbS/EbA in the National Climate Change Strategy (NCCS) to 2050, important NbS-related concepts and approaches highlighted include a target to increase forest cover by over 42% by 2030 (including reference to improved forest quality). There is also priority given to the construction of green infrastructure and the enhancement of urban greening for climate and disaster resilience.

Box 23: Mainstreaming NbS for water resource and agricultural resilience in the Mekong Delta – sub-national policy approaches

The 2017 *Resolution No.120/NQ-CP on the sustainable development of the Mekong Delta and adapting to climate change* highlights the need to promote sustainable natural resource management and provided the foundation for the development of the *Mekong River delta plan in a period of 2021-2030 with a vision to 2050.* A major milestone was later made in 2021, with *Decision 1662/QD-TTg on the protection and development of coastal forests in response to climate change from 2021-2030*. This decision aims to enhance coastal forest functions for CCA, DRR, biodiversity conservation, and economic growth. Goals include afforesting 20,000 ha, restoring 15,000 ha of degraded forests, and supporting sustainable livelihoods for coastal forest conservation.

Sectoral policy: Of the AMS reviewed in this study, Viet Nam is a lead country to retain two laws (Law on Environmental Protection and Law on Marine and Island Resources and Environment, MAE) endorsing an ecosystem approach to CCA and the integrated management of marine and island resources, respectively.

Table 27: NbS integration into national policy frameworks in Viet Nam

Priority policy area	Relevant policy with reference to NbS	Direct (explicit) NbS reference and alignment
Climate	-	No direct/explicit reference
Disaster	-	No direct/explicit reference
Environment	Law on Environmental Protection (MoNRE, 2020)	Direct mention of ecosystem-based climate change adaptation, under Article 90, climate change adaptation
	National Environmental Protection Strategy until 2030 and Vision until 2050 (MoNRE, 2022)	Direct mention of NbS and EbA under Task 4a of the strategy (environmental protection for CCA and CCM), to consolidate, develop, and duplicate climate change EbA solutions and models, NbS, biodiversity preservation,

		and environmental remediation, suitable with regions and administrative divisions
Development planning	-	No direct/explicit reference
Water resources	-	No direct/explicit reference
Coastal and marine	Law on Marine and Island Resources and Environment (MoNRE, 2018)	Direct mention of ecosystem approach for the integrated management of marine and island resources
Agriculture and fisheries	Scheme for Environmental Protection in Fishery Sector in the period of 2021-2030 (MARD, 2022)	Direct mention of EbA to climate change in aquaculture production
Forests	-	No direct/explicit reference
Ecosystems & biodiversity	-	No direct/explicit reference

7.3.3. Climate change reporting, monitoring systems and evaluation tools

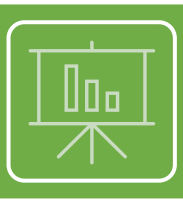
M&E framework: As outlined in the NAP, the national adaptation M&E system collects information across all levels, aggregating data from provinces, ministries and sectors through submitted reports. DCC synthesises these results, including data from its own managed programmes and projects, to evaluate and monitor the country's climate activities comprehensively. At the ministerial and sectoral levels, climate focal points oversee the M&E of adaptation activities. At the local level, provincial Departments of Agriculture and Environment act as focal points, synthesising and evaluating adaptation efforts.

7.4. Barriers and enablers for NbS policy integration

As identified via stakeholder consultations and policy reviews, Cambodia faces several key challenges for the integration of NbS approaches and targets in national and sectoral policies.

Despite the identified barriers, there are several key enablers and successes that provide the foundation for NbS mainstreaming into Viet Nam's policy landscape. Key policy barriers and enablers identified in the study are presented below.

Figure 20: Barriers to NbS policy integration in Viet Nam



1. Lack of NbS integration into development policy and targets

Policy barrier: Unlike various other AMS, there appears to be no clear mention of NbS in Viet Nam's core national development or climate policies (for climate only in its international commitments to the UNFCCC). This results in an absence of direction and tangible targets for sectors to follow.

2. Lack of clarity and policy setting for nbs criteria and approaches

Policy barrier: There is no formal policy mechanism or framework to define and guide NbS activities in Viet Nam. Integrating NbS into regulatory and policy documents and across sectors are therefore not guided by a common and coordinated NbS approach, making it difficult for line agencies to identify clear concepts, priorities and actions.

3. Lack of NbS integrated across sectoral policies

Institutional (capacity) and policy barrier: Whilst NbS/EbA projects on the ground are increasing, NbS policy mainstreaming is not yet prioritised by different line agencies, with no strong reference to NbS across priority adaptation sectors. Analysis has demonstrated the need to increase NbS references in sectoral policies. In addition, there is a lack of knowledge and capacity to develop sectoral NbS (and adaptation) plans.

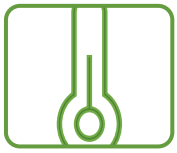
4. Lack of dedicated institutional NbS capacity and unclear mandate

Institutional barrier: There is a lack of dedicated lead agency for NbS mainstreaming, and also a lack of expertise for discourse and coordination. Prior to the merger between MoNRE and MARD to MAE, MARD (not DCC) was listed as the main agency responsible for recording NbS-related activities. Challenges exist in facilitating and driving cross-sectoral enagement and the multi-sectoral nature of NbS (e.g. across urban, transport, coastal/marine sectors), although the combining of the ministries may help with this.

5. Focus on hard infrastructure for flood and drought management

Technical and institutional barrier: viet nam has historically been heavily dependant on hard infrastructure solutions, such as irrigation dams, weirs and culverts, to tackle climate and disaster risk. This approach is strongly embedded across its institutional landscape. Infrastructure is often not designed to withstand extreme events, with short-term reactive responses often overiding longer-term preventive approaches.

Figure 21: Enablers of NbS policy integration in Viet Nam



1. National environment and climate policies

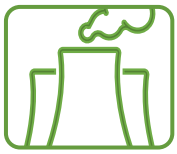
Policy enabler: Viet Nam has already embedded NbS into its key national environmental policies and international climate policies. For example, NbS is already referenced as a key element in the NAP, with MAE taking on the responsibility for monitoring NbS implementation. There is also clear interest in mainstreaming NbS across different line agencies.

2. Strategic focus on Mekong Region

Institutional enabler: Whilst there has been limited NbS implementation, the advancement of related projects and activities in coastal areas, including coastal cities and agricultural areas in the Mekong Delta, has shown important benefits and has been well received by government.

3. National government platform for NbS policy dialogues

Institutional enabler: In addition, within MoNRE itself, there is already a strong institution in ISPOAE, who have the mandate to push forward knowledge, capacity building and awareness raising on NbS.



4. Focus on NbS for climate change mitigation

Institutional and policy enabler: Increasing climate and disaster resilience and building environmental sustainability is a key priority for Viet Nam. Climate policies and dialogues outline strong ambitions for FOLU related carbon sink objectives, including forest-based targets.

7.5. Opportunities for NbS policy integration

Based on stakeholder consultations and a stocktake of NbS policies and practices, several gaps have been identified that may provide opportunities to better integrate NbS priorities and actions across Viet Nam's national policy mechanisms.

1. National development and climate policies

There is an opportunity in Viet Nam to better embed NbS into its National Socioeconomic Development Plan from 2025-2029, as well as its NCCS to 2050, building on existing priorities in its National Environmental Protection Strategy. This can pave the way for directed mainstreaming of NbS into priority sectoral policies and practices.

2. Strategic focus on Mekong region to build NbS evidence

The Mekong Delta is a priority for climate and disaster resilience for Viet Nam. More pilot programmes/projects to demonstrate NbS scalability and effectiveness, along with sectoral NbS strategies, guidelines, standards and tools for agriculture, water resources, urban and coastal sectors and landscapes where appropriate. This can build an evidence based at the regional level for wider sharing and lessons.

3. National platform for NbS policy dialogues

Building spaces for dialogues with NGOs, local community groups and development organisations - at this stage this may include research symposiums, national capacity building workshops, stocktaking, priority action planning and knowledge sharing conferences - can foster positive outcomes for NbS policy. Knowledge sharing through multi-stakeholder platforms is critical for future NbS mainstreaming. Such a platform could be led by ISPOAE.

. National NbS policy mechanism

Consider forming a singular harmonised NbS policy circular or framework, and action plan, with ministry-specific ownership at the national level, with integrated actions, targets, indicators and M&E for priority sectors. This could be led by MAE (ISPOAE and DCC), as lead NbS agency in the NAP. Such a framework could define key approaches and mechanisms would bring greater clarity to future NbS implementation and can be aligned with existing or new policies (e.g. via formal Decision). An accompanied action plan could identify key gaps, needs and priorities across key sectors and thematic areas, in the short to medium term.

7.6. AMS summary

Criteria	Description	Criteria	Description
Priority adaptation sectors	(i) agriculture, (ii) food security, (iii) ecosystems/biodiversity, (iv) water resources, (v) public health, (vi) housing, (vii) technical infrastructure	*NbS for climate and disaster resilience sectoral focus (apparent focus to date)*	(i) Agriculture/food security (Mekong Delta), (ii) urban/housing (in particular coastal cities)
NbS policy integration	NbS referenced in 8 of 25 policies (28%) (strong NDC, NAP, NBSAP commitments)	*NbS practical application*	Focused on CCM, CCA and DRR (CCM for forest restoration)
Key barriers	NbS capacity; principles, criteria; sectoral policy integration; hard infrastructure focus	*NbS policy successes*	(i) NAP, (ii) National Environmental Protection Strategy until 2030
Key opportunities	NbS climate and development policy integration; NbS prioritisation and evidence base; policy dialogues; policy framework		

Annex 2: Detailed NbS policy Review and analysis for each AMS

NbS policy search criteria

NbS terminology

Key term	Word-specific searches applied
Nature-based Solutions (NbS)	*Nature-based Solutions; Nature-based Solution; Nature based Solutions; Nature based Solution; NbS*
Ecosystem-based Adaptation (EbA)	*Ecosystem-based Adaptation; Ecosystem-based Adaptations; Ecosystem based Adaptations; Ecosystem based Adaptation; EbA*
Ecosystem-based Disaster Risk Reduction (EcoDRR)	*Ecosystem-based Disaster Risk Reduction; Ecosystem based Disaster Risk Reduction; EcoDRR*
Ecosystem-based mitigation (EbM)	*Ecosystem-based Mitigation; Ecosystem-based Mitigations; Ecosystem based Mitigations; Ecosystem based Mitigation; EbM*
Ecosystem-based Approach	*Ecosystem-based Approach; Ecosystem-based Approaches; Ecosystem based Approach; Ecosystem based Approaches*

Associated NbS type concepts and approaches considered[53]

Category	Example concept considered in searches
Ecosystem-related	Ecosystem accounting; Ecosystem approach; Ecosystem-based management; Ecosystem-based solutions; Ecosystem services
Nature-related	Agroecology; Agroforestry; Biodiversity (conservation); Bio(dynamic) farming; Climate-smart agriculture; Community based natural resource management; Ecological pest management; Forest Landscape Restoration (FLR)/rewilding; Indigenous (people's) knowledge; Integrated Biodiversity Management (IBM); Integrated Coastal Zone Management (ICZM); Integrated Forest Landscape Management (IFLM); Integrated Marine Spatial Planning (IMSP); Integrated Natural Resource Management (INRM); Integrated River Basin Management (IRBM); Integrated Watershed Management (IWM); Integrated Water Resources Management (IWRM); Landscape restoration; Natural capital (accounting); Natural heritage (protection); Protected area management; Other Effective Area-based Conservation Measures (OECMs); Regenerative farming; Sustainable grazing management; Sustainable Land Management (SLM); Sustainable (natural) resource use; Traditional and local knowledge; Working with natural processes; Working with nature
Infrastructure-related	Green infrastructure; Green (hybrid) infrastructure; Natural infrastructure; Blue infrastructure; Blue-green infrastructure; Ecological engineering; Engineering with nature (EwN); Sponge cities

[53] Identified based on IUCN Global Standard (2020) and UNHDRR (2023) recommended selection criteria

ASEAN

Policy/ framework	ASEAN body/ institution	NbS alignment
Environment division (ASCC)		
ASEAN Strategic Plan on Environment (ASPEN) 2016-2025	ASOEN	Direct mention of ecosystem-based approaches under Strategic Priority 1 (Nature Conservation and Biodiversity) Objective 2 (of 2): • To promote natural resiliency and use of integrated ecosystem-based approaches (to climate change adaptation and disaster risk reduction) Extensive indirect mentions
ASEAN Biodiversity Plan (2024)	AWGNCB / ACB	Direct mention of NbS under Target 8 Strategies and Key Actions: • Stocktake on NbS and/or ecosystem-based approaches in the ASEAN, including ASEAN Heritage Parks • Develop an e-learning course on NbS Target 12 Strategies and Key Actions – 'Enhance Green Spaces and Urban Planning for Human Well-Being and Biodiversity': • Promote awareness of NbS – its benefits, challenges and considerations Target 20 Strategies and Key Actions – '*Strengthen Capacity-Building, Technology Transfer, and Scientific and Technical Cooperation for Biodiversity*': • Promote capacity development on NbS Indirect mentions e.g. Target 2 (*good practices for terrestrial, inland water, coastal and marine ecosystem restoration*), Target 3 (*biodiversity corridors, and affective area-based conservation measures including ASEAN Urban Wetlands Network, and the ASEAN Flyway Network Sites*), Target 10 (*Integrate biodiversity considerations (*ecosystem-based approaches*) in the plans and processes of agriculture, fisheries, and forestry sectors*), Target 11 (*compile case studies and best practices on the economic valuation of biodiversity, nature, and ecosystem services*)
ASEAN Heritage Parks Regional Action Plan 2023-2030 (under development)	ACB	Direct mention of NbS for terrestrial protected areas, ASEAN Heritage Sites and buffer zone management relating to the Plan of Action to Implement the ASEAN-EU Strategic Partnership (2023-2027)
ASEAN Peatland Management Strategy 2023-2030	ASEAN Task Force on Peatlands/ ASCC	Direct mention of NbS: • Under principles of integrated peatland management, including in related to sustainable financing mechanisms to support the conservation,

		restoration and use of NbS to mitigate and adapt to climate change • In reference applying the Ramsar Criteria and special attention to peatlands with high potential as "nature-based solutions" to reduce the risks of impacts related to climate change including climate change effects
ASEAN Blue Economy Framework (2023)		Direct mention of NbS under Blue Strategy 1 (Blue Conservation Management) development area 3: Increasing resilience and strengthening disaster risk management (including ensuring that sufficient NbS are applied to protect coastal environments, communities, and valuable natural resources)
ASEAN Strategy on sustainable Mangrove ecosystem Management 2024-2030	AWGFM/ ASOF	Direct mention of NbS/EbA and ecosystem-based approaches, highlighted as Scientific-based Management concepts
Food, Agriculture and Forestry Division (AEC)		
Vision and Strategic Plan for ASEAN Cooperation in Food, Agriculture and Forestry (2016-2025)		No direct mention of NbS/EbA. Various indirect mention (e.g. identifying and protecting natural catchments/watersheds, tree planting and other natural approaches for flood control)
Other Divisions (under APSC, AEC, ASCC or crosscutting networks)		
ASEAN Socio-Cultural Community Strategic Plan (2025)	ASCC	Direct mention of NbS and ecosystem-based approach under Objective 11.2 (Strategic Measure 11.2.3) and Objective 12.2 (Strategic Measure 12.2.3): • 11.2.3: Enhance mitigation and adaptation to climate change and reduce vulnerability by promoting climate resilience and adaptive capacity, implementing NbS and ecosystem-based approaches through active engagement of the ASEAN Community-based Climate Action • 12.2.3: Intensify efforts in utilising and harnessing the full potential of science, technology, and innovation in strengthening climate, disaster resilient infrastructure, and NbS for sustainable development to realise ASEAN as a centre of excellence for disaster management
ASEAN Economic Community Strategic Plan 2026-2030	AEC	No direct mention of NbS/EbA
ASEAN Plan of Action on Science,	ASEAN Committee on Science,	Direct mention of NbS as a Strategic Measure under the Regional Connectivity Objective:

Technology and Innovation 2026-2035	Technology, and Innovation (COSTI)	• Intensify efforts in utilising and harnessing the full potential of STI in strengthening climate, disaster resilient infrastructure, and NbS for sustainable development to realise ASEAN as a centre of excellence for disaster management
ASEAN Sustainable Urbanisation Strategy (2018)	ASEAN Smart Cities Network (ASCN)	No direct mention of NbS/EbA. Limited indirect mention (e.g. identifying and protecting natural catchments/watersheds, tree planting and other natural approaches for flood control)
Action Roadmap for Sustainable Tourism Development in ASEAN (2024)	ASEAN Tourism Unit	Direct mention of NbS under Key Priority 3 (Resource Efficiency and Environmental Sustainability), Strategic Area 3.2: • Environmental preservation – leveraging NbS further enhances environmental protection and promotes carbon removal in destinations. • Strategic Area 3.2.2 – invest in NbS ○ 3.2.2.1 In urban destinations. create and expand green spaces (parks, green roots, green walls) and community gardens ○ 3.2.2.2 In coastal destinations, incorporate natural features such as dunes, mangroves and wetlands to protect from sea-level rise and storm surges Extensive indirect mention of NbS (e.g. balance tourisms development with environmental conservation, restore and protect coastal nature features, protect wildlife, training on environmental conservation to tourism businesses in protected areas)

Cambodia

Policy document	Institution	Date & status	NbS relevance
Climate			
Cambodia Climate Change Strategic Plan (2024-2033)	MoE	2024	Direct mention of NbS, including under Strategic Objective 2.3 on strengthening ecosystem conservation and sustainable natural resource management Specific activities are outlined for NbS e.g. under Strategic Outcome 1.5 (mitigation) 'increase urban green space and urban greening programme utilising NbS' and 2.1 (adaptation) 'strengthen resilience measures across all economic sectors'
Long-term Strategy for Carbon Neutrality (LTS4CN)	NCSD, MoE	2021	No direct mention of NbS/EbA. Identifies adaptation benefits (financial) and co-benefits in the FOLU sector via stopping

			deforestation, sequestration and agroforestry
National Adaptation Plan Financing Framework and Implementation Plan	NCSD, MoE	2017	Direct mention of EbA potential for forestry sector. Also, EbA potential funding sources for aquaculture and fisheries
Disaster			
Law on Disaster Management	NCDM	2015	Mentions obligation of individuals to maintain the living and natural environment
National Action Plan for Disaster Risk Reduction (2024-2028)	NCDM	2024	No direct mention of NbS/EbA. Limited NbS-related measures mentioned (e.g. flood and drought management in community protected areas, forest fire prevention)
Environment			
Law on Environmental Protection and Natural Resource Management	MoE	2020	No direct/explicit reference
Code on Environment and Natural Resources	MoE	2023	No direct/explicit reference
Circular Strategy on Environment 2023-2028	MoE	2024	No direct/explicit reference (Strategy 2 focuses on greening)
Development planning			
Law on Land Management, Urban Planning and Construction	MoP	1994	No direct/explicit reference
National Strategic Development Plan (NSDP) (2024–2028)	MoP	2024	No direct mention of NbS/EbA. Limited indirect mention (sustainable management of natural resources, measures to prevent and protect disaster hazard in natural protection areas)
National Strategic Plan on Green Growth (NSPGG) 2013-2030	NCGG and MoE	2013	No direct mention of NbS/EbA Strategic direction 4 on Green Environment and Natural Resources Management
Rectangular Strategy Phase 4 (RS-IV) 2019- 2023	MFAIC	2018	No direct mention of NbS/EbA Rectangle 4. Inclusive and Sustainable Development – Side 2 (*The Sustainable Management of Natural Resource and Culture*); and Side 4 (*Ensuring the environmental*

			sustainability and pre-emptive response to the climate change)
Pentagonal Strategy – Phase 1	MFAIC	2023	Direct mention of the use of NbS under Side 2 (*Sustainable Management of Natural Resources, Cultural Heritages, and Tourism*), item 6; and Side 5 (*Ensuring Environmental Sustainability and Readiness for Responding to Climate Change, as well as Promotion of Green Economy*), item 3.
Water resources			
Law on Water Resources Management	MOWRAM	2007	No direct mention of NbS/EbA
Agriculture and fisheries			
Law on Agricultural Cooperative	MAFF	2013	No direct mention of NbS/EbA
Law on Fisheries	MAFF	2006	No direct mention of NbS/EbA
Strategic Planning Framework for Fisheries 2015- 2024	MAFF	2015	Direct mention of EbA linked to climate change policy
Forests			
Law on Forestry	MAFF	2002	No direct mention of NbS/EbA. Various indirect mentions
National Forest Program 2010- 2029	MAFF	2010	No direct mention of NbS/EbA. Various indirect mentions (although mention of forest-ecosystem climate change mitigation and adaptation)
Cambodia National REDD+ Strategy (2017-2026)	MoE, MAFF and NCSD	2017	No direct mention of NbS/EbA. Various indirect mentions
Ecosystems and biodiversity			
National Protected Area Strategic Management Plan (NPASMP) 2017–2031	MoE	2017	No direct mention of NbS/EbA. Various indirect mentions

Indonesia

Policy document	Institution	Date & status	NbS relevance
Climate			

National Adaptation Plan	Kementerian PPN / BAPPENAS	2019	Direct mention of ecosystem-based adaptation, including for climate-resilience infrastructure and capacity building strategic priorities
National Action Plan for Climate Change Adaptation (RAN-API)	Kementerian PPN / BAPPENAS	2014	No direct mention of NbS/EbA. Various indirect mentions (e.g. ecosystem resilience and ecosystem for climate change adaptation)
Indonesia Long-Term Strategy for Low Carbon and Climate Resilience 2050 (LTS-LCCR)	MoEF	2021	No direct mention of NbS/EbA. Various indirect mentions (e.g. ecosystem restoration, sustainable landscape management, integrated terrestrial and marine ecosystem management and conservation)
Climate Resilience Development Policy 2020-2045 (ICRDPF)	Kementerian PPN / BAPPENAS	2020	No direct mention of NbS/EbA. Various indirect mentions
Disaster			
Law on Disaster Management (UU No. 24/2007)	NDMA	2007	No direct mention of NbS/EbA
Disaster Management Master Plan for 2020-2044	NDMA	2020	No direct mention of NbS/EbA. Limited indirect mentions (e.g. coastal ecosystem management)
Environment			
Law on Environmental Protection and Management (UU No. 32/2009) (Environmental Law)	MoEF	2009	No direct mention of NbS/EbA. Various indirect mentions
Development planning			
Law on Spatial Planning (UU No. 26/2007)	??	2007	No direct mention of NbS/EbA. Various indirect mentions (e.g. protected area management, urban green open space)
National Long-Term Development Plan (RPJPN) 2025–2045	Kementerian PPN/ BAPPENAS	2025	Direct mention of NbS under its resilience to disasters and climate change policy direction, focused on NbS for coastal areas, including via protected areas
National Roadmap and Action Plan Economy Circular Indonesia 2025-2045	Kementerian PPN / BAPPENAS	2024	No direct mention of NbS/EbA
Water resources			
Law on Water Resource (UU No. 17/2019) (Water Law)	Kementerian PURR	2019	No direct mention of NbS/EbA. Various indirect mentions (e.g. IWRM, nature conservation)

National Water Resources Policy (No. 37/2023)	Kementerian PURR / Kementerian PPN/ BAPPENAS	2023	Direct mention of ecosystem approach for water networks. Various indirect mentions (e.g. ecosystem protection and restoration for water resources)
National Strategy for Wetlands Management in Indonesia: Peatland and Mangrove Ecosystems	Kementerian PPN / BAPPENAS	2023	No direct mention of NbS/EbA. Various indirect mentions (e.g. mangrove ecosystem management, peatland restoration)
Coastal and marine			
Law on the Management of Coastal Area and Small Islands (UU No. 1/2014)	MMAF (KKP)	2014	No direct mention of NbS/EbA. Various indirect mentions (e.g. ecosystem conservation and restoration)
Marine protected areas (MPA) vision 2030 and roadmap to MPA management	MMAF (KKP)	2020	No direct mention of NbS/EbA. Various indirect mentions
National Maritime Policy	MMAF (KKP	2017	No direct mention of NbS/EbA. Various indirect mentions (e.g. ecosystem conservation, integrated management)
Indonesia Blue Economy Roadmap (2nd Edition)	Kementerian PPN / BAPPENAS	2023	Direct mention of ecosystem approaches. Various indirect mentions (e.g. ecosystem approach to fisheries management and aquaculture, integrated marine conservation and area-based management approaches, ecosystem-based marine spatial planning)
Agriculture			
Grand Strategy of Agricultural Development 2015-2045 (SIPP)	MoA	2014	Direct mention of NbS, including related to provisioning ecosystem services
Forests			
Forestry Law (UU No.41/1999)	MoEF	1999	No direct mention of NbS/EbA. Various indirect mentions
Law on the Prevention and Eradication of Forest Destruction (UU No. 18/2013)	MoEF	2013	No direct mention of NbS/EbA.
Indonesia's FOLU Net Sink 2030 strategy	MoEF	2023	Direct mention of NbS, including peatland and mangrove ecosystem roles for climate mitigation

Revised National Forestry Plan 2011-2030	MoF	2011	No direct mention of NbS/EbA. Various indirect mentions
Ecosystems and biodiversity			
Law on Conservation of Natural Resources and their Ecosystems (UU No. 5/1990)	MoEF	1990	No direct mention of NbS/EbA. Various indirect mentions

Lao PDR

Policy document	Institution	Date and status	NbS relevance
Climate			
Decree on Climate Change	MoNRE	2019	No direct mention of NbS/EbA.
National Adaptation Programme of Action to Climate Change (NAPA)	MoNRE	2009	No direct mention of NbS/EbA. Various indirect mentions (e.g. reforestation, restoration of watershed ecosystems, agricultural ecosystem management)
National Strategy on Climate Change towards 2030	MoNRE	2023	No direct mention of NbS/EbA. Various indirect mentions (e.g. ecosystem-based urban resilience, forests, wetlands, peatlands and carbonated soils rehabilitation, agroforestry, city greening)
Disaster			
National Strategy on Disaster Risk Reduction 2021-2030	NDMO	2021	Direct mention of NbS under Strategy 1, Objective 5 for the *development of a policy and technical framework for hybrid and nature-based solutions* Various indirect mentions (e.g. maintenance of green natural infrastructure, capacity building for hybrid and nature-based risk reduction)
Environment			
Environmental Protection Law	MoNRE	2013	No direct mention of NbS/EbA. Various indirect mentions
Natural Resources and Environment Strategy 2016-2025	MoNRE	2015	No direct mention of NbS/EbA. Various indirect mentions (e.g. IWRM, forest restoration, urban greening)
Development planning			
2030 Vision and 10-Year Socio Economic Development Strategy (2016-2025)	MPI	2016	No direct mention of NbS/EbA. Indirect mentions (e.g. forest restoration, wetland management)

9th Five-year National Socio-Economic Development Plan (2021-2025)	MPI	2021	No direct mention of NbS/EbA. Various indirect mentions (e.g. nature and biodiversity conservation and green agriculture, forest restoration, agrofrestry)
National Green Growth Strategy of the Lao PDR till 2030	Secretariat for Formulation of National Green Growth Strategy	2018	No direct mention of NbS/EbA. Various indirect mentions (e.g. protection of forest and soil carbon, protect, forest restoration (quality))
Water resources			
Vision to 2040 and National Water Resources and River Management and Use Strategy towards 2030	MoNRE	2023	No direct mention of NbS/EbA. Various indirect mentions (e.g. IWRM, integrated watershed management and restoration, headwater forest and riparian restoration)
Agriculture and fisheries			
Law on Agriculture	MAF	1998	No direct mention of NbS/EbA.
Fisheries Law	MAF	2009	No direct mention of NbS/EbA. Limited indirect mention (e.g. fish conservative zones and habitats)
National Agro-Biodiversity Programme and Action Plan II 2015-2025	MAF	2015	No direct mention of NbS/EbA. Extensive indirect mention (e.g. biodiversity corridors, landscape level land management planning approach, conservation and rehabilitation of riparian forest, community wetland protection and management)
Agriculture Development Strategy to 2025 and Vision to 2030	MAF	2015	No direct mention of NbS/EbA. Limited indirect mention (e.g. natural resources management and nutrition)
Green and Sustainable Agriculture Framework for Lao PDR to 2030	MAF	2021	No direct mention of NbS/EbA. Various indirect mention (e.g. integrated agro-ecological landscapes, landscape level planning and zonig for flood control, agroforestry, NTFPs)
Forests			
Law on Forestry	MAF	2021	No direct mention of NbS/EbA. Various indirect mention (e.g. forest regeneration (including at reclaimed mine sites), urban greening, sustainable forest management and sustainable livelihoods)
Lao PDR Forestry Strategy to 2035 and Vision to 2050	MAF	2025	No direct mention of NbS/EbA. Various indirect mention (e.g. agro-

			forestry, sustainable use of forest ecosystems)
Ecosystems and biodiversity			
Wildlife and Aquatic Law	MoNRE	2007	No direct mention of NbS/EbA. Various indirect mention (e.g. habitat regeneration, forest management)

Philippines

Policy document	Institution	Date / status	NbS relevance
Climate			
The Climate Change Act (Republic Act No. 9729)	CCC	2009	No direct mention of NbS/EbA.
National Framework Strategy on Climate Change (NFSCC) 2010-2022	CCC	2010	Direct mention of integrated ecosystem-based management approach. Various indirect mentions (e.g. ridge-to-reef approach, watershed rehabilitation, ecosystem services for floods, droughts and landslides, coral reef and mangrove expansion, climate-proof agricultural infrastructure, fish habitat restoration)
The National Climate Change Action Plan (NCCAP) 2011-2028	CCC	2012	Direct mention of integrated ecosystem-based management approach. Various indirect mentions (e.g. rehabilitation of critical ecosystems, forest restoration for climate adaptation and mitigation, ridge-to-reef approach, rehabilitation of degraded watersheds and river basins)
Implementation Plan for the Republic of the Philippines NDC 2020-2030	CCC	2023	Direct mention of NbS, including in agriculture for livestock-manure management and zero biomass burning. Various indirect mentions (e.g. climate-resilient soil and water conservation measures, biodiversity corridors)
Disaster			
Disaster Risk Reduction and Management Act (Republic Act No. 10121)	NDRRMC	2010	No direct mention of NbS/EbA.
National Disaster Risk Reduction and Management Plan (2020-2030)	NDRRMC	2020	Direct mention of NbS and EbA, including as a new direction for DRR and as key output under Outcome 6, with an indicator on *number of green/nature-based solutions implemented by 2022*

			Various indirect mentions (e.g. sustainable integrated area development, blue-green infrastructure, coastal/marine habitat rehabilitation, urban greening, integrated river basin management and planning)
Development planning			
AmBisyon Natin 2040	NEDA	2023	No direct mention of NbS/EbA. Limited indirect mentions (e.g. green space)
Philippine Development Plan (PDP) 2023-2028	NEDA	2023	Direct mention of NbS and EbA, including for climate action (mitigation and adaptation) and disaster resilience; agriculture, forestry and fisheries; infrastructure planning and design Various indirect mentions (e.g. IWRM, green-grey infrastructure, nature-based storm drainage systems, forest-led ecosystem-based management approaches)
Philippine Action Plan for Sustainable Consumption and Production (PAP4SCP)	NEDA	2023	No direct mention of NbS/EbA. Limited indirect mentions (e.g. ecosystem service valuation, rainwater harvesting)
Sustainable Integrated Area Development (SIAD) Strategy	??	??	No direct mention of NbS/EbA. Various indirect mentions (e.g. integrated and area-based development, sustainable practices in managing resources)
Water, coastal and marine			
Blue Economy Act (Senate Bill No. 2450)	??	2025	Direct mention of ecosystem-based management
Integrated Water Resources Management Plan	DENR	2024	Direct mention of NbS and EbA as a priority cross-cutting strategy for river basin planning and implementation following IWRM approach. Strategic action under environment (forestry) for development of flood control and coastal protection infrastructure using hybrid NbS. Various indirect mentions (e.g. rehabilitation of degraded forest, water wetlands)
Agriculture and fisheries			
Agriculture and Fisheries Modernization Act (Republic Act No. 8435)	DoA	1997	No direct mention of NbS/EbA.

National Agriculture and Fisheries Modernisation and Industrialisation Plan (NAFMIP) 2021-2030	DoA	2022	Direct mention of integrated ecosystem-based management approach (when referencing the NFSCC). Various indirect mentions (e.g. conservation of natural resources, nature-positive agri-fishery production , ridge-to-reef approach, enhance ecological balance between and among landscapes, natural resource management)
Philippine Agriculture and Fisheries Extension Strategic Plan (AFE) 2023-2028	DoA	2023	No direct mention of NbS/EbA. Limited indirect mentions (e.g. agroforestry, sloping agricultural land technology (SALT))
Forests			
Forest Resources Act	DENR	2013	No direct mention of NbS/EbA.
Philippine Master Plan for Climate Resilient Forestry Development (PMPCRFD)	DENR	2016	Direct mention of EbA. Various indirect mentions (e.g. conservation and rehabilitation of forests and mangroves, ridge-to-reef approach, integrated watershed management, urban greening)
Ecosystems and biodiversity			
Enhanced National Integrated Protected Areas System Act (Republic Act No. 11038 - ENIPAS Act)	DENR	2018	No direct mention of NbS/EbA.
Wildlife Resources and Conservation Protection Act (Republic Act No. 9147)	DENR	2001	No direct mention of NbS/EbA.
Philippine Ecosystem and Natural Capital Accounting System Act (Republic Act No. 11995 - PENCAS Act)	DENR	2024	No direct mention of NbS/EbA.

Thailand

Policy document	Institution	Date and status	NbS relevance
Climate			
Climate Change Master Plan (CCMP) 2015-2050	ONEP/MNRE	2015	Direct mention of NbS/EbA to promote EbA for fisheries, under Strategy 1 (CCA), 2.3 Ensuring Food Security.

			Various indirect mentions (e.g. restoration of degraded ecosystems and upstream areas, creation of forest corridors and buffers, restoration of marine and coastal resources by constructing artificial coral reefs, expanding mangrove forest area, re-vegetating seagrass, restoring eroded coastal areas)
Long-Term Low Greenhouse Gas Emissions Development Strategy (LT-LEDS) (Revised)	ONEP/MNRE	2022	Direct mention of NbS/EbA for support needs/international partnerships, including water resources, human settlements Various indirect mentions (e.g. green infrastructure, nature-based urban green space, nature-based designs for natural carbon sinks, sustainable community forest management, sustainable management of blue carbon ecosystem services)
NDC Action Plan on Mitigation 2021-2030	MNRE	2024 (DRAFT)	**Direct** mention of NbS for GHG reduction operations. Limited indirect mentions (e.g. urban greening, forest restoration)
Disaster			
Disaster Prevention and Mitigation Act	NDPMC	2007	No direct mention of NbS/EbA.
National Disaster Risk Management Plan	NDPMC	2015	No direct mention of NbS/EbA. Various indirect mentions (e.g. rehabilitate and restore affected locations of natural resources, reforestation, tree planting, growing ground cover plants to protect soil erosion, introduction of drought-tolerant plants, riverbank vegetation planting, mangrove planting)
Environment			
Enhancement and Conservation of National Environmental Quality Act	MNRE	1992	No direct mention of NbS/EbA.
National Environmental Quality Promotion and Preservation Act (No. 2)	MNRE	2018	No direct mention of NbS/EbA.
Environmental Quality Management Plan 2023-2027	ONEP/MNRE	2023	Direct mention of ecosystem approach as one of twelve principles in managing natural resources and the environment.

			Various indirect mentions (e.g. restoration of marine ecosystems, integrated watershed management, urban green spaces)
Development planning			
20-year National Strategy of Thailand 2018-2037	NESDC	2018	No direct mention of NbS/EbA. Various indirect mentions (e.g. urban greening, river basin management, river restoration, buffer zones, rehabilitating marine and coastal resource ecosystems, including mangroves, seagrasses and coral reefs)
13th National Economic and Social Development Plan (NESDP) 2023-2027	NESDC	2023	Direct mention of NbS, including under sub-strategy 3.1 for sustainable agriculture and sub-strategy 4.3 for natural disasters and climate change) Various indirect mentions (e.g. wetland rehabilitation, for flood and drought forest watershed rehabilitation, natural coastal ecosystem management, agroforestry)
Land Development Act	MoAC	2008	
Alternative Energy Development Plan (AEDP) 2018-2037	MoE	2018	No direct mention of NbS/EbA. Limited indirect mentions (e.g. joint community management of watershed forests)
Water resources			
Water Resource Act	ONWR	2018	No direct mention of NbS/EbA.
20-Year Water Resource Management Master Plan (2018-2037)	ONWR	2019	No direct mention of NbS/EbA. Various indirect mentions (e.g. watershed management, restoration of degraded upstream forests, buffer zones, wetland restoration, restoration of water sources, soil erosion protection)
Coastal and marine			
Act on the Promotion of Marine and Coastal Resources Management	ONWR	2015	No direct mention of NbS/EbA.
Agriculture and fisheries			
Fisheries Act	MoAC	2015	No direct mention of NbS/EbA.
Twenty-Year Agriculture and	MoAC	2017	No direct mention of NbS/EbA. Limited indirect mentions (e.g.

Cooperative Strategy (2017-2036)			agroforestry, conservation of natural resources)
Climate Change Action Plan for the Agricultural Sector (CCAPA) 2023-2027	MoAC	2023	No direct mention of NbS/EbA. Various indirect mentions (e.g. climate-smart agriculture, ecosystem and landscape management, resilient fisheries zoning, soil restoration, organic fertilisation, restoration of degraded pastureland)
Forests			
Community Forest Act	MNRE	2019	No direct mention of NbS/EbA.
Ecosystems and biodiversity			
National Parks Act	MNRE	2019	No direct mention of NbS/EbA.

Viet Nam

Policy document	Institution	Date and status	NbS relevance
Climate			
National Climate Change Strategy (NCCS) to 2050	MoNRE	2022	No direct mention of NbS/EbA. Various indirect mentions (e.g. develop climate change adaptation models based on nature, ecosystems and community, mangrove ecosystem restoration, native species forest planting, agroforestry, urban greening, green cooling solutions relying on nature, combine structural and non-structural solutions)
Disaster			
Law on Natural Disaster Prevention and Control	MARD	2013	No direct mention of NbS/EbA.
Environment			
Law on Environmental Protection	MoNRE	2020	**Direct** mention of ecosystem-based climate change adaptation, under Article 90. Climate change adaptation
National Environmental Protection Strategy until 2030 and Vision until 2050	MoNRE	2022	**Direct** mention of NbS and EbA under Task 4a of the strategy (environmental protection for CCA and CCM), to consolidate, develop, and duplicate climate change EbA solutions and models, NbS, biodiversity preservation, and environmental remediation, suitable with regions and administrative divisions Various indirect mentions (e.g. regenerate watershed and mangrove

			forests, restore coral reefs, seagrasses and wetlands, biodiversity corridors)
Development planning			
Planning Law	MPI	2017	No direct mention of NbS/EbA.
Land Law	MoNRE	2024	No direct mention of NbS/EbA.
Socio-economic Development Plan (SEDP) 2021-2025	MPI	2021	No direct mention of NbS/EbA. Limited indirect mention (e.g. environmental protection and climate change adaptation, ecological agriculture)
National Action Plan on Green Growth for the period 2021-2030, vision towards 2050	MPI	2021	No direct mention of NbS/EbA. Various indirect mentions (e.g. natural disaster risk management, recovery of natural ecosystems, recovery of biodiversity in agriculture, recovery of natural carbon sinks)
National Power Development Plan for the period of 2021-2030, with a vision to 2045 (8th Power Development Plan)	MoIT	2021	No direct mention of NbS/EbA.
Scheme for development of urban areas in response to climate change in 2021-2030	MoC	2013	No direct mention of NbS/EbA. Limited indirect mention (e.g. ecological and climate-smart architecture, pilot projects to develop ecological green cities)
Water resources			
Law on Water Resources	MoNRE	2023	No direct mention of NbS/EbA.
Plan of Water Resources for 2021-2030, with a Vision to 2050	MoNRE	2022	No direct mention of NbS/EbA. Various indirect mentions (e.g. upstream forest restoration, sustainable development of wetland ecosystem, river restoration, river flood attenuation spaces, flooded forests for water storage)
Coastal and marine			
Law on Marine and Island Resources and Environment	MoNRE	2018	**Direct** mention of ecosystem approach for the integrated management of marine and island resources
Master Plan for Sustainable Extraction and Use of Coastal Resources for the 2021-2030 period, orientation toward 2050	MoNRE	2024	No direct mention of NbS/EbA. Various indirect mentions (e.g. restoring and conserving marine ecosystems (coral reefs, mangroves), restoring coastal environment after extraction and resource use, ecosystem integrity)

Strategy for Sustainable Development of Vietnam's Ocean Economy by 2030, with visions towards 2045	MoNRE	2020	No direct mention of NbS/EbA. Various indirect mentions (e.g. sustainable planning based on ecosystems, smart adaptation to climate change, restoration of coral reefs, seagrass, lagoons, mangrove forests)
Agriculture and fisheries			
Law on Irrigation	MARD	2017	No direct mention of NbS/EbA.
Sustainable Agriculture and Rural Development Strategy for the period 2021-2030 with a vision toward 2050	MARD	2022	No direct mention of NbS/EbA. Various indirect mentions (e.g. restoring protected and special-use forests, climate adaptive farming measures, watershed and coastal protection forests for CCA and DRR, develop ecological urban areas)
Scheme for Environmental Protection in Fishery Sector in the period of 2021-2030	MARD	2022	**Direct** mention of EbA to climate change in aquaculture production. Various indirect mentions (e.g. restoration of important ecosystems for aquatic resources including mangrove forests, seagrasses, coral reefs)
Forests			
Forestry Law	MARD	2017	No direct mention of NbS/EbA.
Forestry Development Strategy in the 2021-2030 period, with a vision to 2050	MARD	2021	No direct mention of NbS/EbA. Various indirect mentions (e.g. mangrove restoration, strengthen watershed protection forests, wave-breaking protection forests, coastal erosion prevention protection forests, drought prevention forests, agroforestry, biodiversity corridors)
Ecosystems and biodiversity			
Biodiversity Law	MoNRE	2009	No direct mention of NbS/EbA.
National Biodiversity Conservation Plan for the period 2021-2030, with a vision to 2050	MoNRE	2024	**Direct** mention of NbS under viewpoints and goals Various indirect mentions (e.g. biodiversity conservation, restoration of the integrity and connectivity of natural ecosystems, biodiversity corridors, ecological landscapes, natural disaster mitigation, biodiversity conservation solutions for climate change adaptation)

Annex 3: List of Stakeholder Consultations

Country	Stakeholders
Cambodia	• EU Tonle Sap Project stakeholders (Wildlife Conservation Society (WCS), UNDP, Oxfam) • Department of Climate Change (DCC), The National Council for Sustainable Development (NCSD), Ministry of Environment (MoE) • Fisheries Action Coalition Team (FACT) • Fisheries Administration Siem Reap • Department of Environment (DoE) Siem Reap • USAID Cambodia • Royal University of Phnom Penh (RUPP)
Indonesia	• Ministry of Environment and Forestry • GIZ (ASEAN) • Ministry of Finance • IPB University Bogor • CIFOR-ICRAF • World Resources Institute (WRI) • Asian Development Bank (ADB) • IEF (Bappenas) • Yayasan Konservasi Alam Nusantara (YKAN), Kupang • Various NNT line agencies (planning, environment, conservation, disaster), Kupang • IEF (BAPPENAS)
Lao PDR	• UNDP Lao PDR (online) • Various departments, Ministry of Natural Resources and Environment (MoNRE) • Water Resources Department, University of Lao PDR • GGGI Lao PDR • WWF Lao PDR • GIZ (GIZ-MRC)
Philippines	• Climate Change Services, DENR • ADB • PUNDP Philippines • Local government office, Del Carmen • SIPLAS, Siargao

Thailand	• Office of the National Economic and Social Development Board (NESDC) • GIZ Thailand • Department of National Parks, Wildlife and Plant Conservation, Ministry of Natural Resources and Environment (MNRE) • Department of Disaster Prevention and Mitigation (DDPM), Ministry of Interior (MoI) • Department of Climate Change and Environment (DCCE), MNRE (online) • Office of the National Economic and Social Development Board (NESDC) • GIZ Thailand • Department of National Parks, Wildlife and Plant Conservation, Ministry of Natural Resources and Environment (MNRE)
Viet Nam	• Ministry of Agriculture and Rural Development (MARD) • AfD Viet Nam • WWF Viet Nam • Institute of Strategy, Policy on Natural Resources and Environment (ISPONRE), Ministry of Natural Resources and Environment (MONRE) • IUCN Viet Nam • Ministry of Planning and Investment (MPI) • ICEM • GIZ Viet Nam (online) • Southern Institute of Water Resources Research (SIWRR) (online) • Dragon Institute, Can Tho University (online)

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