



Emerging lessons for mainstreaming Ecosystem-based Adaptation

Strategic entry points and processes

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List of Acronyms

BMU	German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety
CBD	Convention on Biological Diversity
CC	Climate Change
CCA	Climate change adaptation
CI	Conservation International
CLUP	Comprehensive Land Use Plan, Philippines
DEA	Department of Environmental Affairs, South Africa
DENR	Department of Environment and Natural Resources, South Africa
DONRE	Provincial Department of Natural Resources and Environment, Viet Nam
DRR	Disaster Risk Reduction
EbA	Ecosystem-based Adaptation (to Climate Change)
EIA	Environmental Impact Assessment
FEBA	Friends of Ecosystem-based Adaptation
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH
HLURB	Housing and Land Use Regulatory Board, Philippines
ICCA	Indigenous Community Conserved Areas
IKI	International Climate Initiative (of the BMU, Germany)
IUCN	International Union for Conservation of Nature
IWRM	Integrated Water Resource Management
MEF	Ministry of Economy and Finance (Ministerio de Economía y Finanzas, Peru)
MINAGRI	Ministry of Agriculture and Irrigation (Ministerio de Agricultura y Riego, Peru)
MINAM	Ministry of Environment (Ministerio de Medio Ambiente, Peru)
MONRE	Ministry of Natural Resources and Environment, Viet Nam
MPI	Ministry of Planning and Investment, Viet Nam
NAP	National Adaptation Plan
NbS	Nature-based Solutions
NBSAP	National Biodiversity Strategy Action Plan (of CBD)
ND-GAIN	Notre Dame Global Adaptation Initiative
NDC	Nationally Determined Contributions
NGO	Non-Governmental Organization
NRM	Natural Resources Management
OECD	Other Effective area-based Conservation Measure
PA	Protected Area
PES	Payments for Ecosystem Services
SANBI	South African National Biodiversity Institute
SDGs	Sustainable Development Goals
SEA	Strategic environmental assessment
TMI	The Mountain Institute
TNC	The Nature Conservancy
UNDP	United Nations Development Program
UNEP	United Nations Environment Program
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFCCC	United Nations Framework Convention on Climate Change
WWF	World Wide Fund for Nature

Summary

Since climate change has become more of a development issue, there is a need to mainstream climate change adaptation into national planning as part of broader policies for development.

Societal awareness about the potential and importance of functioning ecosystems is growing, as is the political will to consider nature-based options in planning and decision making. Multiple entry points for mainstreaming have been identified throughout the study in five countries (Philippines, Viet Nam, South Africa, Mexico and Peru) – and their number is increasing as planners and decision-makers become more aware of the opportunities and potentials that these approaches provide in face of the challenges. Some common patterns on mainstreaming processes of EbA and related concepts such as Ecosystem-based Disaster Risk Reduction (Eco-DRR)¹ are emerging. GIZ has analyzed success factors for EbA mainstreaming and developed further guidance (see Table 1).

Development aspirations

Planners and decision-makers need to consider that EbA aspires changes that at the same time work for biodiversity conservation, climate change adaptation and risk reduction, and contribute to overall development.

Integrated planning and implementation

Effective mainstreaming into policies, plans and practice involves the integration of Nature-based Solutions into climate- and disaster-risk planning and decision-making processes at different governance levels and spatial scales, from local to landscape.

Combined interventions

EbA is as much a political and institutional issue as it is a technical one, requiring a process of change that involves all five capitals: based on i) natural assets and ii) built infrastructure, EbA mainstreaming aspirations and implications need to consider iii) human, iv) social and v) financial capital.

Ecosystem considerations

Mainstreaming may start with integrating ecosystem considerations, i.e. a systematic assessment of ecosystem services and benefits for societies, into adaptation and disaster-risk reduction objectives, strategies, policies, measures or operations so that they become part of national and regional development policies, processes and budgets at all levels and stages.

Embedded principles

Mainstreaming enhances the effectiveness, efficiency, and longevity of EbA (and Eco-DRR) initiatives by embedding their principles into local, municipal and national policies, planning, assessments, financing, training, and awareness campaigns, among other policy tools. When designing a mainstreaming adaptation process, it is therefore crucial to avoid unnecessary processes, structures and work.

Multiple stakeholders

The process of EbA mainstreaming involves working with a range of stakeholders that play a role in ecosystem management and obtain benefits – government, private sector, civil society organisations (CSOs), including non-governmental organisations (NGOs), politicians, the 'general public', communities, media and academia. Participatory processes should ensure that everybody gets involved and has the chance to develop ownership for adaptation processes. Broad stakeholder involvement will enhance also commitment at political level.

Many little steps

Mainstreaming always entails an institutional and behavior change process. Changes may lie on a spectrum from becoming more aware of ecosystem potentials and risks, through to changes in policy, procedures and individual behavior patterns.

Long-term strategies

Mainstreaming EbA takes time: it is a long-term, iterative process that entails integrating biodiversity, ecosystems and climate aspects in national, sector and local policies, plans, and budgets – and the subsequent support for the implementation of coherent action. In many cases mainstreaming and the subsequent implementation of concrete actions (e.g. landscape or ecosystem restoration) needs time and continuous efforts. High level buy-in, a clear long-term vision and mandate, as well as long-term budgeting is decisive for an effective mainstreaming process.

Anticipated risks and impacts

Development planning needs to consider anticipated climate risks and impacts - particularly on the livelihoods, resilience, and health of the population, but also on ecosystem functions and services, and whether future service delivery might be at risk.

¹ Eco-DRR is the sustainable management, conservation, and restoration of ecosystems to reduce disaster risk, with the aim of achieving sustainable and resilient development (Estrella & Saalimaa 2013).

I. Introduction

There is increasing recognition that healthy ecosystems play a key role in climate change mitigation strategies and actions, reduce vulnerabilities and risks for people and support human adaptation over the long term. As the evidence base grows, Nature-based Solutions (NbS) become increasingly prominent in climate change policy. Yet, when it comes to action, measures often remain low in the list of prioritized adaptation solutions. So why is this happening, given that the NbS for climate adaptation and resilience have been around known as Ecosystem-based Adaptation (EbA) for more than 10 years now and have demonstrated multiple benefits and cost-effectiveness in different contexts? Do we know how to effectively integrate NbS in climate change and development planning?

With the intention to better understand barriers and successes of mainstreaming processes, GIZ (via Ambero Consult) has assessed entry points for EbA mainstreaming and governance aspects in five partner countries (Philippines, Viet Nam, South Africa, Mexico and Peru).

Results indicate that while progress towards EbA mainstreaming has been achieved, a challenge remains to enhance a broader understanding for the potentials that nature-based solutions can offer to climate change adaptation and risk reduction – either as stand-alone options, or in combination with engineered infrastructure building and other measures, as well as further uptake at broader scales. This requires a thorough understanding of the individual site- and sector-specific contexts, the involvement of diverse actors with their knowledge systems, aspirations and capacities, private sector engagement, and the serious political will to integrate EbA into public planning and expenditure.

The present report intends to offer some of the insights and lessons learned during the assessments in the partner countries; some concepts presented and case studies highlight success stories.



Photo 1 - In Kwazulu Natal, South Africa, planning of EbA measures often occurs in a collaborative manner; NGOs like Wildtrust implement activities in partnership with the Municipality.

Credits: Kelvin Trautmann, Wildtrust

II. The importance of mainstreaming Ecosystem-based Adaptation

The role of ecosystems in adaptation is increasingly recognized at the international level. This may be related to the fact that ecosystem-based approaches can be applied in diverse landscapes and seascapes, including natural areas, human-modified landscapes such as agricultural areas, and urban regions. Examples include the restoration of coastal ecosystems to protect people against increases in storm intensity or frequency, the protection and rehabilitation of wetlands as buffers during droughts or floods, or the use of shade trees in coffee plantations in view of rising temperatures.

Analyses suggest that incorporating adaptation into mainstream development is a 'win-win' approach and that capitalizing on synergies in this way will lead to more efficient resource mobilization (Ayers et al. 2013) and more sustainable, effective and efficient use of resources.

Many of the sustainable development goals (SDGs) are directly linked to the health and biological diversity of ecosystems and the services they provide for humankind. Especially the most disadvantaged and marginalized sectors of society are often highly dependent on ecosystems to support their livelihoods. EbA can provide sustainable, climate resilient, nature-based solutions that span many of the global challenges the SDGs seek to address, optimizing synergies and reducing trade-offs.

NATURE-BASED SOLUTIONS – AN UMBRELLA CONCEPT

Nature-based Solutions (NbS, also known as: Nature-based Approaches, NbA) are recognized as a key component in tackling major societal challenges. This umbrella concept includes Ecosystem-based Adaptation approaches to climate change (EbA) and to Disaster Risk Reduction (Eco-DRR).

NbS go beyond the traditional biodiversity conservation and management principles – they are rather intended to support the achievement of society's development goals and attend essential needs of human well-being, such as food security, risk reduction, access to clean water, or health. Therefore, Nature-based Solutions have the capacity to deliver simultaneous benefits for society, economy and the environment, while performing in a cost-effective manner (IUCN, 2019).

In line with the principles of the umbrella NbS concept is the one of Ecosystem-based Adaptation to climate change (EbA). It is defined as "the use of biodiversity and ecosystem services as part of an overall adaptation strategy to help people to adapt to the adverse effects of climate change.

EbA can support national obligations with multilateral climate change agreements (e.g., the United Nations Climate Change Convention, UNFCCC) and other relevant agreements (such as the other two so-called Rio Conventions: desertification, UNCCD, and conservation of biodiversity, CBD) if considered in the actions and programs for their implementation (e.g. in form of the National Adaptation Plans, NAPs, and / or the nationally determined contributions to combat or prevent climate change impacts, NDCs). Examples include regulations for the private sector, land tenure regimes, and national-level land-use planning.

Integrating EbA in policy processes at national level is an important enabler for implementation at all other levels; it enhances mainstreaming of nature-based solutions into other sectors considerably. In addition, EbA is acknowledged to be essential to achieving the sustainable development goals (for example SDG 2, 11, 13, 14 and 15); national development plans and policies provide important entry points for mainstreaming.

Thus, investments in the management and restoration of ecosystems with a long-term commitment to the conservation of biological and associated cultural diversity will be key to achieving multiple benefits for societies in view of increasing global challenges. These investments could provide a vital cornerstone for the future of our planet.

It aims to maintain and increase the resilience and reduce the vulnerability of ecosystems and people in the face of the adverse effects of climate change" (CBD 2009 & 2010). The EbA concept thus has a people-centered focus; it acknowledges that human resilience depends critically on the integrity of ecosystems and involves a wide range of management activities to reduce the vulnerability of people and the environment to climate change and enhance their resilience.

IUCN proposes eight principles for NbS:

1. NbS embrace nature conservation norms and principles.
2. They can be implemented alone or in an integrated manner with other solutions to societal challenges (e.g. technological and engineering solutions).
3. NbS are determined by site-specific natural and cultural contexts that include traditional, local and scientific knowledge.
4. They produce societal benefits in a fair and equitable way, in a manner that promotes transparency and broad participation.

5. NbS maintain biological and cultural diversity and the ability of ecosystems to evolve over time.
6. They are applied at a landscape scale.
7. NbS recognize and address the trade-offs between the production of a few immediate economic benefits for development, and future options for the production of the full range of ecosystems services.
8. They are an integral part of the overall design of policies, and measures to address a specific challenge.

Nature-based Solutions as an umbrella concept for ecosystem-related approaches

In framing NbS and considering its applications, it is useful to think of it as an umbrella concept that covers a whole range of ecosystem-related approaches all of which address societal challenges.

The NbS approaches can be placed into five main categories, as shown in the following table.

Table 1: Categories of Nature-based Solutions approaches and examples

CATEGORY OF NBS APPROACHES	EXAMPLES
Ecosystem restoration approaches	<ul style="list-style-type: none"> • Ecological restoration • Ecological Engineering • Forest landscape restoration
Issue-specific ecosystem-related approaches	<ul style="list-style-type: none"> • Ecosystem-based adaptation • Ecosystem-based mitigation • Climate adaptation services • Ecosystem-based disaster risk reduction
Infrastructure-related approaches	<ul style="list-style-type: none"> • Natural infrastructure • Green infrastructure
Ecosystem-based management approaches	<ul style="list-style-type: none"> • Integrated coastal zone management • Integrated water resources management
Ecosystem protection approaches	<ul style="list-style-type: none"> • Area-based conservation approaches, including protected area management

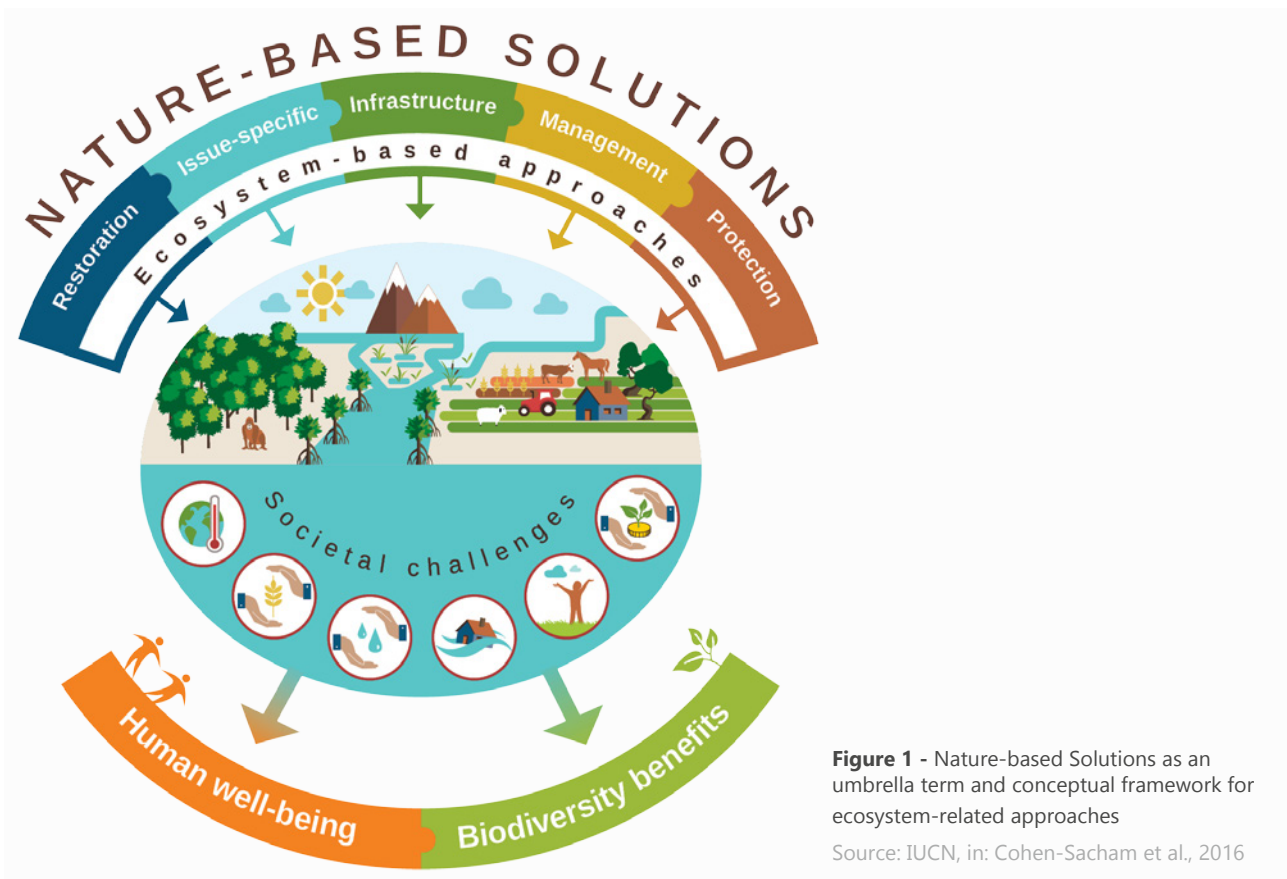


Figure 1 - Nature-based Solutions as an umbrella term and conceptual framework for ecosystem-related approaches

Source: IUCN, in: Cohen-Sacham et al., 2016



Figure 2 - Ecosystem-based Adaptation initiatives have to form part of an overall adaptation strategy.

Since EbA focuses on the benefits humans derive from biodiversity and ecosystem services, and specifically: how these benefits can be utilized in the face of climate change, it is characterized as a people-centric concept. “Hybrid solutions” include a range of ‘green-grey’ measures, e.g. mangrove restoration combined with the construction of a dyke, to ‘green-brown’ measures, using a combination of classical EbA with the use of natural material, instead of grey, e.g. cut bamboo stilts, or earth dams.

Source: GIZ / Th. Amend, 2019; Photos: GIZ, Pixabay

MAINSTREAMING EBA IN DEVELOPMENT PLANNING

Mainstreaming climate change is the iterative process of integrating considerations of climate change adaptation into policy making, budgeting, and implementation and monitoring processes at national, sectoral, and subnational levels as well as the different key sectors in the development field (UNDP-UNEP 2011).

Mainstreaming EbA has the goal to achieve that ‘natural capital’ and ecosystem services are taken into account in development strategies, policies and actions in coherent ways. That includes considering relevant aspects across all sectors in the sector-specific planning and implementation tools, the instruments and methods, as well as in monitoring, building in specific indicators and observing the impacts.

Mainstreaming can focus on different levels — from national policies to local plans or individual business practices; from cross-cutting development plans such as poverty reduction strategies to sectoral policies such as agricultural growth and development strategies. Mainstreaming proposals include:

National planning and development processes

Risk reduction / resilience and adaptation targets based on strategies for adaptive ecosystem management must be integrated into medium and long-term national development planning frameworks and budgeting processes.

Local and community planning processes

Based on a thorough understanding of local development aspirations, needs, priorities and capacities, nature-based solutions are encouraged as they create various social, environmental and economic benefits, foster adaptive management and increase local ownership over natural resource management.

Sectoral policy, incentives and disincentives

Synergies among sectoral development priorities, climate change adaptation, risk reduction and biodiversity conservation needs need to be identified - this includes the removal of perverse subsidies and the provision of incentives for land and resource use that aim to sustainably manage and/or restore ecosystems.

Land-use plans

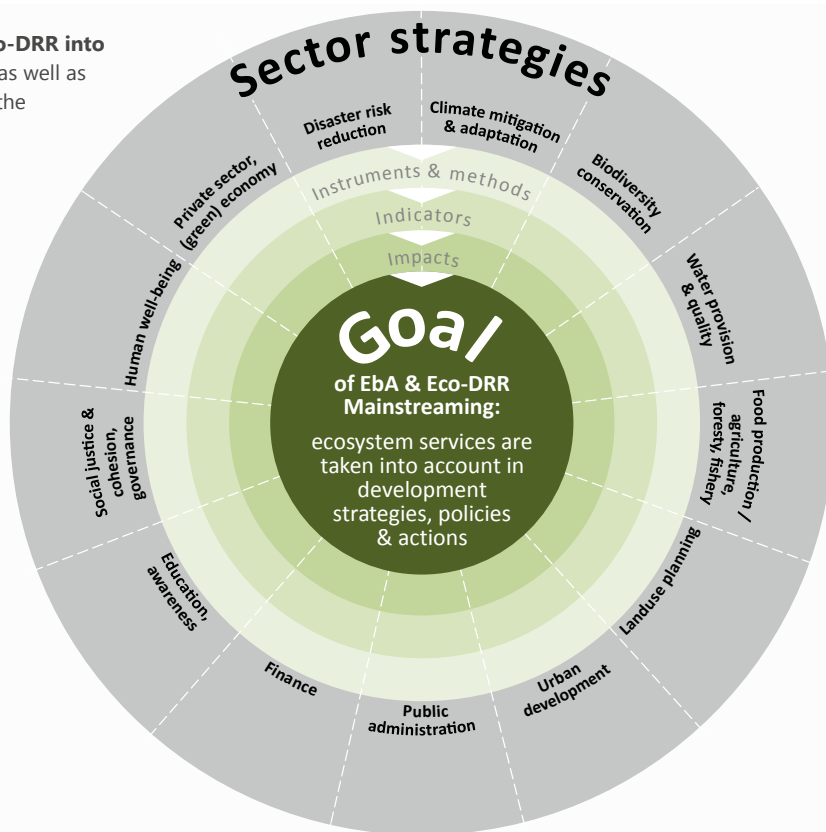
In the context of land-use and spatial planning, all resource use practices (including land and sea) must be informed about climate risks and vulnerabilities and appropriately situated to optimize adaptation and ecosystem management / restoration.

Finance and decision-making

Nature-based principles and criteria must be included in all spheres of public expenditure planning, the funding decisions of the international donor community (ODA), as well as the private sector.

Figure 3 - Mainstreaming of EbA and Eco-DRR into local, municipal and national processes, as well as sector strategies, is relevant for increasing the resilience of people and ecosystems to changing climatic conditions.

Source: adapted from figure 2
 CBD COP Decision 14/5,
 based on GIZ, 2018



SUCCESS FACTORS FOR EBA AND ECO-DRR MAINSTREAMING

Drawing from its operational experience worldwide with mainstreaming adaptation and supporting the NAP process, GIZ defined seven success factors for mainstreaming climate change adaptation in general, which are equally applicable to EbA.

In connection to these success factors, the following lessons may prove useful when embarking on a mainstreaming process for EbA².

² GIZ (2017, unpublished) Author: Michael Hoppe

Table 2: Success factors for EbA and Eco-DRR mainstreaming

SUCCESS FACTOR	LESSONS
<p>1. Climate information Data about climate variability and change, impacts, vulnerabilities and adaptation options that provide the basis for solid decision making about responses to climate change.</p>	<p>Co-generate information, disseminate knowledge and take uncertainty seriously. Adaptation decisions have to be based on information on climate variability and change. It is no trivial task to provide adequate information with the necessary level of detail in a user-friendly manner. The uncertainty of climate change information, especially on the impacts on functionality of ecosystems and the services they provide, raises a specific challenge. Scenario-thinking to address uncertainty as well as co-production of information and knowledge management provides a good basis for informed and transparent decision-making. Co-constructing an information and knowledge base from indigenous, local and scientific sources helps to foster robust and locally appropriate solutions to build the resilience of natural and societal systems.</p>
<p>2. Human and institutional capacities The ability of stakeholders and institutions to coordinate adaptation processes, make use of climate information and act.</p>	<p>Build capacities and raise awareness. EbA requires multi-sector and multi-stakeholder coordination in diverse land- or seascapes. Stakeholders of the mainstreaming process require awareness and technical capacities to plan and implement adaptation. Oftentimes existing capacities and expertise in key institutions are limited. Therefore, partnering with think tanks and universities is required.</p>

SUCCESS FACTOR	LESSONS
<p>3. Long term vision & mandate Common understanding on long term objectives for sustainable development taking climate change into account, as well as a mandate to align key processes with this vision.</p>	<p>Assure leadership and resource availability. In many cases mainstreaming and implementation of concrete actions (e.g. landscape or ecosystem restoration) needs time and continuous efforts. High level buy-in, a clear long-term vision and mandate is decisive for an effective mainstreaming process. This also holds true for the financial resources. Starting efforts to acquiring both early on in the mainstreaming process is vital for its success.</p>
<p>4. Implementation The quality, quantity and strategic orientation of methods, tools and measures that are used in the process.</p>	<p>Build capacities and raise awareness. EbA requires multi-sector and multi-stakeholder coordination in diverse land- or seascapes. Stakeholders of the mainstreaming process require awareness and technical capacities to plan and implement adaptation. Oftentimes existing capacities and expertise in key institutions are limited. Therefore, partnering with think tanks and universities is required.</p>
<p>5. Mainstreaming The process of integrating climate change adaptation into development processes at all planning levels, including state level, sectoral and communal policy documents and programs.</p>	<p>Mainstreaming is a systemic change process. It always entails an institutional change process. Hence it will be necessary to design an appropriate institutional set-up that promotes a mainstreaming objective. This could be a dedicated governance unit, the assignment of focal points in different departments, a mandatory climate check for all new projects etc. However, there is no blueprint or one-size-fits-all solution. Balanced and context-specific arrangements have to be made.</p> <p>Choose entry points wisely. When designing a comprehensive mainstreaming process, it is crucial to analyze where changes have to take place, who is in charge and how these changes can be brought about.</p> <p>Keep it straight and simple. Mainstreaming requirements and tools should not be made too complex / difficult. Quite often, also comparably simple tools such as participatory rural appraisal, SWOT, etc. can improve mainstreaming significantly. Adaptation tools should not be too scientific but be made 'understandable' for sector practitioners.</p>
<p>6. Participation The involvement of representatives from private entities, different sectoral public administrations, civil society and NGOs.</p>	<p>Multi-stakeholder effort is key. Mainstreaming usually requires the interaction of different responsible institutions and stakeholders that play a role in ecosystem management. Participatory processes should ensure that everybody gets involved and has the chance to develop ownership for adaptation processes. Broad stakeholder involvement will enhance also commitment at political level.</p> <p>Work with resistance. Mainstreaming causes additional costs and work as well as potential trade-offs with other priorities. When designing a mainstreaming process, it is therefore crucial to avoid unnecessary processes, structures and work. Less is often more. Furthermore, incentives have to be built up, e.g. by raising funds for additional costs.</p>
<p>7. Monitoring & Evaluation (M&E) M&E systems for adaptation ensure effective resource allocation, improve accountability, allow for adjusting adaptation planning and implementation and foster learning.</p>	<p>Evidence. An evidence base is important to showcase the benefit of mainstreaming adaptation. One needs good stories to tell – if they do not already exist, they should be created in pilots that are ideally jointly implemented with 'champions' from the target group of the mainstreaming process.</p> <p>Time scale. Long-term monitoring and evaluating the implementation of EbA is relevant, as socioeconomic and ecological benefits span a decade or longer after implementation. It is therefore crucial to define a minimum set of indicators, that can be effectively monitored over longer time scales.</p> <p>Build on existing systems. M&E systems for adaptation should be integrated in existing systems, whenever possible, to avoid unnecessary complexity and resource efforts and to allow the uptake of new information to adjust the mainstreaming process.</p>

FROM POLICY TO AGENDA-SETTING

The framework of mainstreaming EbA into development planning consists of three major components:

1. Finding the entry points and making the case.

A preliminary assessment sets the stage for mainstreaming. It includes understanding the linkages between climate change and social-ecological systems, and considers development priorities as well as ecosystem needs and potentials for adaptation. To define (esp. pro-poor) adaptation outcomes targeted for mainstreaming EbA, governmental, institutional, and political contexts and needs must be understood. Possible entry points for mainstreaming EbA at the national and sectoral planning levels include national development plans; poverty reduction strategies; sectoral strategies, plans, and policies; and preparation of sectoral or national budgets (see also textbox on available tools).

2. Mainstreaming EbA in policy and planning processes.

It focuses on integrating ecosystem-based adaptation into the policy formulation process such as national development plans or sectoral initiatives based on country-specific evidence including climate change impacts, risk and adaptation assessments, socioeconomic analysis, and demonstration projects. Risk assessments – e.g. based on the Climate Risk Assessment Guidebook for EbA³ – help identify the population groups, regions, and sectors that are most vulnerable due to present climate risks, state of development, poverty, and/or availability of natural resources and resilience of ecosystems. Such assessments should also estimate or gauge future impacts and risks and serve as basis for identifying appropriate adaptation measures – including Nature-based Solutions.

They should also include an analysis of the management and potential restoration needs of the ecosystems that are relevant for adaptation.

3. Strengthen EbA implementation.

Mainstreaming EbA means that it is institutionalized. To strengthen implementation, it is necessary to link the planning and the budgetary processes at the relevant levels, and to improve the national monitoring system for adaptation. Ideally, monitoring and reporting is done in efficient and effective ways that create synergies between the different UN commitments, mechanisms and processes (such as SDGs, UNFCCC, UNISDR, CBD, UNCCD, etc.). Budget and financing should also be provided to effectively implement and monitor the progress of implementation. In addition, effective climate-related nature conservation policies and incentive mechanisms must be developed. For effective design and implementation of EbA, capacity building and institutional strengthening has to be prioritized.

Since mainstreaming EbA is an iterative process, each component capitalizes on previous work or activities and depends on the country's circumstances, priorities, and needs. The whole process – from inception through policy formulation, implementation, and monitoring – requires participation and cooperation of different stakeholders including government policy makers, implementing agencies, development partners, the private sector, and communities. Regulations and standards need to be revised, for example such as employing building codes to reflect climate risks in terms of infrastructure, the mandatory consideration of nature-based solutions in all planning levels and investment projects, or the consideration of resilience needs of ecosystems. Coherent adaptation strategies draw on a wide range of potentials – they include natural assets, technical skills and financial resources.

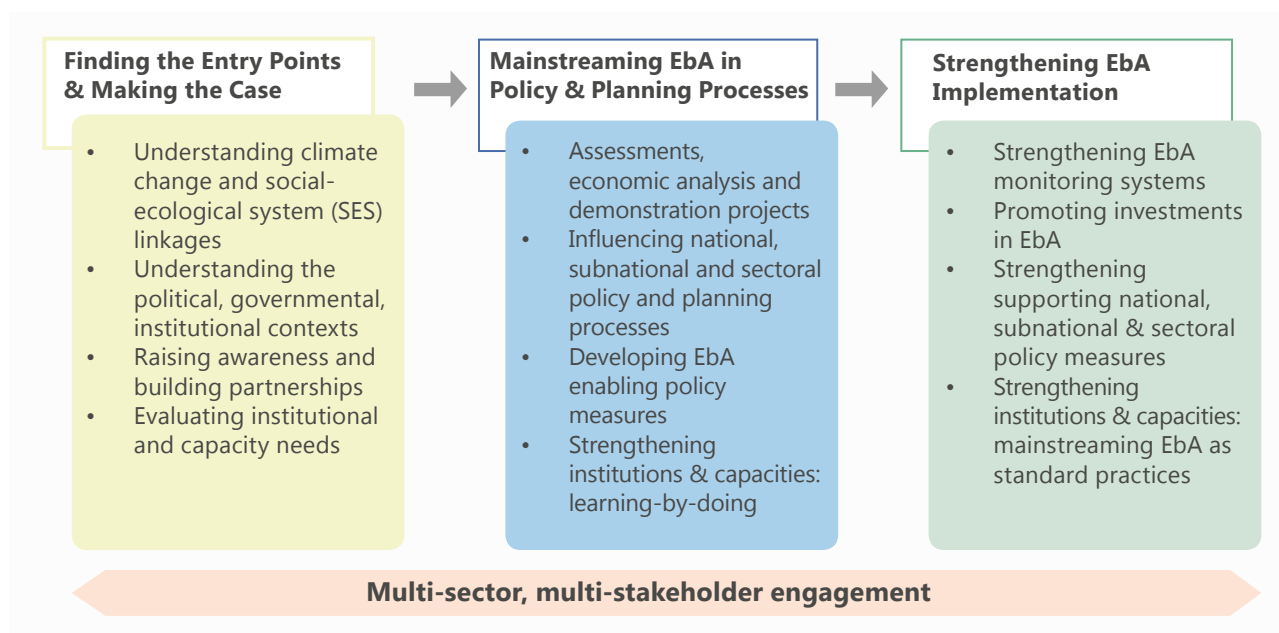


Figure 4 - Framework for mainstreaming of EbA in development planning with three components

Source: GIZ, 2019, adapted from CBD, 2018

ANALYTICAL APPROACH AND METHODOLOGY

Our approach to identify entry points for EbA mainstreaming is based on the understanding that entry points are windows of opportunities that help gain the interest of policy-makers, stakeholders or the broader public for integrating Nature-based Solutions into ongoing national and subnational processes and harnessing synergies with other approaches.

For policy change, three variables have been identified as key to create 'windows of opportunity': the problem stream (perceptions of problems that need to be addressed by taking specific action), the proposal stream (possible solutions to address such problems), and the political stream (willingness to act, political interest and election terms, influence of advocacy groups). Windows of opportunity are created in the presence of alignment between three streams (Figure 5).

In addition, during the country studies we focused on motivations of actors: Who started changing business as usual (e.g. governmental agency, a municipality, a private landowner, an NGO or community)? What was the driving force behind the process? Who sustains the EbA process over time to make it sustainable? This helped us understand the important role of champions, who initiated a process that later was sustained and replicated by others (see examples from South Africa, GIZ, 2018 a, as well as GIZ report on EbA governance, 2019).

That means that many things have to come together in order to successfully mainstream EbA. Results of the entry point study suggest that by using the proposed approach, potentially a broader set of opportunities for EbA mainstreaming in development planning can be identified. The example of Peru illustrates how such an important window of opportunity was used to lead to policy change (Figure 6).

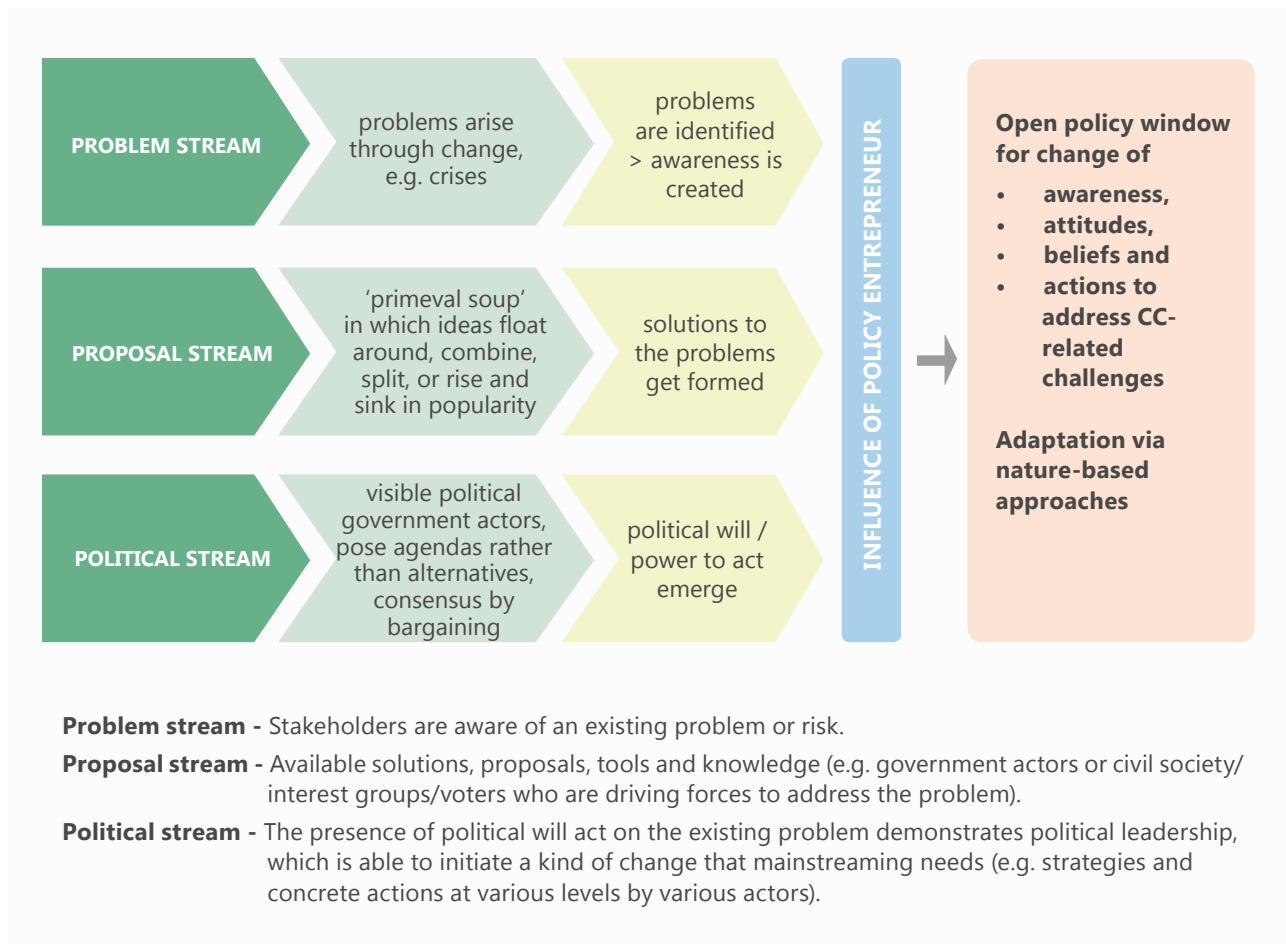


Figure 5 - Multiple Streams Model: The analytical model, adopted from political sciences, highlights how 'windows of opportunity' for policy change can be used for EbA mainstreaming
Source: GIZ, 2019, adapted from Kingdon, 1984

³ GIZ, EURAC & UNU-EHS (2018): Climate Risk Assessment for Ecosystem-based Adaptation – A guidebook for planners and practitioners. Bonn: GIZ. <https://www.adaptationcommunity.net/wp-content/uploads/2018/06/giz-eurac-unu-2018-en-guidebook-climate-risk-assessment-eba.pdf>.

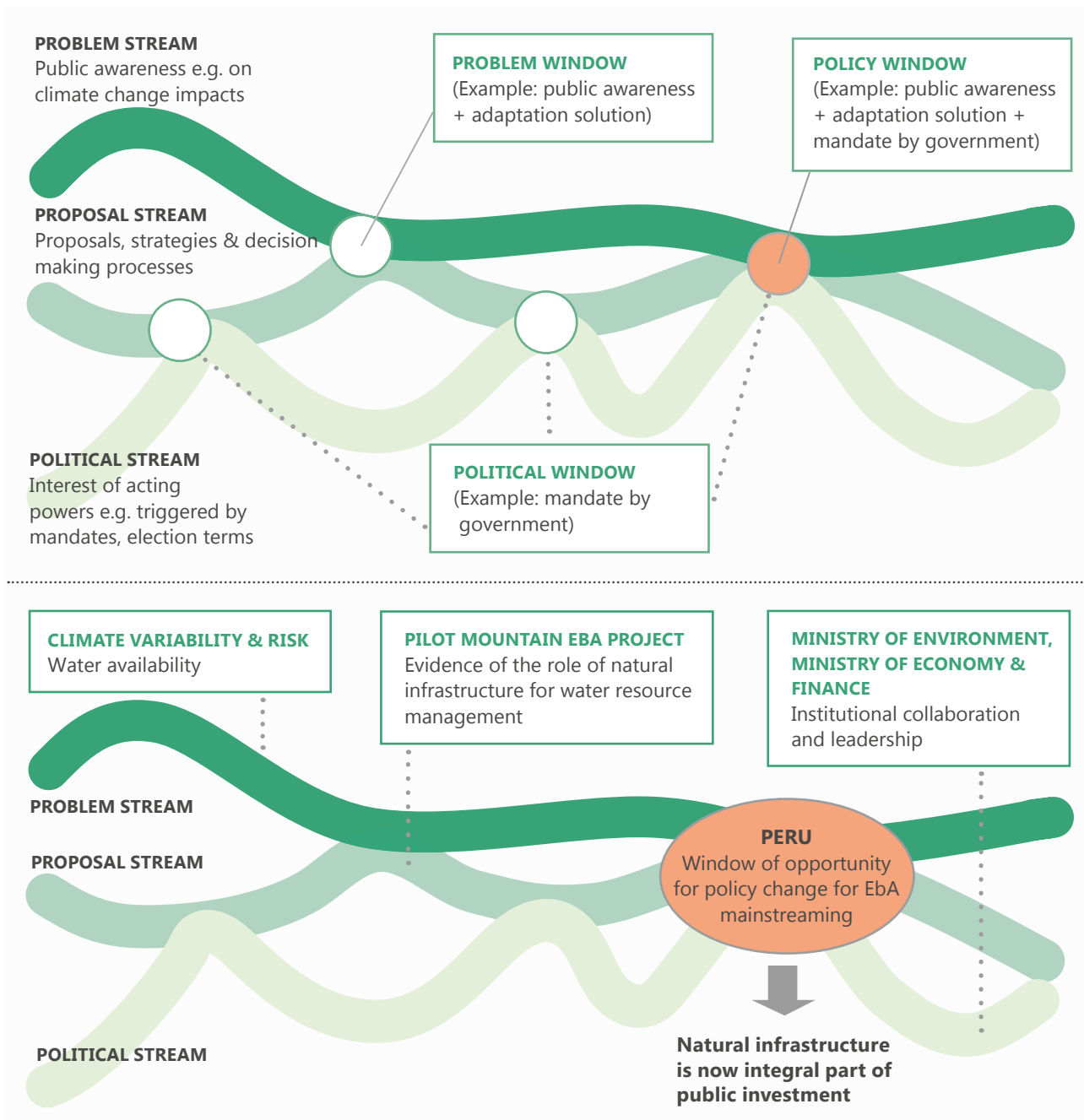


Figure 6 - Window of Opportunity for EbA Mainstreaming in Peru: the Multiple stream model helped analyze the factors that lead to successful mainstreaming and understand the importance of ‘momentum’ to recognize and use opportunities that arise. Source: GIZ, 2019

The present report draws on experiences from Mexico, Peru, South Africa, Viet Nam and the Philippines. Although the countries vary significantly in their socio-economic characteristics and the governance setting, they demonstrate common opportunities and challenges regarding EbA mainstreaming. Findings of the country reports are based on both primary and secondary data and draw on three sources:

- An extensive review of EbA relevant policies, acts, regulations, strategies, programs in the partner countries.
- Analysis of applied measures / case studies at the online platform PANORAMA Solutions for a Healthy Planet.

- Interviews with government officials and other stakeholders, including personnel from ministries and agencies; representatives of development partners; civil society organizations; business entities; and community members.

The following section analyses the potential entry points that stakeholders might leverage for mainstreaming EbA into development and climate change agendas based on practical cases and success stories. As mainstreaming can occur in different spheres, the suggested entry points cut across different governance structures and at different levels (national, local and community). They intend to highlight the variety of potential stakeholders as well as the stepwise process of mainstreaming.

III. Strategic entry points for mainstreaming EbA: Success stories

Experiences from mainstreaming different agendas, such as climate change adaptation, disaster risk reduction or biodiversity conservation, have shown that in order to be effective, EbA mainstreaming should occur across all levels of government, consider different governance constellations, and include all relevant stakeholders. We identified a series of entry points that stakeholders

could leverage to contribute to mainstreaming EbA into the government procedures and operations, both at the federal and at the local level, as well as in processes led by the private sector. The following examples of success stories are intended to promote well-adapted replication in other areas.

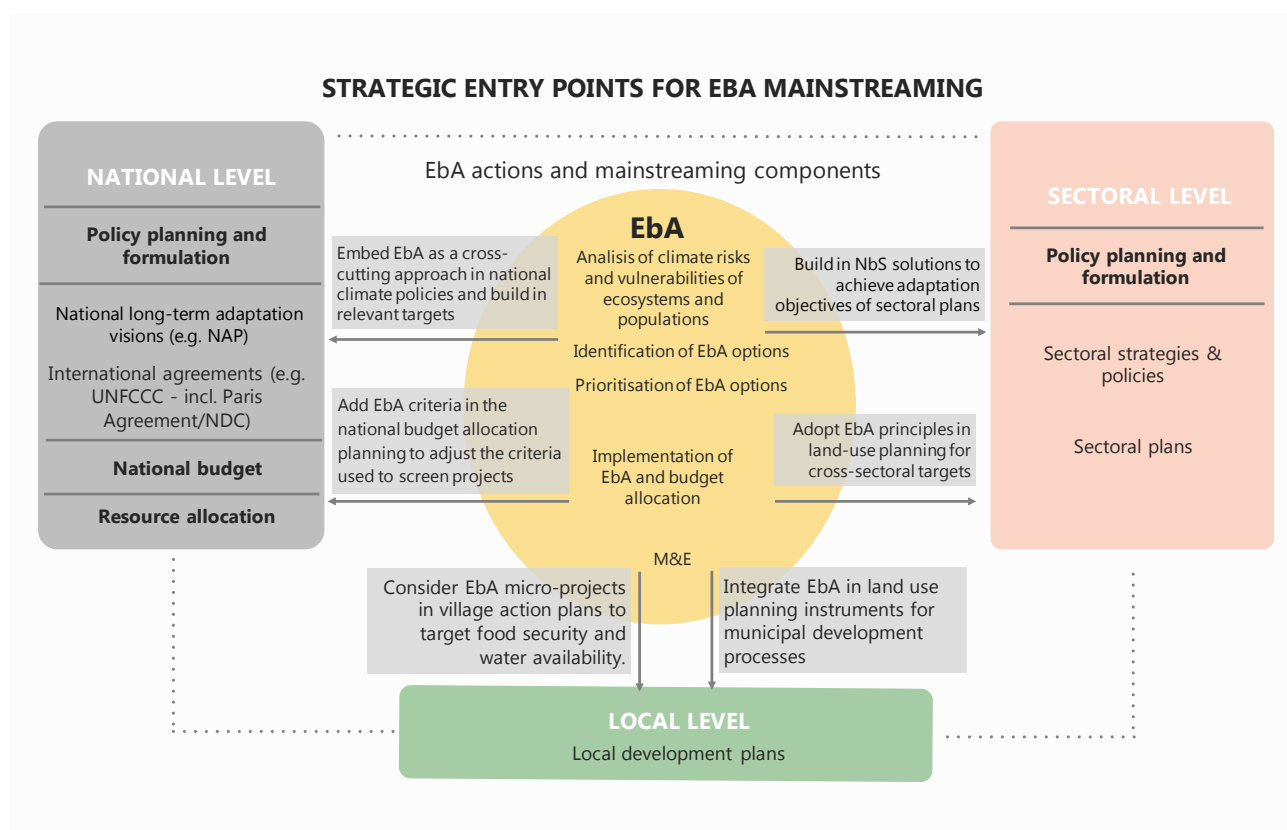


Figure 7 - Key entry points for EbA mainstreaming at different governance levels

Source: GIZ, 2019 adapted from L.Ilieva, 2018

NATIONAL PLANNING & DEVELOPMENT PROCESSES

EbA delivers national-level adaptation goals - therefore these goals should be integrated in national policies and strategies (IIED & IUCN, 2018). Mainstreaming EbA at national level means that relevant aspects will be considered in key climate change and development policy instruments and budget allocations across different governance levels. Regulatory and planning frameworks are a critical enabling factor for EbA mainstreaming across governance levels and sectors.

However, since effective mainstreaming cannot be realistically achieved without sufficient allocation of funds, the government's process for budget allocation is central to ensure the financial resources needed for the planning, implementation and monitoring of EbA measures. Hence the yearly elaboration of national budgets provides an excellent opportunity for effective mainstreaming of EbA at different governance levels and across sectors.

ENTRY POINTS FOR EbA MAINSTREAMING INTO NATIONAL PROCESSES

POLICIES	ENTRY POINT 1: Embed EbA as a cross-cutting approach in national climate policies and build in relevant targets
BUDGET	ENTRY POINT 1: Add EbA-relevant criteria in the national budget allocation planning and in the screening process of projects

ENTRY POINT 1

Embed EbA as a cross-cutting approach in national climate policies and build in relevant targets

One of the three agreed criteria for effective EbA projects analyses whether they form part of an overall adaptation strategy (FEBA, 2017). Therefore, EbA measures have to be clearly recognized as an effective adaptation option in national-level policies. Such policies should include a national development strategy, national adaptation plans (NAPs) and contribute towards the implementation of nationally determined contributions (NDCs).

The NDCs and NAPs in particular, are guiding policy instruments establishing climate adaptation priorities and promoting cross-cutting approaches. While the NDCs define the adaptation targets, the NAPs ideally provide the overall framework, within which the sectoral and local levels shall operate. If EbA principles are integrated in NAPs as a cross-cutting approach, then sectoral and local plans as well as policies will integrate them. Countries that have developed their NDCs and NAPs can integrate EbA in the evaluation and revision phases of the policies.

For countries that have not yet developed these policies, EbA can be considered at the initial stage of policy formulation. For 2018, 103 nations highlight one or more ecosystem-based actions in the adaptation component of their NDCs (Seddon, 2018).

In some cases, the first steps for mainstreaming EbA at national level would take the form of a strategy to guide the process as illustrated in Case study 1 from South Africa. Other countries such as Mexico and Peru have explicitly integrated EbA considerations in their NDCs. Case study 2 highlights the EbA-relevant objectives included in the NDCs of both countries. The Philippines have integrated EbA into their National Development Plan, thus providing multiple entry points for mainstreaming, as illustrated in case study 3.

CASE STUDY 1: South Africa's Strategy on EbA calls for effective coordination and mobilisation of resources

South Africa published their "National Climate Change Response White Paper" which explicitly emphasizes the importance of EbA as part of an overall adaptation strategy. The "Climate Change Adaptation Plan for South African Biomes" identifies EbA actions for each biome, alongside other potential adaptation options. Drawing on this policy context, comes the "Strategic Framework and Overarching Implementation Plan for Ecosystem-Based Adaptation (EbA) in South Africa (2016 – 2021)".

The Strategy identifies four areas of work that will contribute towards achieving the vision. These are structured into the following 'outcomes':

- (1) Effective coordination, learning and communication mobilises capacity and resources for EbA.
- (2) Research, monitoring and evaluation provide evidence for EbA's contribution to a climate resilient economy and society.
- (3) Integration of EbA into policies, plans and decision-making supports an overall climate change adaptation strategy.
- (4) Implementation projects demonstrate the ability of EbA to deliver a wide range of co-benefits. The Strategic Framework includes an Overarching Implementation Plan and an allocated budget which provide a roadmap for five years.

Source: SANBI (2016)

CASE STUDY 2: Integration of EbA in Mexico's and Peru's NDCs

Mexico's NDC promotes objectives that seek to address food insecurity and water access. EbA activities are included to achieve these objectives through integral watershed management, biodiversity and land conservation measures. Specific measures include the reforestation of high, medium and low watersheds with special attention to riparian zones and taking into account native species in the area. Additionally, the NDC promotes conservation and restoration of ecosystems in order to increase ecological connectivity of Natural Protected Areas. The NDC also seeks to strengthen coastal protection with the implementation of a range of conservation of coastal and marine ecosystems such as coral reefs, mangroves, sea grass and dunes.

Source: Gobierno de la República (2015)

Peru's NDC incorporates the vision of the National Strategy on Climate Change. The NDCs are currently the key guiding strategy for the country. The adaptation component prioritizes five sectors: (1) water resources; (2) agriculture; (3) fisheries; (4) forests; and (5) health. Disaster risk reduction and gender are included as cross-cutting topics, and the important role of private finance for adaptation is highlighted. Ecosystem-based principles are considered throughout the proposed adaptation actions, thus providing an enabling environment for greater uptake of EbA in the prioritized sectors.

Source: MINAM (2016)

CASE STUDY 3: The Philippine's Development Plan provides multiple EbA entry points

The Philippine Development Plan (PDP) 2017-2022 supports EbA through the Sustainable Integrated Area Development Strategy. Chapter 20 of the Plan underscores the importance of the role of ecosystem services, especially in the agriculture, fisheries, industry and services sectors "to ensure ecological integrity and improve the socio-economic conditions of resources-based communities through sustainable integrated area development." The Department of Environment and Natural Resources (DENR) has also aligned

priority interventions through the adoption of the Sustainable Integrated Area Development (SIAD) Strategy, in that EbA can be mainstreamed in the action plans from the development of the objectives and key result areas to the crafting of proposed interventions. The current development of the policy tool 'Strategic Environmental Assessment on Resilience' could provide a key instrument in the crafting of future policies and in designing programs that ensure climate-informed decision making and ecological stability.

Source: GIZ (2018 d)



Photo 2 - Rice terraces in the Philippines.

Credits: Lester56, Pixabay

ENTRY POINT 2

Add EbA-relevant criteria in the national budget allocation planning and in the screening process of projects

Projects are routinely screened against a range of criteria to be included in investment programs. Including EbA-relevant criteria can provide a strategic entry point for mainstreaming in national budgets. This allows to build in measures considering the role of ecosystems and to encourage public investment to shift from traditional, grey infrastructure to green infrastructure or a combination of both.

The following case study illustrates how Peru integrates EbA principles and natural infrastructure to become an integral part of public investment projects across sectors and at multiple scales as a prerequisite to access financing from the national budgets.

CASE STUDY 4: Mainstreaming natural infrastructure in Peru's public budget allocation process

Peru is at high risk of limited water availability due to climate change. Mountain and coastal regions are particularly vulnerable to water scarcity. The IKI funded "Mountain EbA Flagship Project", implemented by UNDP, UNEP and IUCN sought to address this vulnerability and ensure water security for mountain communities. This experience demonstrated strong evidence of the effectiveness of EbA principles for water resource management by testing a set of natural infrastructure and hybrid solutions. In 2015 the joint work between the Ministry of Economy and Finance, Ministry of Environment, National Service of Natural Protected Areas and other national and international actors in Peru, supported by

GIZ Peru, led to the elaboration of the "Policy Guidelines for Public Investment in Biodiversity and Ecosystem Services". These guidelines promote biodiversity and ecosystem conservation measures in formulating and implementing public investment projects at local, regional and national level. Additionally, in 2018, the Ministry of the Environment approved a technical form for the formulation of standard investment projects in the restoration of Andean ecosystems, as well as accompanying instructions for its completion. The mandatory use of this official tool is expected to facilitate the planning of public investment projects for ecosystem restoration at regional and local levels.

Source: GIZ (2018 c)

SECTORAL POLICY AND REGULATORY FRAMEWORKS

Certain sectors are particularly sensitive to climate variability; they include agriculture, forestry, fisheries, water resource management, human health, and protected areas. Therefore, each of these sectors needs to consider adaptation measures in their policy planning processes. Policies at the sector level seek to ensure that climate change adaptation priorities established at the national level are operationalised (OECD, 2009).

As adaptation solutions are highly sector-specific, each sector has to formulate a sectoral plan with the purpose to define concrete climate adaptation measures. This provides an opportunity for integrating EbA in the policy formulation process for relevant processes.

ENTRY POINTS FOR EBA MAINSTREAMING INTO SECTORAL POLICY

- SECTORAL PLANS** ENTRY POINT 3: Build in Nature-based Solutions to achieve adaptation objectives of sectoral plans (e.g. water, protected areas, disaster risk reduction)
- LAND-USE PLANS** ENTRY POINT 4: Adopt EbA principles in land-use planning for cross-sectoral targets

ENTRY POINT 3

Build in Nature-based Solutions to achieve adaptation objectives of sectoral plans

Sectors such as water resources and agriculture are particularly vulnerable to climate change because they depend on ecosystems and the services, they provide. Other sectors, such as protected area management can be critical to build resilience for both ecosystems and communities. The following case studies of EbA mainstreaming highlight experiences from three spheres:

- water resources,
- protected area management,
- disaster risk reduction.

Water resources sector

Water management is not only a priority sector under the NDCs, it also is of multi-sectoral importance (e.g. agriculture, food security, health etc.). Therefore, policy development on climate change adaptation and disaster risk reduction for different sectors presents a potential entry point for EbA mainstreaming through water management actions. Given the importance of the sector, all partner countries analyzed show EbA projects that relate to watershed management (GIZ, 2018 a,b,c,d)

CASE STUDY 5: Securing South Africa's water resources

Droughts in South Africa are becoming increasingly more common. In KwaZulu-Natal the "uMngeni Ecological Infrastructure" project aims at integrated watershed planning and management. The goal is to improve the resilience of water services to climate change at a watershed scale. The "Ecological Infrastructure Partnership" is a collaboration of public and private actors that share expertise and resources to protect and enhance the state of ecological infrastructure in the uMngeni catchment. The initiative has 23 signatories and is part of the "Strategic Infrastructure Investment Project 19". The project follows the principles of EbA through using the ability of ecosystems to provide services to downstream communities in a resilient manner. It seeks to enhance governance and regulatory capacity at a catchment scale while implementing

restoration measures in selected sites, leading to improved water service to downstream economies. Socio-economic co-benefits include improved livestock production, an increase in employment in rural areas, and the long-term protection of species rich, endemic grassland ecosystems.

Another example for EbA mainstreaming in South Africa is the project "Building resilience in the Greater uMngeni Catchment". It is led by the uMgungundlovu District Municipality and aims to increase the resilience of vulnerable communities through interventions such as early warning systems, climate-smart agriculture and climate proofing settlements. To date funding has been provided by Government, development banks and multilateral agencies.

Source: GIZ (2018 a)

Protected area management

Protected area management is fundamental for building resilience to climate change for both ecosystems and communities, reducing climate risks and ensuring the provision of key ecosystem services both within these areas and further afield.

Therefore, protected areas should be an important part in the efforts for scaling up EbA and mainstreaming in NDCs and NAPs (Dudley et al. 2010). Case Studies 6, 7 and 10 illustrate effective ways to mainstream EbA in protected area management.

CASE STUDY 6: Mainstreaming EbA solutions in planning & budget allocation processes in Peru

Peru has 68 Nature Protected Areas, which are highly exposed to climate impacts. It has been estimated that by 2030, given their current exposure and adaptive capacity, more than 15% of the Protected Areas will be highly vulnerable to climate change and 62% will be moderately vulnerable (MENA et al. 2014). A key policy instrument is the Master Plan for Protected Areas, which guides the planning and management of all protected areas.

EbA will be part of the Master Plan, which means that it will be mainstreamed in the planning and updating processes of each protected area (every 5 years) to make sure that EbA objectives are aligned with conservation objectives. Each protected area will prepare an action plan with identified EbA measures, which in turn will be included in the NAP.

Source: GIZ (2018 c)

CASE STUDY 7: Comprehensive planning for protected areas in Mexico & trans-sectoral impacts

In 2015, Mexico launched its “Climate Change Strategy for Protected Areas”, which makes a clear effort to mainstream EbA measures. The document is designed as an invitation for collaboration among multiple sectors and levels of government to build resilience to climate change. This can be achieved by managing and conserving protected areas and their ecosystems, and by building long-term institutional capacities (CONANP, 2015).

The tool ‘EbA Mainstreaming Decision-Making’ was developed in 2017 with GIZ-support for the National Commission for Protected Areas. It consists of a strategic framework to guide the integration of the EbA approach into the climate change adaptation programs for protected areas. But it even had impacts beyond the sphere of protected

areas: In 2018, it was used for the methodological development of a vulnerability assessment in the chain of livestock production by business owners in Múzquiz. There it is implemented in ranches with productive and conservation areas of international relevance as resting and feeding habitat in the migration route of the monarch butterfly. It also helps to interconnect the federal protected areas Maderas del Carmen and Irrigation District 004 Don Martín.

In early 2019, it was possible to establish a formal collaboration agreement with the beneficiaries of the project in the meat production, and they agreed to re-invest 24% of the annual net profits to finance the implementation of EbA measures.

Source: GIZ (2018 b) & Y. Echevarría, pers.com, (2019)

Disaster risk reduction

The adoption of ecosystem approaches to address disaster risks has already had results from the adoption of ecosystem-based approaches to address disaster risks (Eco-DRR). Such measures are, among others, reforestation of riverbanks and riverine flood control through natural infrastructure (e.g. flood bypasses, riparian buffers, wetland construction, etc.). They need to become part of disaster risk management planning as effective prevention and post-disaster reconstruction (known as build back better) solutions. Case studies in South Africa and Peru reveal that mainstreaming ecosystem approaches for DRR is often initiated at the local and regional level and is a highly participative and collaborative process.

In South Africa, the city of Durban already initiated a Municipal Climate Protection Programme in 2004, representing one of the earliest municipal scale programmes globally to include ecosystem approaches for disaster risk reduction (see Case Study 8).

In Peru, the Regional Government of Lima and the Council of Water Resources of the Chancay-Huaral Basin promoted restoration of urban riparian areas to reduce the impact of extreme rainfall and flood events. The enabling conditions exist to mainstream EbA in the Regional Climate Change Strategy of Lima and the Regional Development Plan, considering the national budget allocation for nature infrastructure projects (see Case Study 2 in GIZ 2018 c).

CASE STUDY 8: Urban EbA and disaster risk reduction in South Africa

Durban initiated a Municipal Climate Protection Programme in 2004, representing one of the earliest municipal scale programs globally to include EbA. The goal was to reduce the impact of extreme rainfall events on local residents and grey infrastructure. The program is multifaceted focusing on a range of assessment, design, implementation and institutional support elements. Activities on the ground include securing the conservation status, and restoration of degraded areas, particularly riparian belts.

While parties initially assumed that EbA was an easier and less-costly option, it proved significantly more challenging in practice. Due to a complex social, political, economic and ecological context, entities found that implementation needs to occur in an incremental and iterative manner with a focus on experimentation and flexibility (Roberts et al. 2012). While it is possible to identify a long-term direction, implementation can be both technically challenging and resource intensive in practice.

Source: GIZ (2018 a)

ENTRY POINT 4

Adopt EbA principles in land-use planning for cross-sectoral targets

Land-use planning seeks to integrate priorities of different economic sectors, it provides an opportunity to mainstream Nature-based Solutions across sectors such as agriculture, forestry and water management. For that reason, land-use planning processes (e.g. spatial planning, land-use management plans), are a key entry point for the mainstreaming of EbA for climate adaptation.

Case Study 9 illustrates how Mexico promotes the consideration of EbA principles in coastal landscape planning.

CASE STUDY 9: Grandes Islas Region in Mexico adopts integrated landscape management with EbA measures

In 2010, Mexico's National Commission for Protected Areas published its Climate Change Strategy for Protected Areas. More recently, the Commission has been shifting the focus from solely promoting the adaptation of biodiversity to a more integrated landscape approach considering the ecosystem services that protected areas provide. The Grandes Islas Region took this approach on board for their integrated coastal landscape planning and management, which includes EbA measures.

The formation of a core multi-stakeholder group led to the integration of an inter-sectoral planning process at a landscape level that incorporated EbA approach. Highly participatory processes led to the inclusion of EbA measures into action plans. EbA measures, such as the establishment of no-go fishing areas in an effort to protect and restore commercial fisheries, which are affected by temperature increase and ocean acidification.

Source: GIZ (2018 b)



Photo 3 - Local communities participating in waterflow rehabilitation.

Credits: INECC, 2016

LOCAL AND COMMUNITY PLANNING PROCESSES

Local planning processes focus primarily on distribution and management of natural resources. The aim is therefore to protect and strengthen rural livelihoods, contributing to poverty reduction and economic development at all scales. Given the context specific aspects of climate adaptation, national and sectoral plans have constraints to effectively respond to local needs. Therefore, Nature-based Solutions need to be incorporated into locally

driven rural planning processes to guarantee that local communities access the multiple benefits. Engaging multiple stakeholders in the process (i.e. local and indigenous population, civil society, academy) is pivotal for the effective planning at local level. Village action plans are key planning tools for local communities, promoting the sustainable management of a territory and natural resources.

ENTRY POINTS FOR EbA MAINSTREAMING INTO NATIONAL PROCESSES

VILLAGE ACTION PLANS ENTRY POINT 5: Consider EbA micro-projects in village action plans to target food security and water availability

MUNICIPAL PLANS ENTRY POINT 6: Integrate EbA in instruments for municipal development planning processes

ENTRY POINT 5

Consider EbA micro-projects in village action plans to target food security and water availability

Village action plans with their micro-projects have the goal to address a specific problem that occurs at local level, for example food security, water quality or availability. Therefore, it is pivotal to integrate EbA as potential solution to these challenges under a scenario of climate change. EbA measures can be introduced either as stand-alone micro-projects or in combination with other measures as part of the village action plans. These action plans create ownership of processes that in turn can ensure

sustainability of projects and initiatives in the long run. Case Study 10 describes how integrating EbA as part of co-management agreements with indigenous population in Peru, creates ownership of processes and enables the replication in other protected areas, whereas case study 11 from Viet Nam shows how local communities affected by rising sea levels and storms, successfully initiated mangrove restoration measures.

CASE STUDY 10: Co-management agreements promote EbA measures in community nature reserve in Peru

The co-management agreements are so-called "life plans" promote a vision of integral development to guide the land use planning of the community territory. The project EbA Amazonia had the objective to reduce the vulnerability to climate change of indigenous communities that depend on fragile ecosystems as the Amarakaeri Communal Reserve, Madre de Dios, Amazonas. The initiative promoted EbA measures to ensure food security and reduce deforestation. The activities were developed in tight collaboration with the indigenous population and designed

into micro-projects. The form integral part of the co-management agreement with the Communal Reserve. Replication of this success story is essential for the effective mainstreaming of EbA across all Communal Reserves and to become part of the Master Plan for Nature protected Areas in Peru. Apart from the local benefits, this will contribute to the Regional Climate Change Strategy of Madre de Dios and the national agenda for climate change.

Source: GIZ (2018 c)

CASE STUDY 11: Co-management of mangroves in Cat Ba Island, Viet Nam

Over 700 ha of mangroves and tidal flats in Phu Long Commune, Cat Ba Island, are the main source of subsistence and income generation for local people. The area is also the buffer zone for Cat Ba National Park (NP). Mangrove degradation was a major problem, especially in the context of increasingly intense storms and rising sea levels. Smallholder farmers were vulnerable to these extreme events, but also to saltwater intrusion and the subsequent salinization of the soils. In addition, water pollution and aquatic diseases seriously damaged shrimp farms.

Initially, the locals sought to restore the mangrove belt by themselves to reduce the impact of storms and improve the aquatic resources. Later on, they received the technical support of Cat Ba NP as well as policy support from the local authorities (low-interest loans for aquaculture). Accordingly, mangrove rehabilitation and a change of aquaculture towards more sustainable management (from intensive aquaculture to semi-intensive and extensive farming) has taken place.

Source: GIZ / Hoang, Ha 2018

ENTRY POINT 6

Integrate EbA in land use planning instruments for municipal development processes

To support mainstreaming at municipal (provincial) level it is important to integrate EbA principles in planning processes. Land-use planning is a key instrument at municipal level to guide policies. The process usually adopts a landscape or watershed scale, which links local and national processes in tackling development and climate change issues. Case studies from South Africa and the Philippines present experiences with land-use planning at catchment and local level.

South Africa applies integrated landscape management especially at a catchment scale in areas under communal tenure such as Ntabelanga-Laleni Research Investment Strategy (NLEIP), Umzimvubu Catchment.

Considerable progression in EbA planning as part of land-use management processes has been made in a number of catchments, including the uMngeni, Ntabelanga, Umzimvubu and Breede (GIZ, 2018). From a governance and mainstreaming perspective, it is interesting to observe that a range of state and private institutions are showing increasing interest in EbA.

The Philippines have a Land Use Planning Process that is managed at different governance levels. As highlighted in Case Study 11, the central process is carried out at the local level (through local government units). The national government (through the Housing and Land Use Regulatory Board) provides guidance in the process through policy issuances and decisions.

CASE STUDY 12: The Philippines adopts ridge-to-reef approach for land-use planning

In 2014, the Housing and Land Use Regulatory Board in the Philippines, released the Comprehensive Land Use Plan Guidebook 2013/2014 as guidance to local government units in formulating/updating their comprehensive land use plans. The Guidebook has adopted the ridge-to-reef approach (R2R) as an integrated watershed ecosystem management framework to emphasize the relationship between the upland, lowland and coastal ecosystems. Volume 2 of the Housing and Land Use Regulatory Board

Guidebook has comprehensively mainstreamed the ecosystems approach from data gathering to crafting the Zoning Ordinance, the policy document of the Comprehensive Land Use Plan that can define and designate specific zones to be regulated by the local government units. Although the Guidebook includes climate change adaptation measures with the introduction of the ecosystems approach, EbA is still yet to be defined and cleared in the land use planning process.

Source: GIZ (2018 d)

ENGAGING WITH THE PRIVATE SECTOR

While the state and local government determine regulations around the use of resources and are in charge of enforcing the law, the private sector also plays a key role. In many cases, it is the private sector that is directly in charge of managing the land. Examples for private sector-led EbA initiatives include:

- Wine-producers in South Africa
- Watershed managers / hydropower in the Philippines
- Entrepreneurs from the forestry and agriculture sector in Peru
- Tourism operators in Mexico
- Infrastructure builders in the Philippines.

Opportunities to engage with the private sector can be enhanced, e.g. via creation of financial incentive mechanisms (tax reduction), elimination of administrative

obstacles, public recognition of good practices, or through initiatives on insurance services. In general terms: Private sector engagement can play a major role in EbA mainstreaming but might require providing support for policy reform, land-use planning, capacity-building and technology transfer.

Businesses in climate-sensitive sectors have a direct interest in adaptation. Climate risks can undermine the infrastructure, energy supply and transport networks needed for business operations. It is crucial to consider that, given that the private sector's main objective is to maximize profit in their operations, they tend to privilege decisions that are efficient and cost-effective. Therefore, it is particularly important in these cases to provide solid evidence that EbA measures actually yield the results they are designed to produce in a cost-effective manner.

ENTRY POINTS FOR EBA MAINSTREAMING INTO THE PRIVATE SECTOR

PUBLIC-PRIVATE PARTNERSHIPS	ENTRY POINT 7: Include EbA criteria into relevant proposals of public partnerships with private business
INCENTIVE MECHANISMS	ENTRY POINT 8: Create financial incentives such as the removal of obstacles for private investments in EbA, the recognition of good practice e.g. via tax reduction, and the elimination of perverse incentives that negatively affect ecosystems.

ENTRY POINT 7

Include EbA criteria into proposals of public partnerships with private business

In South Africa's private sector, both commercial agriculture and non-profit organisations have played a central role in the implementation of EbA measures. Several NGOs are leading EbA projects in certain areas of the country (e.g. WWF-SA, Conservation South Africa,

ICLEI) and commercial farmers are assisting in the implementation of on-the-ground measures, be it in the form of catchment management or through biodiversity stewardship agreements. Case study 13 highlights the role of the wine-growing farmers for EbA mainstreaming.

CASE STUDY 13: Water Stewardships for fruit production in South Africa

The production of fruit in the Breede catchment was identified as part of one of Mark and Spencer's supply chains that are vulnerable to a lack of adequate water supply – a "water risk hotspot". This finding led to the development of water stewardship activities that are led by WWF-SA in partnership with Woolworths, M&S, GIZ, the Alliance for Water Stewardship (AWS), the

Breede-Gouritz Catchment Management Agency and local farmers. The program focuses on water management within rural farmland areas as well as the urban domain. Activities include the clearing of alien invasive plants, on-farm activities (e.g. irrigation efficiency) and the clearing of litter and monitoring of sewage within urban areas.

Source: GIZ (2018 a)

In Mexico, businesses in the tourism sector have established successful partnerships with government agencies and

civil society organizations to protect and use ecosystem services, as illustrated by Case Study 15.

CASE STUDY 14: Design of an insurance policy for coral reefs to protect tourism infrastructure in Mexico

Hotel owners in Mexico are required to pay a government fee in exchange for the right to build infrastructure on coastal territory. In 2005, hurricane Wilma hit the region, with an overall impact of over US\$ 1.5 billion (\$18,000 million pesos) dollars in direct and indirect costs (CENAPRED, 2006). As a result, hotel owners decided to voluntarily increase this fee by 25% in order to cover for beach filling efforts with sand from foreign locations, given that eroded beaches tend to drive tourism away. In an effort to maximize efficiency in the use of such resources, hotel owners are now resorting to a different finance scheme.

The Nature Conservancy, Swiss Re (global reinsurer) and the hotel owner's association, in coordination with CONANP, are currently working on the design of an insurance policy pilot to cover for the potential beach erosion that could result from natural hazards as hurricanes. The inclusion of EbA was only possible because of the availability of solid technical evidence that demonstrated that well-preserved coral reefs have the ability to reduce wave energy by 97% (The Nature Conservancy, 2017), hence the erosion of beaches and damage of infrastructure.

Source: GIZ (2018 b)

In Viet Nam, new flood-based farming systems provide higher incomes than traditional rice farming, while

increased storage of floodwaters reduces climate risks.

CASE STUDY 15: Flood-based farming systems in the Mekong Delta in Viet Nam

The Mekong River Delta in southern Viet Nam, is one of most vulnerable deltas in the world. In the flood plains, local farmers face high risks due to increasing droughts in the dry season and floods during the rainy season. The construction of protective dams, however, quickly eroded the climate resilience of the ecosystem and degraded the biodiversity and productivity in the flood plains. The EbA measures in Thap Muoi district, Dong Thap province are flood-based farming systems. That idea started from the high dyke built between 2000 and 2011, which has led to the reduction of total flood storage capacity by half, and increased the climate risks (floods in the rainy season and drought in dry season), in addition to massive loss

of biodiversity. IUCN's EbA project has supported famers to convert their land use to flood-based livelihoods. This is an innovative combination of aquaculture, rice cultivation and ecotourism in lotus farms. Up to now, 150 ha of rice paddies have been converted to a flood- and drought-resilient lotus farming area. In the commune of My Hoa, Thap Muoi district, the models of lotus-fish, lotus-rice, lotus-ecotourism and intensive lotus are developing well and bring regular income for the farmers. The profit of these systems is higher than traditional rice farming while the lotus farming can store 1,500 m³ of floodwater per 1,000 m², which is more than double that of intensive rice cropping.

Source: GIZ / Hoang, Ha 2018



Photo 4 - Adaptation in coastal waters in Viet Nam: due to rising water temperatures, mussels in the breeding farms are hung lower on the lines.

Credits: Th. Amend

CAPACITY BUILDING AS A CENTRAL MECHANISM TO ENABLE EBA MAINSTREAMING

Capacity-building on EbA for multiple stakeholders at different governance levels is needed to support mainstreaming efforts. Awareness by national policymakers and decision makers, and technical skills for practitioners to implement EbA approaches is critical to strengthen the role of local actors in planning and implementation.

As demonstrated throughout the assessment, local actors (e.g. municipalities, local businesses, individual landowners, communities, and indigenous associations) play a leading role in promoting and implementing EbA measures.

They often have excellent knowledge about the factors that shape the vulnerability of the local population and ecosystems. Nonetheless, their capacity is constrained due to their often-weak technical knowledge and organizational skills.

Continued and specialized capacity strengthening of local officials and community representatives are crucial to address these challenges and enable the leadership of local actors in mainstreaming EbA. Experiences from Peru, Mexico and the Philippines, as illustrated in Figure 8, show the role of capacity building on EbA at different levels for the mainstreaming efforts.

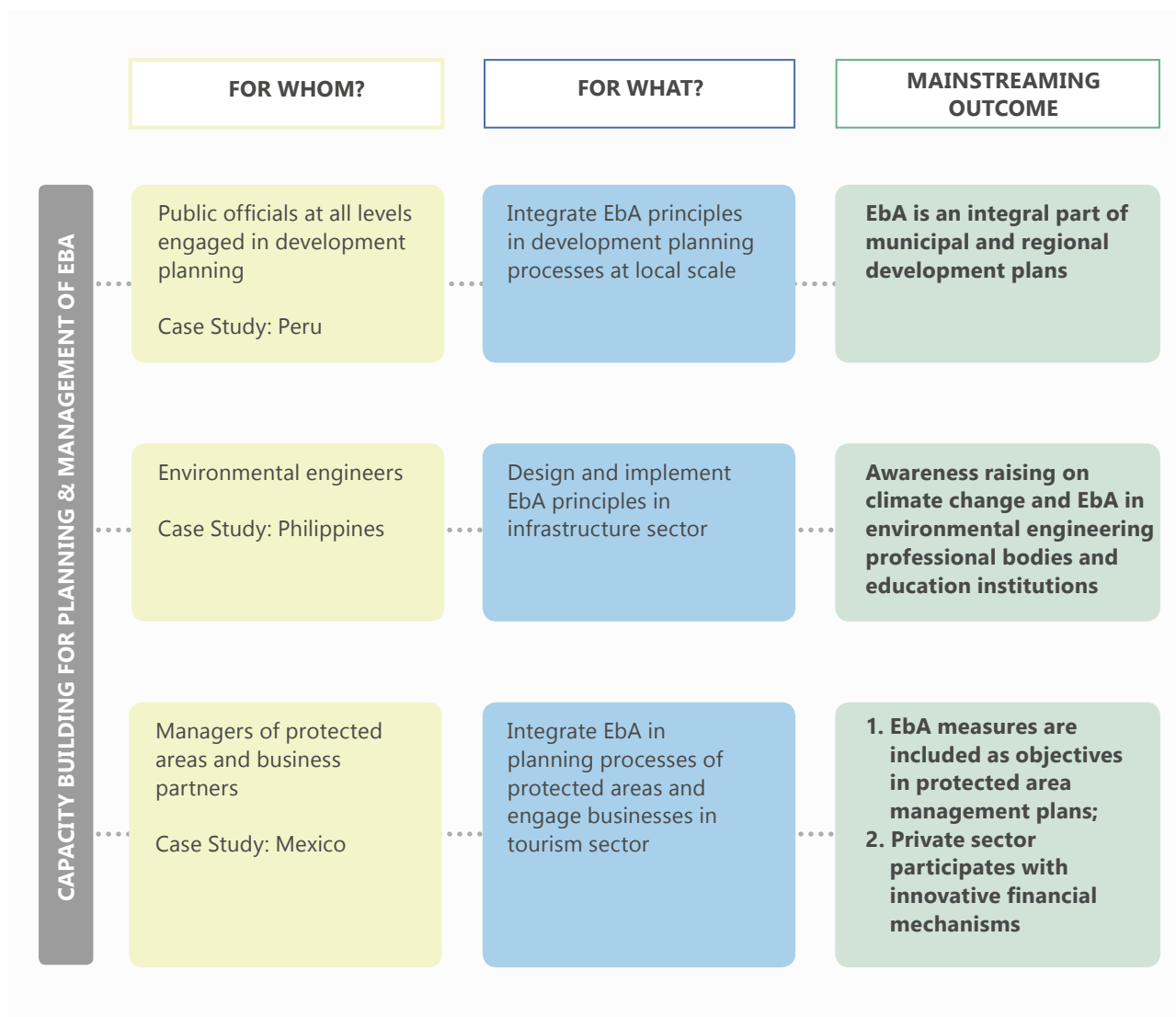


Figure 8 - Capacity building for planning and management of EbA as an enabling factor for mainstreaming

Based on case studies: GIZ, 2018 a-d

A NOTE ON TOOLS: EXAMPLES OF AVAILABLE TOOLS FOR MAINSTREAMING EbA

A range of tools have been developed to facilitate and provide a framework to guide stakeholders on the best ways to mainstream the EbA measures into existing or new adaptation planning processes. Two of the following tools were developed and applied in Mexico, the third element refers to a tool navigator, which allows for screening a wide range of more than 200 tools – some of which are relevant for mainstreaming, and the last one was developed in the context of GIZ supported EbA projects.

Prioritising Climate Change Adaptation Measures – Integration of EbA

The Methodology for Prioritizing Climate Change Adaptation Measures was jointly developed in 2015 by the Secretariat of Environment and Natural Resources and the adaptation team of the Mexican-German Climate Change Alliance, with the participation of the National Institute of Ecology and Climate Change and the National Commission of Protected Areas.

Source: Zorrilla, M., & Kuhlmann, A. (2015)

EbA Mainstreaming Decision-Making Tool

In 2017, the Climate Change Strategies Office of the National Commission for Protected Areas commissioned an analysis of the implementation of measures that were defined in the climate change adaptation programs for protected areas in Mexico. The project was supported by GIZ's Mainstreaming EbA initiative. As part of this analysis, a tool was developed that consisted of a strategic framework to guide the integration of the EbA approach into the climate change adaptation programs for protected areas. In 2018, in addition it was used for the methodological development of a vulnerability assessment in the chain of livestock production by business owners in areas of high conservation value.

Source: Echeverria, Y. (2017)

EbA Tool Navigator

The searchable database of tools and methods relevant to EbA was developed by IIED with support from IUCN, UNEP, WCMC, and GIZ, and financed by the German Ministry for the Environment, BMU. The website provides access to tools, training, resources, webinars and links to case studies. A pilot version was launched in October 2018, updated in January 2019.

Source: IIED; <https://www.iied.org/help-pilot-navigator-tools-for-ecosystem-based-adaptation>

Mainstreaming EbA to Climate Change into Development Planning

A training course for decision makers, planners and practitioners. GIZ developed this training course in order to enhance capacities among stakeholder in partner countries in successfully tapping the potential of ecosystem services for climate change adaptation. It builds on the training courses Integrating Climate Change Adaptation into Development Planning and Integrating Ecosystem Services into Development Planning. Its aim is to strengthen the consideration and selection of EbA measures as part of an overall adaptation strategy, and to enhance capacities among development actors and partner institutions in this regard. The core target group are practitioners. Following the logic of this guidance and six steps for mainstreaming EbA, it contains four core modules and is flexibly adaptable to participant's specific needs.

Source: GIZ; <http://www.adaptationcommunity.net/trainings/training-course-mainstreaming-ecosystem-based-adaptation-development-planning-updated-2016/>

LEARNING FROM PAST EXPERIENCES

As time goes by, there will be increasing numbers of EbA projects and of mainstreaming processes – some of them great successes, others with failures. It is important to learn from both, in view of designing new EbA measures and mainstreaming strategies. The so-called “EbA flagship

projects” in mountain region in Peru, Uganda and Nepal, financed by the international climate initiative IKI of the German government and implemented by UNEP and The Mountain Institute, are among the first to systematically review impacts and draw conclusions.

CASE STUDY 16: Learning from past experiences for future EbA-mainstreaming in Peru

The ‘Ecosystem-based approaches to adaptation: strengthening the evidence and informing policy’ project aims to show climate change policymakers when and why EbA is effective: the conditions under which it works, and the benefits, costs and limitations of natural systems compared to options such as hard, infrastructural approaches. It also aims to promote and provide tools to support the better integration of EbA principles into policy and planning. The project is supported by the International Climate Initiative (IKI) of the

German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU). It runs from July 2015 to September 2019. Project measures include ensuring that past and new EbA projects yield long-term evidence and lessons; extracting that knowledge and evidence; building local capacity to replicate successful approaches; and informing local, national, and international adaptation plans and policies. Applied training will be used to convey lessons, replicate EbA practices, and link to national adaptation planning.

Source: Reid, Podvin & Segura (2018)



Photo 5 - Exchange of views, joint learning, networking across sectors and countries – ingredients for successful EbA mainstreaming.

Credits: GIZ

IV. Emerging lessons for mainstreaming Ecosystem-based Adaptation

Our review showed that EbA mainstreaming is a deliberate process that needs to take place across multiple levels of governance, including civil society and private sector. It can target multiple outcomes (e.g. policies, plans and legislation) and take different routes to achieve these

outcomes. Eleven key lessons which emerged from the analysed case studies reflect on the policy processes, institutional arrangements, stakeholder engagement and communication as pillars to foster mainstreaming of EbA.

INFLUENCING POLICY PROCESSES: IDENTIFYING WINDOWS OF OPPORTUNITY

1

Understanding policy processes and institutional arrangements at all levels is critical to identify potential windows of opportunity for mainstreaming EbA.

Adaptation decisions have to be based on information on climate variability and change. It is no trivial task to provide adequate information with the necessary level of detail in a user-friendly manner. The uncertainty of climate change information, especially on the impacts on functionality of ecosystems and the services they provide, raises a specific challenge. Scenario-thinking to address uncertainty as well as co-production of information and knowledge management provides a good basis for informed and transparent decision-making. Co-constructing an information and knowledge base from indigenous, local and scientific sources helps to foster robust and locally appropriate solutions to build the resilience of natural and societal systems.

2

Integrating EbA criteria and principles into the national budget allocation process enables mainstreaming outcomes at multiple levels.

Peru demonstrates that public financing for EbA can be allocated through national budgets across sectors and at multiple scales, ranging from local to regional and to national level. Apart from ecosystem-related sectors (e.g. water, agriculture and forestry), the country has made the case for the potential of integrating biodiversity and ecosystem conservation also in other sectors, such as infrastructure, thus moving from grey to green or hybrid adaptation measures.

3

It is important to ensure a balance between top-down and bottom-up approaches for mainstreaming EbA.

In practice, integration of climate change into national and sector policies and strategies should rely on a mix of top-down and bottom-up approaches. Experiences demonstrated that taking such a synergistic approach provides opportunities and multiple benefits: EbA initiatives can be pioneered at the local level, joint analysis of feedback and lessons learned can be integrated into policy processes, which enables replication and scaling-up of the approach. The majority of existing EbA programs in South Africa have been led by a champion within both the rural and urban domains. The programs have often been developed in a bottom-up, gradual manner, leveraging funding and capacity opportunities as they arise, and provided lessons learned to support scaling-up.

4

EbA should be made an integral part of Land-Use Planning.

There is a need to define and embed EbA in the land use planning process and have a clear and effective law/order to mainstream EbA in the development of the cities and communities. The roles and mandates of the different actors in the process need to be clarified. The example of the Philippines shows how mainstreaming has grown from land use planning in a "ridge-to-reef" approach, to include legal aspects, the definition of responsibilities and training on all levels.

5

Delivering necessary policy change for EbA requires inter-agency collaboration across governance scales.

The role of institutions and policy processes at different governance scales is essential for achieving EbA mainstreaming. Inter-agency collaboration, as for instance in the Inter-ministerial Commission on Climate Change in Mexico (CICC⁴) is recommended to make EbA a cross-cutting concept. The 'silo effect' is often quoted in the analyzed case studies.

6

Collaboration and institutional leadership are a critical enabling factor for EbA mainstreaming in policy-making processes.

A typical arrangement for the co-ordination of adaptation strategies is for the Ministry of Environment to assume overall responsibility for climate change. Experience suggests that this arrangement leads to weak intersectoral co-ordination. A powerful central body, such as the office of the Ministry of Finance, can better co-ordinate implementation by sectoral ministries, review legislation and hold implementation agencies accountable for their results. It is critical that ministries that play a key role in development, such as Ministries of Planning, Agriculture and Trade, are also engaged in the development of adaptation strategies. In Peru the established collaboration between the Ministry of Economy and Finance and Ministry of Environment is well positioned to effectively mainstream EbA.

7

New institutional partnerships and resources are necessary to generate the knowledge capital needed for effective EbA.

The transdisciplinary character of EbA requires that institutions work outside of their traditional comfort zones. In Durban, South Africa, a research partnership has been developed between eThekweni Municipality and the University of KwaZulu-Natal through a memorandum of agreement. This focuses on advancing knowledge in biodiversity conservation and management within the context of global environmental change and includes an internship program aimed at building human capital for the municipality in these areas. Seed funding has been provided for the research and internship program by the municipality and is being used by the university to seek additional funding to expand the project scope and range of partners. In the Philippines, the "People's Survival Fund" was created as an annual fund for local government units and community organizations to implement climate change adaptation projects that will better equip vulnerable communities to deal with the impacts of climate change. It supplements the annual appropriations allocated by relevant government agencies and local governments for climate-change-related programs and projects.

⁴ The Inter-ministerial Commission on Climate Change in Mexico, launched in 2005, is responsible for coordinating the formulation of policies on climate action. It provides institutional support at the highest level and is comprised of 13 federal ministries including the Ministry of Interior (SEGOB), Ministry of Foreign Affairs (SRE), the Ministry of Agriculture, Rural Development, Fisheries and Food (SAGARPA), the Ministry of Communications and Transport (SCT), the Ministry of Navy (SEMAR), the Ministry of Social Development (SEDESOL), the Ministry of Tourism (SECTUR), the Ministry of Economy (SE), The Ministry of Public Education (SEP), the Ministry of Health (SSA), the Ministry of Energy (SENER), the Ministry of Environment and Natural Resources (SEMARNAT) and the Ministry of Treasury and Public Credit (SHCP).

⁵ The National Integrated Climate Change Database Information and Exchange System (NICCDIES) serves as the integrated climate information portal of the Climate Change Commission (CCC). NICCDIES serves as the primary enabling platform of the CCC in consolidating and monitoring, among other things, data and information on climate change and climate action from sources and actors coming from both public and private sector and other stakeholders, allowing for decision-makers to access, distribute and exchange these data for use in policymaking, development planning, investment decision making. [Source: http://climate.gov.ph](http://climate.gov.ph)

ENGAGING MULTIPLE ACTORS IN THE PROCESS

8

Enhanced collaborative governance and planning is essential for EbA mainstreaming.

EbA is inherently interdisciplinary and cross-sectoral approach and thus calls for a multi-stakeholder process. EbA mainstreaming can be driven and supported at different governance levels and by different stakeholders. In that sense, different sets of actors can hold key roles in EbA governance. However, in order to achieve long-lasting change, both at the policy level and on the ground, collaborative governance is crucial. It has proven to be very beneficial to identify and work with a champion who has the mandate to bring all key actors together. In South Africa, considerable advances in EbA planning has been made in a number of catchments based on a governance model between state and private institutions. Catchments often represent a crucial level of governance and can provide a good opportunity to create new or support existing entities to lead participatory planning and EbA development.

9

Highlight the cost-effectiveness and direct, short-term benefits to attract the private sector.

Apart from the allocation of public funds for EbA projects, many countries will require the mobilization of new and additional funding to tackle the financing gap. Private sector involvement in the context of innovative direct financing models for EbA could help bridge this gap. However, since businesses generally privilege decisions that are efficient and cost-effective, it is particularly important to provide solid evidence that EbA measures actually yield the results they are designed to produce. Note that the term "private sector" can encompass a wide range of stakeholders (e.g. private land-owners, tourism operators, insurance companies, investors), each of which will require a specific engagement strategy that takes into account their specific needs, interests, and potential role in the implementation of EbA, and uses strategies and terminology familiar to the sector.

EFFECTIVE COMMUNICATION AND INCREASED CAPACITY: THE BASICS FOR MAINSTREAMING

10

Simple messages can be a powerful tool to make the case for EbA.

Communicating in simple messages offers a powerful tool to increase awareness and interest. If the message is successfully delivered, it might lead to the allocation of more resources. This is especially true for improving bottom-up and horizontal mainstreaming through inter and intra-organizational cooperation and participation in the development of sectoral plans and adaptation projects. In recent years, the global conservation community has escalated its communication and awareness raising efforts by harnessing the concept of "natural solutions" in an effort to gain buy-in from other sectors for the conservation of natural resources for multiple purposes. Building on this concept, EbA will only appeal to other sectors if we manage to convey the message that EbA measures are cost-effective and can build resilience and reduce vulnerability of human systems while yielding multiple co-benefits for people and nature.

11

Effective communication about EbA requires a sound understanding of values.

Successful implementation of EbA actions require that practitioners and policymakers communicate effectively with a diverse range of stakeholders. This involves communicating complex concepts such as uncertainty and probabilistic information, ecosystem services and their value, and often very technical scientific data. In the Philippines, for example, the "National Integrated Climate Change Database Information and Exchange System" combines data from public and private sources, important for coherent policymaking and investment decision making⁵. Effective communication also depends on a strong understanding of local or sector-specific values, knowledge and perspectives and on the skills to reach out in appropriate ways, using familiar language / terminology and concepts.

V. Barriers for mainstreaming EbA

An enabling environment is vital for effective mainstreaming of EbA in development planning. However, while mainstreaming of EbA is often well understood at the national level and at the level of field implementation, barriers especially seem to arise when translating

policies into plans, programs, and budgets. Therefore it is important to clearly articulate the main objectives for EbA to be embedded in national planning processes in order to provide an enabling framework for local-level implementation, and to facilitate access to funds.

BARRIERS FOR MAINSTREAMING EBA INTO DEVELOPMENT FRAMEWORKS - EXPERIENCES FROM CASE STUDY COUNTRIES

1

Difficulty in finding a common language and methods for EbA.

Different agencies involved in promoting ecosystem management and adaptation use distinct terminology and separate methodologies, which can hinder coordination.

2

Overlap of institutional mandates.

While at the national level mandates on climate change adaptation and ecosystem management usually are clear, at the regional and local levels responsibilities of institutions often overlap. Especially in bottom-up cases with a potential to mainstream EbA often it is not clear who leads the articulation of initiatives from local to regional level and then to national level to inform policy processes.

3

Limited horizontal coherence of policies.

There is limited alignment between policies and sectoral action plans with regards to adaptation measures but also disaster risk reduction.

4

Lack of articulation with policies across governance levels.

A great difficulty is the articulation of policies and plans at local, provincial and national level. When EbA is integrated in the National Adaptation Plan, it has to be further articulated with provincial and local planning process in order to be effectively implemented. Often, this proves to be challenging.

5

Monitoring and evaluation of EbA measures is challenging.

Indicators for M&E of EbA measures are challenging to find, since processes depend on time-frames, actions and planning across sectors and regional or administrative entities, with complex interactions and interdependencies. In addition, available information is very limited with regards to baselines or construction and monitoring of indicators.

6

Limited capacity of national institutions to support the validation and implementation of EbA initiatives.

Due to limited technical skills, human and financial resources, national entities often cannot respond to the need for technical assistance (e.g. revision and approval of EbA project proposals pursuing public investment).

7

Effective mainstreaming is a resource intensive and long-term process.

However, project timelines and budgets rarely take this into account. Oftentimes project leaders, e.g. institutional and community stakeholders, are forced to initiate the adaptation planning process in a vacuum. The planning and implementation process in many cases is a multi-year participatory initiative, which needs to secure trust and establish long-term relationships among a range of actors. This can be a demotivating factor for initiating such processes.

VI. Recommendations for future strategies for EbA mainstreaming

While the uncertainties associated with climate change and the potential effects it may have on ecosystems and societies are high, this should not be a cause for inaction. We know enough to be able to put in place good strategies. By ensuring that they are inclusive and adaptive we can rapidly learn and improve upon them. Sharing our success stories, challenges and failures (e.g. via the platform PANORAMA Solutions for a Healthy Planet) will greatly improve our chances of developing good, effective strategies for EbA mainstreaming.

In many cases the best bet for climate change adaptation and risk reduction via nature-based solutions is to improve the ecosystem resilience by reducing the effects of non-climatic stressors. A crucial step is to mainstream EbA objectives into national strategies that coordinate the activities of the different sectors. Good moments for mainstreaming might occur, when a specific sector comes under pressure and there is a felt need for change. But whatever entry points we choose: immediate, well-considered action is necessary if we are to maintain ecosystem values and services for human development into an uncertain future.

A REMINDER: THE IMPORTANCE OF HEALTHY ECOSYSTEMS

Since resilient ecosystems are vital for EbA, a specific focus needs to be placed on adequate management of the 'green capital'. Managed adaptation to climate change is still a fairly new field of nature protection. In the context of EbA projects restoration of deteriorated ecosystems will increasingly play a role. Some adaptation actions will be based on existing well-accepted restoration methods, although used

in a new context, others will be innovative methods with a few existing examples, and some may be experimental. Due to the high levels of uncertainty associated with, not only climate change projections, but also the complex array of interactive variables inherent in the ecosystem(s) components, processes, functioning, values, services and non-climatic pressures with climate change, it is essential, not optional, to regularly monitor the efficacy of the chosen adaptation options so that actions and approaches can be changed if they are not fulfilling the needs.

Monitoring of progress and outcomes of adaptation actions for the ecosystems and their functions in the context of EbA is essential to ensure that:

- resources for management and restoration of ecosystems are being used effectively
- desired results are being achieved
- actions are not having maladaptive outcomes (for communities, or for biodiversity)
- knowledge is developed for future planning.

Ideally, implementation and monitoring of actions should include reporting of the process outcomes and a formal research component to ensure rigor and confidence in the results (Paice & Chambers, 2016). This will contribute to close existing knowledge gaps and provide necessary information for other management bodies in development and implementation of appropriate strategies. Regular reflection on EbA projects, as well as their biodiversity pillars is needed not only to assess the monitoring information and the efficacy of adaptation options but also to stay abreast of new information on climate change, risk reduction and adaptation options – for people and nature.



Photo 6 - Training workshop on the integration of EbA into public investment planning & project implementation in Peru. Credits: Th. Amend

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LINKS

- Climate Change and Biodiversity: www.cbd.int/climate
- GIZ – PANORAMA solutions for a healthy planet – Ecosystem-based Adaptation Solutions <https://panorama.solutions/en/portal/ecosystem-based-adaptation>
- IIED, IUCN, WCMC: Ecosystem-based Adaptation <https://www.iied.org/ecosystem-based-approaches-climate-change-adaptation>
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