



Advancing Adaptation in NDCs 3.0

Twelve recommendations
for adaptation in NDCs

APRIL 2025

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Strengthening Enablers

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SECTION 1

The urgency of action

The rise in global temperatures continues unabated—the World Meteorological Organization (WMO) recently concluded that 2024 was the warmest year on record—about 1.55 °C warmer than preindustrial levels ([WMO, 2025](#)). The impacts of this warming are increasing rapidly—whether driven by gradual changes such as sea level rise or by the increased intensity of extreme weather events such as tropical cyclones, heat waves, or floods.

At the same time, the **gap in mitigation efforts persists** ([UNFCCC, 2024](#)), leading to estimates of warming that could exceed 2.0 °C by mid-century if efforts are not accelerated. This is particularly concerning as with every fraction of a degree Celsius warmer adaptation becomes more difficult and more expensive and the likelihood of reaching ecological tipping points and limits to adaptation grows ([IPCC, 2023a](#)). While mitigation efforts are imperative, it is becoming ever more urgent to adapt and prepare for a warming world.

However, despite this urgency, adaptation actions are not happening at the scale and pace needed—the First Global Stocktake noted with concern the finding in [Sixth Assessment Report \(AR6\)](#) of the Intergovernmental Panel

on Climate Change that “most observed adaptation responses are fragmented, incremental, sector-specific and unequally distributed across regions, and that, despite the progress made, significant adaptation gaps still exist across sectors and regions and will continue to grow under current levels of implementation” ([UNFCCC, 2023](#)).

This shortfall or gap is particularly significant when it comes to the financing of adaptation, as the United Nations Environment Programme (UNEP) [Adaptation Gap Report \(2024\)](#) noted. While international public finance flows are rising (US\$ 28 billion in 2022), the gap between what is needed and what has been delivered is still huge: as much as US\$ 187–359 billion per year. The finance deficit refers not only to the quantity of finance but also to the quality. Most adaptation finance (around 62% [[OECD, 2022](#)]) takes the form of loans rather than grants, worsening the debt burden on developing countries and jeopardizing their development progress.

Responding to the full range of possible climate change outcomes **requires transformational adaptation** in tandem with incremental adaptation. As the IPCC AR6 report noted, building resilience to the increasing severity of climate change impacts could require going beyond incremental adjustments and engaging in systemic changes. For example, transformational adaptation in response to sea level rise affecting coastal regions might involve managed retreat to reduce the population and property exposed to erosion and storm surge. In the case of urban flooding, reorienting city planning and urban infrastructure to emphasize nature-based solutions such as green spaces or permeable pavements may be necessary. Transformational adaptation often requires approaches that are cross-sectoral and multilevel. Actions must address issues of equity, governance, finance, and other enabling factors in an integrated manner and move towards climate-resilient development that incorporates adaptation-mitigation synergies.

The next round of Nationally Determined Contributions (NDCs), referred to as **NDCs 3.0, due in 2025, provides an important opportunity for countries to “ratchet ambition”** on adaptation. Ratcheting ambition signals that adaptation is a political priority and increases the scale and scope of adaptation and resilience efforts. It is important to note, however, that the inclusion of adaptation in NDCs is voluntary and country-driven, reflecting each nation’s unique circumstances, priorities, and decision-making processes. While NDCs outline a country’s strategic approach to adaptation, more detailed actions and technical measures are often elaborated in National Adaptation Plans (NAPs).

Efforts to accelerate adaptation action are supported by recent global developments, including, but not limited to:

- The [Sharm-El Sheikh Adaptation Agenda](#), launched at COP27, which outlines global adaptation goals across key sectors to enhance climate resilience.
- [The UAE Framework for Global Climate Resilience](#), adopted at COP28. This framework establishes global targets for key themes and dimensions related to adaptation, providing benchmarks for measuring progress toward the Global Goal on Adaptation (GGA) (see “The UAE Framework for Global Climate Resilience” box, [page 11](#)).
- Efforts by Multilateral Development Banks (MDBs) to develop [a common approach for measuring climate results](#) to complement tracking of climate finance, which includes a set of common indicators that MDBs can apply to track climate impact for adaptation and resilience.

- The [UAE-Belém two-year work program](#), dedicated to developing indicators for measuring the progress made in the above-mentioned targets, also adopted at COP28.
- The [Baku Adaptation Road Map](#) and the Baku High-Level Dialogue on Adaptation, launched at COP29 to enhance the implementation of the UAE Framework for Global Climate Resilience.
- More than 100 Parties to the Paris Agreement submitted their first [Biennial Transparency Reports](#) (BTRs) in December 2024, many of which contain adaptation components.

The UAE Framework presents an important opportunity for countries to reflect adaptation targets in their NDCs, as global action and progress will ultimately depend on national efforts that are supported and enabled by the multilateral process.

In addition to these global advances, NDC 3.0 could draw upon the progress in adaptation planning at the national level. For example, as noted in the recent [UNEP Adaptation Gap Report](#), 171 countries now have at least one national adaptation planning instrument (policy, strategy, plan) in place. This foundational work provides stronger evidence and an institutional base for strengthening adaptation in the upcoming NDCs.

How to use this resource

Section 2 provides further detail on the adaptation-related outcomes from the First Global Stocktake and the UAE Framework for Global Climate Resilience.

Section 3 presents considerations that could inform the scope and strategy for NDCs, building on on-going national processes, and NAPs in particular.

Section 4 outlines 12 recommendations for strengthening the adaptation component in NDCs 3.0. These recommendations recognize that circumstances differ widely among countries; each country will have different development challenges and climate vulnerabilities. Countries are at different stages of their NAPs and other adaptation planning vehicles and of implementation. Rather than providing specific suggestions for enhancement, therefore, this resource provides a starting point for countries to consider the most ambitious adaptation targets for their national context.

Woven throughout the recommendations are examples, case studies, and links to relevant resources to learn more. Links are included to relevant “opportunities” in the [NDC 3.0 Navigator](#), a tool produced by the NDC Partnership and the UNFCCC secretariat to help countries raise ambition and accelerate implementation of NDCs 3.0.

Further support for development of NDCs 3.0 exists for countries through the UN System, which is coordinated through [UNDP’s Climate Promise](#) and the wider [NDC Partnership](#).



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SECTION 2

Insights from the GST and the GGA

The outcomes from the [First Global Stocktake](#) (GST), presented at COP28, underscore the urgent need for both incremental and transformational adaptation actions tailored to diverse national circumstances. The GST calls on Parties that have not yet done so to establish national adaptation policies and planning processes by 2025 and to demonstrate significant progress on their implementation by 2030. Emphasizing the critical importance of a [Global Goal on Adaptation](#) (GGA), the GST highlights the necessity of enhancing adaptive capacity; strengthening resilience; and reducing vulnerability to climate change impacts, particularly for vulnerable regions and communities. The GST stresses the importance of gender-responsive policies and the inclusion of diverse stakeholders, such as Indigenous Peoples and local communities, in shaping effective adaptation strategies.

The GST notes that substantial progress has been made since the Paris Agreement in adaptation planning and implementation but points out persistent gaps and challenges, especially in securing adequate finance and support for developing countries. It also calls for improved monitoring and evaluation systems to track progress and enhance the quality of adaptation actions. A significant emphasis is placed on establishing and improving national inventories of climate impacts and building accessible climate services, including early warning systems, noting that one-third of the world still lacks access to such critical services. The Stocktake also recognizes the need for international cooperation and knowledge sharing to address transboundary climate risks; it urges transformative adaptation actions grounded in the best available science and reflecting equity considerations.

[The UAE Framework for Global Climate Resilience](#) adopted at COP28 is the completion of the two-year Glasgow-Sharm el-Sheikh work program on the GGA. It provides a concrete basis for accelerating national and global action on adaptation. The UAE Framework outlines 11 key target areas to enhance adaptation efforts. These targets aim to provide a comprehensive and structured approach to building climate resilience and include seven thematic targets and four process-related targets (see “The UAE Framework for Global Climate Resilience” box, [page 11](#)).

The GGA decision at COP29 builds upon the UAE Framework on Global Climate Resilience and outlines a clear path forward for the indicators work programme leading up to COP30. It established the Baku Adaptation Road Map and the Baku High-Level Dialogue on Adaptation, both aimed at guiding the implementation of the UAE Framework. The GGA decision also underscores the importance of exploring transformational adaptation approaches in future discussions. The modalities for the Baku Adaptation Roadmap and its key initiatives will be discussed throughout 2025 with the exchange of knowledge, experience and information, the enhancement of understanding of climate risks and impacts, building on the best available science to be considered under this work.

The UAE Framework for Global Climate Resilience

Thematic targets:

- a. Significantly reducing climate-induced **water** scarcity and enhancing climate resilience to water-related hazards towards a climate-resilient water supply, climate-resilient sanitation and towards access to safe and affordable potable water for all;
- b. Attaining climate-resilient **food and agricultural production** and supply and distribution of food, as well as increasing sustainable and regenerative production and equitable access to adequate food and nutrition for all;
- c. Attaining resilience against climate change related **health** impacts, promoting climate-resilient health services, and significantly reducing climate-related morbidity and mortality, particularly in the most vulnerable communities;
- d. Reducing climate impacts on **ecosystems and biodiversity**, and accelerating the use of ecosystem-based adaptation and nature-based solutions, including through their management, enhancement, restoration and conservation and the protection of terrestrial, inland water, mountain, marine and coastal ecosystems;
- e. Increasing the resilience of **infrastructure and human settlements** to climate change impacts to ensure basic and continuous essential services for all, and minimizing climate-related impacts on infrastructure and human settlements;
- f. Substantially reducing the adverse effects of climate change on **poverty eradication and livelihoods**, in particular by promoting the use of adaptive social protection measures for all;
- g. Protecting **cultural heritage** from the impacts of climate-related risks by developing adaptive strategies for preserving cultural practices and heritage sites and by designing climate-resilient infrastructure, guided by traditional knowledge, Indigenous Peoples' knowledge and local knowledge systems;

Process targets:

- h. **Impact, vulnerability and risk assessment:** by 2030 all Parties have conducted up-to-date assessments of climate hazards, climate change impacts and exposure to risks and vulnerabilities and have used the outcomes of these assessments to inform their formulation of national adaptation plans, policy instruments, and planning processes and/or strategies, and by 2027 all Parties have established multi-hazard early warning systems, climate information services for risk reduction and systematic observation to support improved climate-related data, information and services;
- i. **Planning:** by 2030 all Parties have in place country-driven, gender-responsive, participatory and fully transparent national adaptation plans, policy instruments, and planning processes and/or strategies, covering, as appropriate, ecosystems, sectors, people and vulnerable communities, and have mainstreamed adaptation in all relevant strategies and plans;
- j. **Implementation:** by 2030 all Parties have progressed in implementing their national adaptation plans, policies and strategies and, as a result, have reduced the social and economic impacts of the key climate hazards identified in the assessments;
- k. **Monitoring, evaluation and learning:** by 2030 all Parties have designed, established and operationalized a system for monitoring, evaluation and learning for their national adaptation efforts and have built the required institutional capacity to fully implement the system.



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SECTION 3

Adaptation in the NDCs

The NDC is a **high-level policy document** through which countries signal national ambition, communicate targets, and outline what is needed to develop the enabling systems for scaling up implementation and investment. Analysis from the World Resources Institute ([WRI, 2022](#)) shows countries are increasingly viewing adaptation as an important element of the NDC. While the Paris Agreement requires that NDCs include mitigation commitments, the inclusion of an adaptation component remains voluntary and is determined by each country.

The NDC can be used as a tool to integrate adaptation with development, which is core to resilience, while also identifying investment priorities to public and private financiers. Whether or not to include adaptation in an NDC is a national decision, shaped by each country's unique context and priorities. The inclusion of an adaptation component helps ensure investment needs are considered as part of a wider programmatic approach. Where a country chooses to include an adaptation component in their NDC, this should be done within the context of other adaptation-related plans, communications, and submissions, including National Adaptation Plans (NAPs).

This document does not prescribe what elements of adaptation to include in the NDC and how (e.g., aspects to consider, level of detail, or degree of elaboration). Nor is it limited to NDC formulation. Recommendations can be equally applied throughout the NDC implementation process. These decisions depend on the needs of the country, the current adaptation policy, and the planning and institutional landscape—in particular the formulation and implementation of NAPs and how the NDC will be implemented and financed.

The NDC can serve as a vehicle to articulate a country's strategic approach to adaptation, while more detailed planning and prioritization of actions are typically elaborated through NAPs. This guidance is applicable to (1) countries that have recently submitted NAPs or advanced national adaptation planning processes or (2) countries that do not have NAPs and are not in the advanced stages of formulating and implementing NAPs. In countries where recent NAPs exist, the recommendations can serve as a useful basis for setting high-level targets and actions that could be reflected in the NDC. Countries could also use the process of formulating and implementing NAPs to convert targets in the NDCs into actionable and investable plans. For countries without a recent NAP, the NDC could draw upon any foundational work such as national communications, climate risk assessments, and national climate strategies and policies. In either case, a country may opt to have an NDC with a detailed adaptation component or it may choose to keep the NDC to a strategic high-level with the overall indication of climate risks, adaptation priorities, and financing.

The recommendations for enhancement suggested below in Section 4 are relevant to both sets of countries. The country's application of these recommendations in both contexts will vary in scope and detail. Decisions about how to apply the recommendations need to be informed by the level of inputs available and gaps to be addressed—that is, by studies, assessments, and stocktaking of available information; the additional technical, consultative, and consensus building activities that are required; and the time frame of the NDC submission deadlines.



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SECTION 4

Twelve recommendations for advancing adaptation in NDCs 3.0

The 12 recommendations provided below build on the outcomes of the First Global Stocktake and the UAE Framework for Global Climate Resilience. They are grouped into three clusters: Raising Ambition, Accelerating Implementation, and Strengthening Enablers. Each recommendation is followed by specific actions to illustrate how countries might implement the recommendation—either as an input to the NDC or as a part of the targets and actions specified in the NDC. As countries develop their NDCs 3.0, it is important that they synergize and enhance the ambition associated with actions and priorities already identified in NAPs.



Raise ambition through both transformational and incremental adaptation action and climate resilient development.

RECOMMENDATION 1

Consider the full range of plausible climate scenarios when planning adaptation to ensure that actions can sufficiently respond to climate risks, build adaptive capacities, and lead to increased resilience.

RECOMMENDATION 2

Set national adaptation goals and targets that are GGA-aligned and measurable.

RECOMMENDATION 3

Integrate adaptation into development and seek mitigation-adaptation co-benefits to advance climate resilient development.

RECOMMENDATION 4

Prioritize nature-based solutions (NbS), which are cost-effective and synergistic, deliver biodiversity and socioeconomic co-benefits, and link adaptation and mitigation.



Accelerate implementation by aligning targets with NAPs, strengthening all stages of the adaptation-policy cycle, and adopting a whole-of-society approach.

RECOMMENDATION 5

Align and synergize with NAPs by ensuring NDC adaptation targets and priorities are informed by the results and outputs of NAP implementation.

RECOMMENDATION 6

Enhance coordination in governance including by strengthening vertical and horizontal coordination between agencies and ministries to facilitate cross-sectoral and cross-scale adaptation actions.

RECOMMENDATION 7

Foster participatory and inclusive approaches that are gender responsive and include Indigenous and Local Knowledge and youth.

RECOMMENDATION 8

Promote a whole-of-society approach in which inclusive stakeholder engagement enables governments to utilize the capacities and contributions of diverse groups to boost ambition and accelerate NDC implementation.

RECOMMENDATION 9

Strengthen the science and knowledge base to ensure that adaptation actions are evidence based, support national research and innovation systems, and facilitate new adaptation solutions based on lessons learned.

RECOMMENDATION 10

Establish robust monitoring, evaluation, and learning (MEL) systems that measure the effectiveness of actions, evaluate what works and what does not work, and enable learning for iterative decision-making.



Strengthen enablers at the global and national level through enhanced capacity building and by unlocking adaptation finance.

RECOMMENDATION 11

Build institutional and human capacity, including in the government, civil society, and private sector to strengthen climate adaptation efforts.

RECOMMENDATION 12

Build an enabling environment to unlock adaptation finance at speed and scale by leveraging different sources and ensuring access and delivery including at the local level.



Raise ambition through both transformational and incremental adaptation action and climate resilient development.

RECOMMENDATION 1

Consider the full range of plausible climate scenarios when planning adaptation to ensure that actions can sufficiently respond to climate risks, build adaptive capacities, and lead to increased resilience.

Even as we undertake all possible efforts to limit warming to 1.5 °C, available scientific evidence indicates the likelihood of a median warming of 2.5 – 2.7 °C. At these levels of climate change many incremental adaptation options might reach their limits or be ineffective. In such situations, transformational adaptation, which requires significant advanced planning and investment, will be necessary. Many adaptation actions, such as the development of new heat- and drought-resistant plant varieties or managed retreat, have long lead times. Actions will require adequate time, effort, information, and resources and cannot be implemented without sufficient preparation.

A full range of possible climate scenarios will need to be incorporated into the assessment of risk and vulnerability (see, e.g., [European Environment Agency \[EEA\], 2024](#)) to enable scaffolded action plans that can start small and be scaled up quickly if needed. No-regret adaptation solutions will need to be developed for a range of different climate futures. Scenarios should consider projections of decadal variability, especially in climate-sensitive sectors such as agriculture, where long-term scenarios may not always be relevant. Prioritizing investments now to enhance capacities for continued innovation in adaptation will be essential to build adaptive capacity for the future, when it will be needed most.



ACTIONS

- Review recent climate risk, vulnerability and impact assessments to identify the most vulnerable social groups, sectors and ecosystems, potential limits to adaptation at higher levels of warming, and opportunities for increasing adaptation targets and ambition. Consider system-wide impacts and responses within and outside the country (in relation to transboundary risks and regional adaptation options).



RESOURCES

- Projections of climate impacts for regions:
 - › [Climate Impacts Explorer](#) (Climate Analytics)
 - › [World Bank Climate Knowledge Portal](#) (World Bank)
- [The use of scenario analysis in disclosure of climate-related risks and opportunities](#) (Task Force on Climate-Related Financial Disclosures)
- [The NGFS Climate Scenarios Portal](#) (Network of Central Banks and Supervisors for Greening the Financial System)
- [MDB common approach for assessing alignment with Paris Agreement](#) (World Bank)
- [Resilience Rating System \(RRS\)](#) for projects (World Bank)

CASE STUDY

Bangladesh



Photo by BRAC 2024

With the [Bangladesh Delta Plan 2100](#) (Ministry of Planning, 2018), the country introduced strategies for adapting to extreme sea level rise and flooding scenarios, including enhancing embankments and drainage systems to reduce the risks of storm surges, flooding, and saltwater intrusion. These significant efforts will be crucial for protecting vulnerable coastal communities, where incremental adaptation is not sufficient.



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Guidance from the [Network for Greening the Financial System \(NGFS\) Working Group on Climate Scenario Analysis with Acute Physical Shocks](#) offers additional insights at the project level.

At the project level, consider these four main steps in climate risk assessment:

- › **Exposure:** Evaluate the extent to which the project location will be exposed to risks from climate change and geophysical disasters.
- › **Impact:** Assess how these hazards may impact the project's physical investments and beneficiaries. Start to consider risk mitigation measures.
- › **Adaptive Capacity:** Examine how a project's nonphysical components, the broader sector, and development context may influence the level of risk posed to the project. Consider impacts on vulnerable groups.
- › **Overall Risk Rating:** Rate the overall risk from climate and geophysical hazards to the project outcome based on the previous considerations.

RECOMMENDATION 2

Set national adaptation goals and targets that are GGA-aligned and measurable.

The seven thematic and four dimensional targets in the UAE Framework for Global Climate Resilience (see “The UAE Framework for Global Climate Resilience” box, [page 11](#)) provide a useful guide to countries for setting their own nationally appropriate adaptation goals and targets.

The thematic targets of the UAE Framework (**Water; Food and Agriculture; Health; Ecosystems and Biodiversity; Infrastructure; Poverty Eradication; and Cultural Heritage**) underscore the importance of measurable and quantifiable targets for key sectors and systems. Having measurable, quantifiable targets for key systems allows for more explicit consideration of specific indicators and metrics, greater potential for progressively ratcheting up ambition by using previous targets as a baseline, and more effective assessment of ambition and progress on the GGA.

The process-related targets of the UAE Framework emphasize a structured approach that countries can take to develop targets unique to national contexts. The approach suggests countries begin with up-to-date **impact, vulnerability, and risk assessments**, which then inform **planning**—namely, comprehensive national adaptation plans, policy instruments, and planning processes. Following the planning phase, countries move to the implementation of these strategies, ensuring that adaptation measures are effectively executed across relevant sectors. Finally, continuous **monitoring, evaluation, and learning** tracks progress and identifies areas for improvement. By aligning adaptation efforts with the UAE Framework’s process-related targets, countries can systematically reduce vulnerabilities and build adaptive capacity. More explicit connections between the NDCs and the UAE Framework will also be helpful in the context of future GSTs, as they will inform assessments of progress and of ambition and action gaps.



ACTIONS

- Review GGA targets and, based on national circumstances and priorities and on climate risk and vulnerability assessments, set the most appropriate targets or target areas for the NDC.
- Review targets in national development plans, NAPs and complementary national processes such as the Sendai Framework for Disaster Risk Reduction, National Biodiversity Strategies and Action Plans (NBSAPS), and Sustainable Development Goals (SDGs) to identify potential adaptation target areas and targets that have already been set that can be aligned with the NDC.



RESOURCES

- **NDC 3.0 Navigator Opportunity:** [Setting and achieving targets and actions](#) aligned with the Paris Agreement GGA
- The [Sharm el-Sheikh Adaptation Agenda](#), spearheaded by the UN Climate High-Level Champions, supports the GGA through near-term actionable solutions for implementation and finance.

CASE STUDY

Rwanda



Photo by A'Melody Lee / World Bank

Rwanda's NDC and NAP contain clearly defined, quantifiable targets for critical sectors such as agriculture, water, and health, reflecting both the thematic and process-related targets in the UAE Framework for Global Climate Resilience ([NAP Global Network, 2024](#)). For example, Rwanda's NDC includes targets for reducing vulnerability to climate change in agriculture, improving water security, and increasing access to climate-resilient infrastructure and clear indicators and metrics to track progress. Rwanda's adaptation targets are aligned with [SDG13](#) and the Sendai Framework for Disaster Risk Reduction. In the agriculture sector, Rwanda has set measurable targets to improve climate resilience by promoting drought-tolerant crops, improving irrigation systems, and enhancing soil management practices (aligned with the GGA's call for quantifiable adaptation goals). Rwanda's Vision 2050 highlights resilience as a key pillar. The country has established robust monitoring, evaluation, and learning (MEL) frameworks that support continuous assessment and adjustment of adaptation goals, much like the process-related targets in the UAE Framework. and the Sendai Framework for Disaster Risk Reduction. In the agriculture sector, Rwanda has set measurable targets to improve climate resilience by promoting drought-tolerant crops, improving irrigation systems, and enhancing soil management practices (aligned with the GGA's call for quantifiable adaptation goals). Rwanda's Vision 2050 highlights resilience as a key pillar. The country has established robust monitoring, evaluation, and learning (MEL) frameworks that support continuous assessment and adjustment of adaptation goals, much like the process-related targets in the UAE Framework.

RECOMMENDATION 3

Integrate adaptation into development and seek mitigation-adaptation co-benefits to advance climate resilient development.

Embedding adaptation in development plans is essential for achieving the SDGs. Similarly, more rapid progress on the SDGs can lead to increased resilience and improved adaptive capacity.

Integrating climate resilience into national development strategies amplifies adaptation efforts to spur improvements in livelihoods, ecosystems, and socioeconomic sectors. Strengthening adaptation in NDCs can likewise help protect development gains from climate-related risks and promote long-term sustainability and resilience across all sectors.

Climate resilient development requires a focus on reducing exposure and vulnerability to climate hazards and increasing adaptive capacity. To succeed, development must involve integrative thinking across sectors—that is, employing a ‘systems’ approach—and be based on equity. Relationships across land, water, biodiversity, infrastructure, industry, and society need to be considered in the design and updating of sound management and planning policies. The complex interactions among these different systems are evaluated so that action in one area does not have adverse effects elsewhere. Often, synergies can be found that improve the condition of more than one sector. Thinking across policies and sectors in this way encourages policy coherence: coordinating incentives across ministries and across economic, social, and environmental policy areas.

In AR6, the IPCC highlighted the urgent and critical need to integrate adaptation measures and their enabling conditions into mitigation to advance sustainable development for all. [UNFCCC's 2023 NDC Synthesis Report](#) identified that 40% of the submitted reports link adaptation actions with sustainable development frameworks; however, only 27% identified adaptation-mitigation synergies. These figures represent progress from previous NDCs but highlight the need for better consideration and analysis of the mitigation-adaptation nexus going forward.

It is important that adaptation and mitigation actions communicated in NDCs 3.0 are developed and implemented in a way that encourages synergies and reduces negative trade-offs. Strategies that yield benefits for both adaptation and mitigation are crucial because they enable countries to simultaneously enhance resilience while reducing emissions in integrated and cost-effective ways. Adaptation action yields significant development co-benefits when it is truly ‘additional’ to development action; it can enhance long-term sustainable development and growth. Sectoral policies and regulations such as coastal zone regulation, water tariffs, tourism, forestry, agriculture, land management, fisheries, infrastructure, and health can be conducive to reducing risks and producing co-benefits. The Multilateral Environmental Agreements and SDGs offer existing indicators and methodologies that could be adopted or modified to assist in measuring and tracking co-benefits across sectors and issues.



ACTIONS

- Identify and prioritize adaptation strategies in the NDC that lead to multiple benefits—environmental, economic, and social. For example, strengthen social protection schemes that enhance resilience, increase economic returns from reduced land degradation, or decrease greenhouse gas emissions through agroecological practices.
- Attempt to quantify these synergistic strategies and analyze cost-benefit for inclusion in the NDC.
- Consider the use of ecosystem-based approaches and nature-based solutions to identify win-win solutions for adaptation and mitigation.



RESOURCES

- **NDC 3.0 Navigator Opportunity:** [Amplifying the mitigation-adaptation nexus](#)
- [Information paper on linkages between adaptation and mitigation](#) (UNFCCC)
- [UNDP–FAO Climate Action Review Tool](#) (FAO and UNDP)

CASE STUDY

Uganda



Photo by Stephan Gladieu / World Bank

Uganda's agriculture, forestry, and other land-use sectors (including livestock) account for 27% of Uganda's total GHG emissions. Under the current business-as-usual scenario, climate projections show total emissions from these sectors will reach 122.2 metric tonnes of carbon dioxide equivalent by 2030. In addition, as part of the country's NAP adaptation priorities in the cattle corridor, the country applied the Climate Action Review tool (CAR) developed by UNDP and FAO through the Scaling up Climate Action in Land Use and Agriculture through NDCs and NAPs programme ([UNDP, 2024](#)). The tool offers a five-step approach for assessing the transformative potential of adaptation actions in the agriculture and land-use sectors. It helps countries take high-level climate priorities outlined in their national climate plans—i.e., NAPs and NDCs—and assess their transformative potential in terms not only of adaptation but also of mitigation co-benefits. It also guides the development of long-lasting and targeted climate solutions using a participatory approach that involves everyone from national and subnational governments to farming communities.

In Uganda, the CAR tool was used to review areas with the highest prevalence of food insecurity and poverty and the greatest exposure to climate risks—and, therefore to determine the areas and people (smallholders and pastoralists) with the greatest need for adaptation investments in agriculture. The country was able to identify the system with the highest transformative potential: the cattle corridor agricultural landscape (with its five mixed farming systems). The corridor is one of the landscapes most vulnerable to climate change; it also serves as a food basket for over 7 million people in rural areas. Uganda's cattle corridor covers about 35% of Uganda's land surface and is populated by a massive network of pastoralist communities. The tool recommended more support for climate adaptation planning at subnational levels, particularly at the district level, and for strengthening financial de-risking measures that catalyze private sector investments in climate-resilient cassava, dairy, banana, and cocoa value-chain development. Notably, the application of the tool in Uganda used participatory methods, meaning that ministries, academia, private sector, and development partners were involved. Uganda is using the CAR tool's recommendations to improve pasture and livestock management, which can provide mitigation co-benefits for delivering on the country's NDC GHG target. Additionally, the outcomes feed into gender-responsive district development plans in six districts and represent a basis for project pipeline development with the private sector.

RECOMMENDATION 4

Prioritize nature-based solutions (NbS), which are cost-effective and synergistic, deliver biodiversity and socioeconomic co-benefits, and link adaptation and mitigation.

Incorporating nature-based solutions (NbS) into NDCs offers a pathway for countries to protect, restore, and sustainably manage ecosystems while bolstering climate adaptation and resilience. The International Union for Conservation of Nature defines NbS as “actions to address societal challenges through the protection, sustainable management and restoration of ecosystems, benefiting both biodiversity and human well-being” ([IUCN, 2020](#)). NbS requires the integration of societal benefits along with environmental benefits. The fundamentals of NbS are derived from established practices such as forest-landscape restoration, integrated water resource management, ecosystem-based adaptation and mitigation, and ecosystem-based disaster risk reduction.

As highlighted in the [Kunming-Montreal Global Biodiversity Framework \(2022\)](#) and reinforced in the GST, healthy ecosystems are crucial for both addressing biodiversity loss and supporting climate resilience. The UAE Framework for Global Climate Resilience emphasizes ecosystem-based adaptation as a critical component for achieving the GGA, focusing on the management, restoration, and protection of diverse ecosystems, including terrestrial, coastal, and marine areas. Aligning NDCs with these strategies not only enhances biodiversity protection but also contributes to sustainable development goals by addressing the interconnected crises of climate change and ecosystem degradation.

There is an urgent need to address the interconnected challenges of climate change, biodiversity loss, and desertification by creating financing mechanisms that support nature-positive and climate-resilient outcomes. Countries can harness opportunities for financing by linking their NDCs with their NBSAPs under the UN Convention on Biological Diversity (CBD). Integrating climate and biodiversity actions more coherently can ensure that national adaptation and mitigation plans work synergistically to address both climate and biodiversity crises. Countries could consider regulations and policies in their NDC that provide an entry point to make NbS integral in territorial, climate, infrastructure, and development planning.



ACTIONS

- To identify NbS- and ecosystem-based adaptation targets and priorities at the national level for inclusion in the NDC, review the ongoing portfolios of ecosystem- and biodiversity-related policies and programs and the country priorities in NBSAPs that have been prepared in line with the CBD and the UN Convention on Desertification.
- Identify quantifiable actions and targets on NbS in the NAP and NDC and use these targets to identify financing solutions from the Multilateral Development Banks or new blended finance mechanisms ([Climate Policy Initiative, 2024](#)).



RESOURCES

- **NDC 3.0 Navigator Opportunity:** [Enhancing nature-based solutions](#)
- [Global standard for nature-based solutions: A user-friendly framework for verification, design and scaling up of NbS](#) (IUCN)

CASE STUDY

Costa Rica



Costa Rica's National Decarbonization Plan and National Adaptation Policy developed robust initiatives that focus on ecosystem-based adaptation, particularly in protecting and restoring its forests, wetlands, and coastal ecosystems ([International Institute for Sustainable Development, 2019](#)). Its updated NDC explicitly links climate action with biodiversity protection, making NbS central to its mitigation and adaptation efforts. It is also aligned with the Kunming-Montreal Global Biodiversity Framework and Costa Rica's NBSAP, which ensures coherence between climate adaptation, biodiversity, and sustainable development. For example, Costa Rica's forest restoration projects aim to sequester carbon while enhancing biodiversity and improving livelihoods through ecotourism and sustainable agriculture. Costa Rica has set quantifiable targets related to NbS in its NAP and NDC. Additionally, Costa Rica's Payments for Environmental Services (PES) program incentivizes landowners to preserve and restore ecosystems, which contributes directly to national climate goals and provides economic benefits to communities. The [National Fund for Forest Financing \(FONAFIFO\)](#) is a pioneering example of a financial instrument that supports NbS by providing incentives for forest conservation and sustainable land use. These programs ensure that both climate and biodiversity goals are financed and implemented in tandem, contributing to the country's long-term resilience and sustainability.



Accelerate implementation by aligning targets with NAPs, strengthening all stages of the adaptation-policy cycle, and adopting a whole-of-society approach.

RECOMMENDATION 5

Align and synergize with NAPs by ensuring NDC adaptation targets and priorities are informed by the results and outputs of NAP implementation.

Countries that have a NAP¹ can build on it as a blueprint for the adaptation component of their NDCs. With 142 of 154 Non-Annex I Parties (92%) engaged in the process of formulating and implementing NAPs (UNFCCC, 2023), it is critical that NDC adaptation priorities and implementation are aligned with these instruments and the planning processes that underpin them. NDC priorities link to NAP strategies and related results and outputs such as financing strategies, sectoral adaptation strategies, MEL frameworks and systems, and gender analyses.

Benefits of greater coordination between preparation of the NAPs and NDCs include:

- **Enhanced policy coherence** around climate strategy across sectors, frameworks, and instruments.
- **A comprehensive, holistic approach to climate action** that promotes adaptation-mitigation synergies and co-benefits and avoids the siloing of adaptation and mitigation planning. Such an approach can lay the foundation for effective implementation through multistakeholder engagement and ownership.
- **Improved efficiency across NAPs and NDCs** by streamlining MEL and reducing the reporting burden of duplicative efforts. Alignment of NAPs and NDCs can also enhance data and information sharing across government ministries and with the private sector, where relevant.
- **Accelerated adaptation action** by communicating NDC priorities and thus providing momentum at the national level for the NAP.
- **Facilitated access to finance** through consistent, coherent articulation of priorities and plans that are well coordinated and strategic in addressing both mitigation and adaptation.²

1. As of January 30, 2025, 60 developing countries have formally submitted NAP documents to the UNFCCC.

2. There are several support mechanisms for NAP formulation and implementation. For example, over 100 developing countries have accessed grants from the Green Climate Fund's (GCF) Readiness Programme, as well as support from the Special Climate Change Fund (SCCF), Least Developed Countries Fund (LDCF), Adaptation Fund, bilateral funders, and other channels. Similar channels of support also exist for NDC preparation through the GCF, GEF, Adaptation Fund, NDC Partnership, and others. Greater coordination between support structures for NDCs and NAPs is desirable and leads to more effective and efficient climate planning at the national level.



ACTIONS

- Leverage the outputs of the NAP process to inform the targets and actions in the NDC and build on the process to strengthen both the NDC and the NAP.



RESOURCES

- **NDC 3.0 Navigator Opportunities:**
 - › [Improving interlinkages between NDCs and NAPs](#)
 - › [Making the connection with adaptation communications](#)
- [Policy brief: Aligning national adaptation plans, nationally determined contributions and adaptation communications](#) (UNFCCC LDC Expert Group)
- [Advancing adaptation action: Enhancing alignment between NAPs and NDCs](#) (NAP Global Network)
- [Enhanced NDCs are making strong links to National Adaptation Plans](#) (NAP Global Network)
- [Maximizing the impacts of targeted gender analyses for the National Adaptation Plan Process](#) (NAP Global Network)
- [Linking NAP processes and NDCs](#) (GIZ)

CASE STUDY

Suriname



Photo by Harvey Lisse / UNDP Suriname

[Suriname's first NDC \(2015\)](#) included several measures that contributed to adaptation and achieved resilience across sectors. Following this, Suriname adopted a [NAP in 2019](#) that aimed at the integration and mainstreaming of adaptation issues into policies, programs, activities, and development planning across multiple sectors and levels. Strategies included in the NAP aimed to achieve adaptation goals outlined in the first NDC by 2029. Their [second NDC in 2020](#) built on the NAP by including long-term resiliency goals, including an updated NAP. Suriname demonstrates a consistent approach to NDC-NAP integration, using processes and outputs from one to inform the next iteration, which ensures each plans' resilience.

RECOMMENDATION 6

Enhance coordination in governance including by strengthening vertical and horizontal coordination between agencies and ministries to facilitate cross-sectoral and cross-scale adaptation actions.

A central goal must be adaptation and resilience to climate change, as well as mitigation, that can be mainstreamed across all policies, especially in climate-sensitive sectors. Coordination across sectors is also essential to ensure synergies and avoid trade-offs or potential maladaptation. In addition to horizontal integration across government ministries, vertical integration across local, subnational, and national levels is also essential for the implementation of solutions that are appropriate and locally relevant. Achieving adaptation goals and objectives, such as food security in face of climate impacts, typically cuts across different agencies, ministries, and levels. The design and operation of policy instruments are dispersed across these ministries and agencies at different levels. National governments must coordinate across governance structures so that information sharing and joint decision-making occurs. This is crucial to formulating effective policy mixes and to ensuring that tools used across different agencies avoid duplication, achieve complementarity, and are appropriately sequenced. Synergies with other environmental outcomes should be sought and reinforced. Coordination across scales and sectors is essential to avoid conflict between policies, ensure policy coherence, and reduce negative spillovers. This can be achieved by appointing a coordinating body or mechanism that operates across ministries to strengthen coordination.



ACTIONS

- Examine policies in key climate-sensitive sectors such as water, agriculture, and infrastructure to ensure synergies and avoid trade-offs across sectors. Similarly, ensure that adaptation actions at the local level can be supported and enabled by suitable national or subnational policies and frameworks.
- Align subnational, national, and regional policies so they do not conflict. Consider the appointment of climate resilience officers in government that work across ministries to strengthen coordination. Consider nonenvironmental policies that can drive positive environmental impacts.
- Engage the private sector early on to achieve more ambitious levels of adaptation by drawing on diverse sources of finance (public and private). Assist the private sector in aligning its investments coherently with environmental outcomes.



RESOURCES

- **NDC 3.0 Navigator Opportunities:**
 - › [Ensuring effective coordination across government](#)
 - › [Enhancing and integrating data across government](#)

CASE STUDIES

Burundi & Bosnia and Herzegovina



Photo by UNDP 2019

Horizontal coordination: In order to improve food security [Burundi's NAP \(2023\)](#) emphasizes horizontal coordination among various ministries and agencies. The plan encourages integrated approaches across the Ministries of Agriculture, Environment, Water, and Rural Development. These ministries work together to implement sustainable agriculture, improve water management, and build resilience against climate-related impacts on food production. Additionally, the plan promotes the synchronization of policies and resource mobilization across sectors to address climate risks and ensure food security.

Vertical coordination: Given the complex governance structure and political divisions comprising separate entities in Bosnia and Herzegovina, the country has established effective coordination between local and national levels for adaptation planning through several key mechanisms ([UNDP, 2020](#)). The NAP process is supported by ministries such as the Ministry of Foreign Trade and Economic Relations and the Ministry of Spatial Planning. The collaboration between these ministries and local government agencies, such as those responsible for agriculture and water management, ensures integration of climate adaptation measures across various sectors. This multilevel approach fosters cooperation and aligns local adaptation actions with national climate goals. Consequently, the financing strategies and action plans in Bosnia and Herzegovina start at the municipal level, with four municipalities already mobilizing financial resources to advance their adaptation actions.

RECOMMENDATION 7

Foster participatory and inclusive approaches that are gender responsive and include Indigenous and Local Knowledge and youth.

Inclusive stakeholder engagement in the NDC development process and implementation enables governments to utilize the capacities and commitments of diverse groups to boost ambition and accelerate NDC implementation. The GST underscores the importance of safeguarding the rights of Indigenous Peoples, marginalized communities, and vulnerable populations while promoting gender equality, the empowerment of women, and intergenerational equity. Engaging these groups allows climate policies to align with existing national development priorities, ensuring that climate action yields social and economic benefits. By involving historically marginalized communities, NDC processes become more equitable, just, and aligned with human rights.

Gender-responsive approaches

Gender-responsive adaptation is essential to addressing impacts of climate change and developing approaches to ensure impacts do not exacerbate existing inequalities for marginalized groups. The GST highlights the need for adaptation strategies to consider gender equality, empowerment of women, and intergenerational equity. In sectors like agriculture, water, and health, existing inequalities can dramatically impact vulnerable groups bearing the brunt of climate-induced challenges. By integrating gender equality into adaptation planning, countries can ensure solutions are effective, inclusive, and equitable while empowering women as agents of change and fostering resilience across communities. Equitable solutions promote broader social justice and enhance adaptation outcomes.

Inclusion of Indigenous and Local Knowledge

Incorporating Indigenous and Local Knowledge (ILK)³ into climate adaptation efforts is crucial; this knowledge offers place-based strategies for managing ecosystems and responding to environmental changes. The GST emphasizes that Indigenous Peoples have long histories of adapting to climatic variability; their knowledge systems can complement scientific approaches. Indigenous practices promote sustainable land and resource management, while also fostering biodiversity and resilience. Integrating Indigenous and Local Knowledge ensures more inclusive, culturally appropriate, and effective adaptation solutions that respect Indigenous rights and benefit broader climate resilience efforts globally.

Engaging youth populations

Young people are key stakeholders in climate adaptation as they will be most affected by long-term climate planning. Guaranteeing the access and engagement of youth and children in adaptation planning will enable strategies that also empower young people with knowledge and the skills necessary for inclusive, sustainable action.

3. Indigenous and Local Knowledge (ILK) refers to a cumulative body of knowledge, practices, and beliefs about the relationship between living beings (including humans) and between living being and their environment. Handed down by cultural transmission, this knowledge has evolved by adaptive processes. ILK is also referred to by terms such as: Indigenous, local, or traditional knowledge; traditional ecological/environmental knowledge (TEK); farmers' or fishers' knowledge; ethnoscience; and Indigenous science. (IPBES, 2019)



ACTIONS

- Strengthen planning and implementation actions to be gender responsive. Ensure that national entities responsible for gender are included in adaptation planning processes to align national development priorities and policies. Include gender-responsive approaches in data collection (i.e., produce gender-disaggregated data) at the national and subnational levels and strengthen project and policy screening for gender inclusivity.
- Include Indigenous Peoples and local communities in the planning and design phases of project and policy formulation and leverage traditional knowledge in the design and development of adaptation solutions. Legitimize and use Indigenous and Local Knowledge to underpin policy frameworks, including data collection and design of MEL systems.
- Seek to engage young people and youth-led organizations across all phases of NDC planning and implementation. Include programming that builds the capacity of youth and children to contribute to adaptation projects and share knowledge within their communities.

CASE STUDY

Kenya



Photo by Irene Saitoti / IISD

Kenya actively involves diverse groups in its climate decision-making processes, including Indigenous Peoples, women, youth, and marginalized communities. Kenya's Climate Change Act (2016) established public participation as a legal requirement in climate policy formulation, ensuring that voices from local communities and vulnerable populations are heard and integrated into climate action plans. Kenya made significant strides in promoting gender equality and empowering women in climate adaptation efforts (see, e.g., [Republic of Kenya, 2022](#)). Its [Climate Change Action Plan \(2018–2022\)](#) and its NDC both highlight the need to incorporate gender considerations, especially in the agriculture, water, and health sectors, where women are disproportionately affected by climate impacts. Kenya has mainstreamed gender into its climate policies by adopting gender-disaggregated data collection and ensuring that women are involved in planning and implementation and are benefiting from climate resilience projects. The Kenya Climate Smart Agriculture Strategy is an example of a program that empowers women by providing them with resources, training, and access to climate-resilient agricultural practices, helping build their adaptive capacity.

CASE STUDY

Fiji



Photo by Fiji Drainage / UNDP Climate

Fijian Indigenous Communities, iTaukei, have long employed traditional practices to manage land and marine resources sustainably. This knowledge is now being integrated into national adaptation plans, especially in areas such as mangrove reforestation, sustainable fisheries, and coastal management. For instance, traditional practices like recognizing [tabu areas](#) (marine protected zones) are being employed to enhance marine biodiversity and protect fish stocks, which aligns with scientific conservation goals. Fiji's NAP and NDCs emphasized the integration of iTaukei traditional resource management methods with modern scientific approaches. Fiji's [Climate Relocation and Displaced Peoples Trust Fund](#) integrates community-led relocation efforts where Indigenous knowledge plays a key role in identifying suitable lands and preserving cultural heritage. Through programs such as the Fiji Locally Managed Marine Area Network (FLMMA), Indigenous Fijian Communities are directly involved in conservation efforts, blending traditional practices with modern marine science to protect ecosystems that are vital for both biodiversity and climate resilience.



RESOURCES

- **NDC 3.0 Navigator Opportunities:**
 - › [Incorporating all voices and ensuring inclusive engagement](#)
 - › [Ensuring empowerment and action for all](#)
- [What is a 'good practice'? A framework to analyse the quality of stakeholder engagement in implementation and follow-up of the 2030 Agenda](#) (UNDP)

RECOMMENDATION 8

Promote a whole-of-society approach in which inclusive stakeholder engagement enables governments to utilize the capacities and contributions of diverse groups to boost ambition and accelerate NDC implementation.

Locally led adaptation

Locally led adaptation, or the shifting of power to local communities to participate in the development of adaptation solutions, can contribute to solutions that are sustainable and effective. Prioritizing locally led adaptation actions means ensuring community engagement and ownership, and providing technical assistance, training, and resources helps local governments and community groups build capacity for the implementation of solutions.

Engage non-state actors

The first Global Stocktake concludes that adaptation and resilience-building actions must be urgently taken both by state and non-state actors, and the role of the latter is increasingly acknowledged as fundamental. While state actors are and will always remain the main force in shaping a climate neutral and resilient world, non-state actors (including coalitions of businesses, investors, insurance companies, subnational governments, NGOs, universities, think tanks, community organizations, among others) have been gradually emerging as key drivers of climate action. They both work directly with communities and with end-of-pipeline organizations to effectuate mitigation and adaptation by championing sector-wide transformations, channeling resources, or fostering synergies and shared learning.

While they engage around global agendas, non-state actors are also strongly committed to locally led climate action: they understand that communities and national and subnational actors are at the forefront of mitigation and adaptation efforts. The voluntary action championed by non-state actors is already contributing visibly to global and local climate action (see the UNFCCC's [Climate High-Level Champions](#)). A stronger incorporation of non-state actors into the NDC process through stakeholder dialogues, public-private partnerships, and joint agendas can thus raise ambition and foster the implementation of national climate goals. Synergy between state and non-state forces can leverage more financial resources, mobilize knowledge and learning, increase the reach to sectors in transition and communities in need, and collectively progress towards a more neutral and resilient world.



ACTIONS

- Formalize stakeholder engagement at every stage of NDC development and implementation through mandated structures and processes or by establishing specific mechanisms to ensure equitable and inclusive input.
- Identify a public-sector body that will lead NDC-related engagements and establish formal coordination mechanisms and responsibilities across stakeholder groups.
- Create specific platforms or forums for engagement and development of locally led adaptation processes, such as forums for youth, women, and Indigenous Peoples and local communities.



RESOURCES

- **NDC 3.0 Navigator Opportunities:**
 - › [Engaging local and regional governments](#)
 - › [Incorporating all of society in adaptation planning](#)
 - › [Leveraging the private sector](#)
- [Non-state and subnational action guide](#) (ICAT)
- [Integrating subnational and non-state actors into M&E systems for adaptation](#) (ICAT)
- [Action for Climate Empowerment \(ACE\) guidelines for accelerating solutions through education, training and public awareness](#) (UNESCO and UNFCCC Secretariat)
- [Whole-of-society approaches to inclusive stakeholder engagement](#) (NDC Partnership)

CASE STUDY

Chile



Photo by Diegograndi / Adobe Stock

Chile has been steadily increasing its ambition on climate adaptation, with a strategy involving both state and non-state actors. Both its long-term climate strategy and its framework law on climate change, enacted in 2022, stress the role of private actors and other non-state stakeholders in promoting climate action in the country. In its ‘transversality’ principle, Chile stresses that “state action in managing climate change must promote the coordinated participation of the Government at the central, regional and local levels, as well as the participation of the private sector, academia and civil society.” The integration of subnational public actors is promoted by a multilevel system of climate planning requiring the drafting of specific action plans on climate change for each of the country’s 16 regional administrations, 300+ municipalities, and 100+ watersheds, with a special focus on adaptation for the latter two. Specific provisions are included both in law and the long-term climate strategy to promote, establish, and strengthen integrated private and public action in the domains of knowledge and technology development and transfer, financing, and risk management. Moreover, developing the capacities of all social actors in these matters and promoting and integrating scientific knowledge in climate planning are emphasized. A certification system is being rolled out both for the reduction of greenhouse gas emissions and for increasing water use efficiency. An MEL system, which is integrated into the existing Climate Risk Atlas and includes a platform to monitor voluntary actions brought forward by non-state actors, is being set up to track and assess progress in adaptation. A preliminary design for a National Technological Institute on Climate Change was created to act as a boundary organization connecting knowledge producers and users and fostering innovation and climate-sensitive development in both the public and private sectors. The [Center for Climate and Resilience Research \(CR\)²](#), leading research and science-policy interface in these matters in the country, has been supporting this effort.

RECOMMENDATION 9

Strengthen the science and knowledge base to ensure that adaptation actions are evidence based, support national research and innovation systems, and facilitate new adaptation solutions based on lessons learned.

By strengthening the science and knowledge base, countries can prioritize adaptation actions that are evidence based, effective, and responsive to evolving climate risks. Investments in national research and innovation systems that generate context-specific data, improve climate modeling, and enhance risk assessments will lead to longer-term resilience outcomes. The engagement of local academic and research institutions with technical and domain expertise can support assessment processes while also building capacity and linkages useful in subsequent processes of solution development, implementation, and learning. Collaboration between governments (national and subnational), research institutions, and the private sector can drive innovation, fostering new solutions tailored to national and local contexts. It is important to develop interoperable and intercomparable data and metrics so that synergies or trade-offs across sectors and scales can be evaluated and so that progress can be documented. International cooperation to enhance transboundary knowledge sharing will also be crucial as climate impacts often cross national borders, making collaborative efforts essential.

Setting up climate knowledge and information services can aid in generating, disseminating, and effectively using climate data and risk information. Developing climate information systems can help protect lives and enable investment decisions across government, business, and communities to secure inclusive economic growth and development outcomes. Assessments can also help establish the rationale for specific climate finance flows and identify the costs of additionality, avoiding maladaptation, and designing adaptation strategies for effectiveness and impact. Moreover, taking stock of existing knowledge bases and leveraging existing assessments can help countries to avoid redundancy and prioritize effective use of resources.

**ACTIONS**

- Engage in-country research institutions and organizations to contribute to NDC development and implementation with their technical expertise and implementation experience—for example, through activities such as the assessment of risks and vulnerabilities and the development and deployment of adaptation technologies and solutions.



RESOURCES

- NDC 3.0 Navigator Opportunity: [Enhancing data availability for informed decision making](#)

CASE STUDY

Bhutan



Photo by Dechen Wangmo/UNDP Bhutan

Bhutan closely aligned its second NDC with its National Adaptation Plan. The [second NDC \(2021\)](#) restates the objectives and priorities on adaptation presented in the first NDC and delegates the detail on adaptation priorities and implementation to the NAP process (see [Bhutan's 2023 National Adaptation Plan](#)). Focusing on the identification of vulnerabilities in order to identify adaptation options has been a strong feature. During the NAP process—and based on scenarios developed by Bhutan's National Center for Hydrology and Meteorology as part of the Third National Communication—Bhutan undertook climate risk and vulnerability assessments in seven sectors that were thought to be especially vulnerable to climate change: water, agriculture and livestock, forests and biodiversity, human settlements and climate-smart cities, health, energy, and disaster risk reduction. The assessments were then combined to create a national mapping exercise. This enabled decision-makers responsible for the country's NAP and NDC to visualize the country's vulnerable hot spots and consequently identify where resources need to be invested. In addition, the assessments directly influenced the identification of priority actions included in the NAP, which in turn contributed to achieving the adaptation objectives identified in the country's second NDC. Finally, the assessments contributed to identifying adaptation, mitigation, and broader development synergies, which is also prioritized in Bhutan's second NDC. For example, energy savings from energy efficiency and renewable energy generation (e.g., from solar roofs) in residential and commercial areas reduce the uncertainty of hydropower and function as both an adaptation and mitigation measure.

RECOMMENDATION 10

Establish robust monitoring, evaluation, and learning (MEL) systems that measure the effectiveness of actions, evaluate what works and what does not work, and enable learning for iterative decision-making.

Robust MEL systems⁴ must be developed to measure the effectiveness of adaptations to reduce vulnerability, evaluate what works and what does not work, and create learning systems that inform iterative policy and investment decision-making. National planning, budgeting, and monitoring systems require more dedicated resources to integrate MEL across efforts and ministries and to avoid duplicate or parallel systems. Engaging statistical offices, academia, civil society, and communities for developing comprehensive MEL systems is necessary to build synergies across existing metrics, indices, and systems. Building transparent databases with a strong data governance system for quality control is equally important. As of 2024, 52% of countries that have submitted a NAP have included MEL frameworks, a 17% increase since the end of 2021 ([NAP Global Network, 2024](#)). However, the operationalization of MEL systems focuses primarily on monitoring and progress reporting, while evaluation and learning remain less developed. Also, while most countries recognize the importance of gender equality and social inclusion, specific indicators within their MEL systems are not universal.

Sound MEL processes can improve understanding of actions underway, support reporting and transparency of results, mobilize finance across possible funders, improve adaptive management, strengthen equity, and increase efficiency. MEL systems must track actions taken by both state and non-state actors. As previously mentioned, non-state actors need to be a key part of the adaptation effort, as they often advance pioneering or ground-level actions that complement or augment what Parties can and will do. More dedicated efforts to track and monitor adaptation spending will be critical for measuring successful implementation. Monitoring systems that allow review of progress enable countries to take stock of their efforts, adjust their strategies, and receive guidance on how to move forward, ensuring that global adaptation goals are met.

4. MEL has several components: Monitoring involves tracking progress of adaptation interventions, collating data on a set of indicators, and tracking outcomes. Evaluation involves assessing the effectiveness of adaptation measures against defined objectives and determining what is working well and what needs improvement/reformulation. Learning generates lessons from efforts that have been undertaken and informs future planning and decision-making, thus enabling the adaptive management of adaptation strategies.



ACTIONS

- Identify key indicators and data sources appropriate for tracking progress in the implementation of adaptation actions and their effectiveness in enhancing resilience and adaptive capacity and reducing vulnerability.
- Use existing national planning, budgeting, and data systems to improve reporting on MEL from climate adaptation and resilience efforts.
- Review what actions have been identified as necessary to reduce vulnerability and enhance resilience and how they were prioritized. Evaluate which measures have been implemented, what outcomes are being monitored, and what metrics have been used. Consider whether the budget is sufficient, and if it is not, what gaps remain. Assess what has been learned from the adaptation actions so far that help refine and improve next steps. Identify databases, learning, and best practices and formalize how learnings are being documented and shared.



RESOURCES

- **NDC 3.0 Navigator Opportunity:** [Setting and achieving targets and actions aligned with the Global Goal on Adaptation](#)
- [Race to Resilience \(RtR\) metrics framework](#) (Race to Resilience, Center for Climate and Resilience Research)
- [MEL Toolkit](#) (NAP Global Network)

CASE STUDY

Papua New Guinea



Photo by Nick, Turner / UNDP Papua New Guinea

In its NDC, Papua New Guinea (PNG) included adaptation targets that addressed key issues within four priority sectors: agriculture, health, transport, and infrastructure. The targets were developed by conducting a series of surveys and workshops on subnational and sector vulnerability and adaptation assessments, data collection, and multicriteria analysis. Targets are measured against indicators specific to the relevant sector. PNG provides an example of how the NDC can be used to communicate high-level priorities. PNG submitted its [NAP](#), which aligns with its [enhanced NDC \(2020\)](#), in 2023.



Strengthen enablers at the global and national levels through enhanced capacity building and by unlocking adaptation finance.

The ten elements above can be undertaken by countries, but for transformational change, they must be supplemented by a global enabling environment. Countries need to be supported in their efforts to create appropriate environments for scaling and accelerating action. These include building needed institutional capacity and providing access to adaptation finance at scale.

RECOMMENDATION 11

Build institutional and human capacity, including in the government, civil society, and private sector to strengthen climate adaptation efforts.

Provide technical assistance, training, and resources to governments and the private sector to enhance their ability to identify viable adaptation options and design implementation strategies. Build their capacity to develop appropriate policy and regulatory frameworks that address climate risks, new technologies, planning horizons, and the coordination of adaptation investments across sectors. These efforts must also account for the trade-offs and incentives necessary for effective climate action.

One of the primary challenges in capacity-building programs is ensuring that the target beneficiaries are actively involved in the design process. Without understanding their needs, limitations, and worldviews, programs risk being poorly tailored and, ultimately, ineffective. For capacity building to be internalized and sustainable, there must be a reciprocal relationship. Beneficiaries must have input into the development and delivery of the training, ensuring that processes are relevant to their specific contexts. Developing communications strategies that are specific to varied stakeholder groups will enable the latter to understand climate information and adaptation processes in their respective contexts and languages.



ACTIONS

- Consider including capacity-building goals and associated targets in the NDC and identifying opportunities for long-term human capacity building—for example, through educational courses at the secondary and tertiary level that address adaptation and resilience.
- Strengthen the role of ministries of finance in driving climate action and NDC development in order to coordinate adaptation investments across sectors ([Grantham Research Institute on Climate Change and the Environment, 2023](#)).



RESOURCES

- NDC 3.0 Navigator Opportunity: [Identifying capacity-building and technical assistance needs](#)

CASE STUDY

Ghana



Photo by Dominic Chavez/World Bank

The Ghana Environmental Protection Agency (EPA) leads the NAP process and has been building the institutional capacity of subnational governments to participate in adaptation planning to advance the goals set out in its NDC and articulated in its NAP process. The NAP Global Network has supported the EPA in its work with the Bekwai Municipal Assembly as they prepare their first-ever adaptation plan for the district. The time horizon aligns with Ghana's NDC, and Bekwai has hired an officer to advance the plan. The approach Bekwai has taken is being replicated in peer districts that also want to develop local plans, and the EPA and NAP Global Network have supported peer learning to enhance district-level decision-makers' capacity to implement adaptation plans. ([NAP Global Network, 2024](#))

RECOMMENDATION 12

Build an enabling environment to unlock adaptation finance at speed and scale by leveraging different sources and ensuring access and delivery including at the local level.

To achieve transformational adaptation, finance must be unlocked at speed and scale. Unlocking finance for adaptation will require addressing barriers and creating enablers at the domestic and international levels. The financial system has the potential to drive transformational change towards climate-resilient countries, communities, businesses, and natural ecosystems. A growing number of insurers, banks, and investors are recognizing the risks of inaction and the emerging opportunities related to adaptation and resilience.

Mobilizing finance

To finance adaptation, a range of sources will need to be leveraged: domestic, international, public, and private. Different financial instruments, including grants, concessional finance, and blended finance, mechanisms for effective delivery, particularly at the local level, are necessary. Financing adaptation efforts will require a whole-of-government and whole-of-society approach, bringing together relevant ministries and subnational governments and involving public, private, and philanthropic actors to take actionable steps in line with a collaborative strategy to scale financing.

The NDCs offer an important opportunity for countries to create appropriate domestic enabling environments, assess investment needs, signal investment priorities, articulate strategies for leveraging, blend different sources of finance, and generally enhance NDC investability.

As countries shift to programmatic approaches in defining their investment priorities, the NDC process, which uses an integrated approach to addressing climate, nature, and development objectives, paves the way for prioritizing multiple benefits. Many private sector companies—in order to mitigate their business and financial risks—are already addressing adaptation issues as part of an ordinary course of business. There is also a growing number of companies investing in adaptation and resilience solutions. The interlinking of countries' priorities, partners' programs, and private sector investments and innovative solutions can help unlock finance for NDC-aligned projects.

Regulatory and policy reform

Barriers to investment limit the ability to mobilize resources for identified needs. Countries can use the NDC as a starting point to map investment barriers against priority investment needs, identify and prioritize options to mitigate the investment barriers, and design and implement policies and regulations for the enabling environments to bring in private-sector climate investment. Measures can include regulatory and policy reforms, fiscal instruments and incentives, and financial de-risking. Developing enabling environments presents a crucial opportunity to enhance the risk-return investment profile of national economies and niche markets for adaptation projects.

Technology innovation

Technology needs assessments, where available, could inform NDCs with regard to the type of support required to achieve full implementation of targets and actions. Identifying and explicitly documenting technology needs can help facilitate the flow of technology from developed to developing countries. In addition, understanding the technology and having confidence in its availability can help countries pursue the highest possible ambition.



ACTIONS

- Strengthen efforts to make adaptation targets and plans more investable through an improved assessment of costs and benefits, and leverage public finance and appropriate financial instruments.
- Develop and harmonize standards, frameworks, and disclosures for physical climate risks, adaptation, and resilience to allow the public and private sectors to manage, plan, and invest in adaptation and resilience.
- Facilitate access to finance by strengthening an enabling environment, including considering measures such as regulatory and policy reforms, fiscal instruments and incentives, and financial de-risking.



RESOURCES

- **NDC 3.0 Navigator Opportunities:**
 - › [Facilitating an enabling environment](#)
 - › [Enhancing understanding of investment needs](#)
 - › [Assessing sources of climate finance](#)
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- [Climate Investment Planning and Mobilization Framework](#) (NDC Partnership, Green Climate Fund)
- [The unavoidable opportunity: Investing in the growing market for climate resilience solutions](#) (Global Adaptation & Resilience Investment Working Group)
- [Rising to the challenge: Success stories and strategies for achieving climate adaptation and resilience](#) (World Bank)

CASE STUDY

Jordan



Photo by Jordan Integrated Landscape Management Initiative (JILMI)

In collaboration with the Government of Jordan and the International Union for the Conservation of Nature (IUCN), and with support from the UN Environment Program, the Jordan Integrated Landscape Management Initiative (JILMI) project will combat the adverse effects of climate change in one of the most water-scarce and drought-prone countries in the world. The JILMI project is designed to address multiple climate impacts, in particular water scarcity in the northern Jordan Valley. It adopts an integrated land and water resources management approach, targeting small-scale farming communities in three sites in the northern Jordan Valley – the Yarmouk, Amman Zarqa, and Jordan Rift Valley Basins. Through a combination of capacity building, climate-resilient agriculture, the restoration of degraded ecosystems, and improved water management, the initiative will boost water security and climate resilience for 750,000 people in the Jordan Valley. Local communities should expect to see improved food security and strengthened governance, all secured through the establishment of a water fund, which has industrial water users downstream pay communities upstream for sustainable land stewardship. The project demonstrates the critical co-benefits of nature restoration, adaptation, and mitigation. For example, a floating solar power system, which aims to both reduce water loss from evaporation while simultaneously producing 1 megawatt of renewable energy, has been established on the King Abdallah Canal. Ecosystem-based adaptation techniques will be used to replenish shallow aquifers to help adapt to water scarcity. As groundwater is replenished, 10 freshwater springs will be rehabilitated and irrigation canals will be refurbished. The water fund will scale up effective landscape management practices and promote water conservation through a payment for ecosystem services model. This model will leverage financial resources from both private and public sector stakeholders, including industry, commercial agriculture, and municipalities, to fund ecosystem restoration interventions in the targeted watersheds. ([UNEP, 2024](#))

CASE STUDY

Chile



Photo by Jose Luis Stephens / Adobe Stock

Chile sought technical assistance from the UN Climate Technology Centre and Network (CTCN) to accelerate the uptake of climate technologies in micro-, small, and medium-sized enterprises (MSMEs) in the agrifood sector. Chile aimed to understand key barriers to the adoption of climate technologies in the sector, analyze agrifood chains to identify key areas for technology introduction, and assess and improve existing policy instruments' effectiveness in promoting climate technologies. This process allowed for the mapping of the agrifood sector and the chains within it and to identify key investment opportunities for the adoption of climate technologies. Chile was able to identify those technologies with the greatest potential for GHG mitigation as well as the most critical climate adaptation benefits for MSMEs, including energy-efficiency measures, drip irrigation, and solar energy for power generation. Ultimately, Chile adopted photovoltaic solar energy solutions and increased energy and water efficiency within the sector—not only through the integration of technical assistance in Chile's agrifood sector but also through public budget lines and the inclusion of information on technological barriers in the project application guidelines and funding procedures. ([UN Climate Change Technology Executive Committee, 2023](#))



Advancing Adaptation in NDCs 3.0

Twelve recommendations for adaptation in NDCs

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