GUIDELINES

The NAP Technical Guidelines

Updated technical guidelines for the process to formulate and implement national adaptation plans

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LDC Expert Group

United Nations
Climate Change

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Preface

Since its establishment in 2001, the Least Developed Countries Expert Group (LEG) has been instrumental in supporting countries' climate adaptation efforts. This support has encompassed the development of guidelines, tools, and methodologies, alongside providing technical guidance, capacity-building, and facilitating knowledge exchange.

After more than 10 years applying the first technical guidelines, and the opportunity to advance adaptation through the UAE framework on global climate resilience, together with evolving scientific knowledge, the LEG was mandated to update the first NAP technical guidelines. This will ensure that countries have effective and up-to-date frameworks to identify adaptation needs and implement strategies that build resilience and reduce risks in line with the global goal on adaptation (GGA) targets.

The NAP process was introduced in 2010 to guide countries in addressing their medium- and long-term adaptation priorities. Building on experience gained since the earlier National Adaptation Programmes of Action in 2001, countries and the broader support community have progressively enhanced their adaptation planning and implementation capacities. This update to the guidelines incorporates the latest scientific findings, including insights from the Intergovernmental Panel on Climate Change's Sixth Assessment Report, and aligns with the Global Goal on Adaptation. The process involved inclusive consultations with Parties, stakeholders, and experts throughout 2025, reflecting shared lessons and diverse perspectives.

The updated guidelines offer strengthened guidance on NAP implementation, propose a clear structure for NAP content, and remain flexible for countries at any stage of their adaptation planning journey—whether beginning, updating, or implementing their NAPs. The LEG is committed to supporting countries and organizations in effectively applying these guidelines to foster sustainable and successful climate adaptation worldwide.

Adao Soares Barbosa

LEG Chair

Abbreviations & Acronyms

AC	Adaptation Committee
AF	Adaptation Fund
AR6	sixth assessment report of the Intergovernmental Panel on Climate Change
BEC	biodiversity, ecosystems, and climate nexus
BTR	biennial transparency report
CBA	cost-benefit analysis
CEA	cost-effectiveness analysis
CIS	climate information services
CMA	Conference of the Parties serving as the meeting of the Parties to the Paris Agreement
COP	Conference of the Parties
CSR	corporate social responsibility
DFI	development finance institutions
DNA	designated national authority
ESG	environmental, social and governance
EW4ALL	Early Warnings for All initiative
EWS	early warning system
FDI	foreign direct investment
FM	financial mechanism of the UNFCCC
FRLD	Fund for responding to Loss and Damage
FWG/ LCIPP	Facilitative Working Group of the Local Communities and Indigenous Peoples Platform
GCF	Green Climate Fund
GEF	Global Environment Facility
GGA	global goal on adaptation
GIS	geographic information system
GST	global stocktake
IPBES	Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services
IPCC	Intergovernmental Panel on Climate Change
LDC	least developed country
LDCF	Least Developed Countries Fund
LEG	Least Developed Countries Expert Group
M&E	monitoring and evaluation
MDB	multilateral development bank
MEL	monitoring, evaluation and learning
MHEWS	multihazard early warning system
NAP	national adaptation plan
NAP Global Network	National Adaptation Plan Global Network
NAP-GSP	National Adaptation Plan Global Support Programme
NAPA	national adaptation programmes of action
NbS	nature-based solutions
NDC	nationally determined contribution
NGO	non-governmental organization
NCQG	new collective quantified goal on climate finance
NLP	natural language processing
NWP	Nairobi work programme on impacts, vulnerability, and adaptation to climate change
PCCB	Paris Committee on Capacity-building
PCL	pre-emptive, contingency, loss
PEG M&E Tool	tool for monitoring and evaluating progress, effectiveness and gaps in relation to the process to formulate and implement national adaptation plans
SBSTA	Subsidiary Body for Scientific and Technological Advice
SBI	Subsidiary Body for Implementation
SCCF	Special Climate Change Fund
SDG	Sustainable Development Goal
SIDS	small island developing State(s)
TEC	Technology Executive Committee
TNA	technology needs assessment
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
WEF	water-energy-food nexus
WGII	Working Group II of the Intergovernmental Panel on Climate Change
WMO	World Meteorological Organization

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1.

Introduction

1.1 Mandate to update the technical guidelines for NAPs

CMA 5 requested the LEG to update the technical guidelines for the NAP process, reflecting the provisions of decision 2/CMA.5 (GGA) as well as the best available science, including the IPCC AR6.

1.2 Background on the process to formulate and implement NAPs

COP 16 established the process to formulate and implement NAPs under the Cancun Adaptation Framework through decision 1/CP.16 to enable the LDC Parties to formulate and implement NAPs with a view to identifying medium- and long-term adaptation needs and developing and implementing strategies and programmes to address those needs; and invited other developing country Parties to employ the modalities formulated to support NAPs.

The objectives of the NAP process are to:

1. **Reduce vulnerability to the impacts of climate change by building adaptive capacity and resilience;**

2. **Facilitate the integration of climate change adaptation, in a coherent manner, into relevant new and existing policies, programmes and activities, in particular development planning processes and strategies, within all relevant sectors and at different levels, as appropriate**[1]

COP 17 requested the LEG to prepare technical guidelines for the NAP process based on the initial guidelines for the formulation of NAPs by LDCs annexed to decision 5/CP.17. The technical guidelines were developed in 2012 and have since been supplemented with resources developed by the LEG and various organizations that are relevant to the process to formulate and implement NAPs, such as tools, methodologies and guidance.

The formulation and implementation of NAPs is guided by the following principles: ensuring a continuous, progressive and iterative process that is not prescriptive; facilitating country-owned, country-driven action; following a gender-sensitive, participatory and transparent approach, taking into consideration vulnerable groups, communities and ecosystems; and being based on and guided by the best available science and traditional and Indigenous knowledge (decision 5/CP.17).

Funding related to the formulation and implementation of NAPs is provided through the GCF, the LDCF, the SCCF and other channels. COP 17 approved the governing instrument of the GCF, in which NAPs are identified among the plans to be funded by the GCF. COP 18 mandated the GEF to provide funding for activities to enable the preparation of NAPs through the LDCF for the LDCs and through the SCCF for developing countries that are not LDCs. COP 21 requested the GCF to expedite support for the LDCs and other developing country Parties for the formulation of NAPs and for the subsequent implementation of policies, projects and programmes identified therein (paragraph 46 of decision 1/CP.21).

Technical support for formulating and implementing NAPs is provided by the LEG, other constituted bodies, United Nations organizations, specialized agencies and other relevant organizations, as well as by bilateral and multilateral agencies, including through support programmes. Together with relevant organizations, the LEG created the NAP technical working group, including four subgroups, to advance its work on technical guidance and support for NAPs and to help coordinate activities across all providers of support.

1 Decision 5/CP.17, para 1.

1.3 Adaptation in the Paris Agreement and the global goal on adaptation

Article 7 of the Paris Agreement established the global goal on adaptation of enhancing adaptive capacity, strengthening resilience and reducing vulnerability to climate change, with a view to contributing to sustainable development and ensuring an adequate adaptation response in the context of the temperature goal referred to in Article 2.

To better understand, conceptualize and ultimately achieve this goal, the countries that were signatories to the Paris Agreement (collectively, the CMA) launched the Glasgow–Sharm el-Sheikh work programme on the global goal on adaptation at 26th United Nations Climate Change Conference in Glasgow in 2021, to be carried out by the Subsidiary Body for Scientific and Technological Advice (SBSTA) and the Subsidiary Body for Implementation (SBI).

At CMA 4 in 2023, Parties initiated the development of a framework for the global goal on adaptation to guide the achievement of the global goal and the review of overall progress in achieving it with a view to reducing the increasing adverse impacts, risks and vulnerabilities associated with climate change, as well as to enhancing adaptation action and support.

At CMA 5 in 2024, Parties adopted the United Arab Emirates Framework for Global Climate Resilience, as part of the United Arab Emirates Consensus. The framework includes a range of thematic and dimensional targets for climate adaptation and resilience, and nature and principles of implementing the framework[1]. CMA 5 also established a two-year United Arab Emirates–Belém work programme on the development of indicators for measuring progress achieved towards the targets outlined in the framework, and Parties provided guidance on the structure and modalities of the work programme at SB 60.

The NAP process is part of the evolution of adaptation under the Convention, together with the process to prepare and implement NAPAs created at COP 7 in 2001, along with the LDCF, the LEG and the LDC work programme. See table 1 for an illustration of the evolution of adaptation under the Convention.

1 Decision 2/CMA.5.

Table 1 Evolution of adaptation under the Convention (see annex 1 for a list of decisions with specific mandates related to NAPs)

TIMELINE	KEY MILESTONES
1996 (COP 2)	National communications
2001 (COP 7)	LDC work programme; NAPAs, LEG, LDCF, SCCF, and Adaptation Fund established
2002	Global launch of NAPA preparation; First LEG meeting
2004	First NAPA submitted in 2004 (Mauritania)
2005 (COP 11)	Nairobi work Programme; guidance to LDCF on implementation of NAPAs
2007 (COP 13)	Bali Action Plan
2009 (COP 15)	Goal of mobilizing jointly USD 100 billion a year by 2020
2010 (COP 16)	Cancun Adaptation Framework: the process to formulate and implement national adaptation plans (NAPs) Adaptation Committee; loss and damage work programme; GCF established
2011 (COP 17)	Initial guidelines for the formulation of NAPs in the LDCs; NAP objectives; financial and technical support; and reporting; mandate to LEG to produce technical guidelines for the NAP process; governing instrument of the GCF and reference to support for NAP formulation and implementation
2012 (COP 18)	Technical guidelines for the NAP process published by the LEG GEF mandated to provide funding for NAPs through LDCF and SCCF
2013 (COP 19)	Establishment of the Warsaw International Mechanism and its Executive Committee First NAP Expo held in Bonn
2014 (COP 20)	LDCs and other developing country Parties invited to submit NAPs and related outputs and outcomes of the process NAP Central launched as a repository for NAPs, and for all information pertinent to NAPs
2015 (COP 21)	Adoption of the global goal on adaptation; Establishment of adaptation communications; Mandate to GCF to expedite support for formulation of NAPs and implementation; GCF establishment of readiness support for NAP formulation; Submission of first NAPs (Burkina Faso, Cameroon); Commencement of annual progress reports in the process to formulate and implement NAPs by the LEG
2016 (COP 22)	First adaptation communication submitted (Argentina)
2018 (COP 24)	Implementation guidelines for the Paris Agreement finalized First five yearly assessment of progress in the process to formulate and implement NAPs Compilation of gaps and needs related to the formulation and implementation of NAPs Facilitative Working Group of the Local Communities and Indigenous Peoples Platform established
2019 (COP 25)	Enhanced Lima work programme on gender and its gender action plan Establishment of the Santiago Network
2021 (COP 26)	Establishment of the Glasgow-Sharm-el-Sheikh work programme on the global goal on adaptation
2022 (COP 27)	Encouragement to double adaptation finance from 2019 levels by 2025
2023 (COP 28)	Conclusion of the first global stock take. Adoption of UAE Framework for Global Climate Resilience, and the thematic and dimensional targets of the Global Goal on Adaptation; Call to Parties have in place NAPs, policies, policies and planning processes by 2025 and to have progressed in implementing them by 2025; LEG to update NAP technical guidelines; Invitation to developed countries to share their NAPs and strategies on NAP Central; Second five yearly assessment of progress in NAPs initiated
2024 (COP 29)	NCQG to support implementation of NDCs, NAPs and adaptation communications; Launch of Baku to Belém Roadmap to 1.3T aiming at scaling up climate finance; Mandate to establish a support programme for implementing NAPs; NAPs identified as one of the channels through which the targets of the Global Goal on Adaptation can be achieved

2.

Experience of the LDCs in formulating and implementing NAPs

2.1 General experiences

The process to formulate and implement NAPs has been monitored on an annual basis through reports of the LEG and the annual progress report on NAPs. Every five years, the COP, through the SBI, conducts a comprehensive review of progress, which usually includes a meeting of Party experts to draw conclusions on progress made. A second such review was due in 2024 and is planned to be completed in 2025. The LDCs and other developing country Parties also share their experience during NAP Expos, side events and workshops on NAPs. Additionally, the LEG conducted a survey of the LDCs and other developing countries in 2024 on how they have used the NAP technical guidelines. These processes and other sources have provided many insights on the experience of the LDCs, including the following:

Foundational work and progress

- The LDCs have been building institutional and technical capacity and laying the groundwork for adaptation through the preparation and implementation of NAPAs since 2001, and their experience in accessing support, conducting assessments, planning and implementation have contributed to their realization. In many cases, there is sufficient groundwork to guide the formulation of the first NAP.

Funding and the roles of the GCF

- Almost all LDCs have relied on funding from the GCF NAP readiness support to advance the NAP process. Although in some cases it has taken countries several years to access this funding, they waited until their funding requests were approved to make tangible progress. In cases where it was not possible to access this funding, a handful of LDCs have used funding from other projects or funding sources to formulate and submit their NAP;

- The LDCs have experienced delays in accessing funding for NAP formulation from the GCF NAP Readiness Support Programme owing to many reasons, from complexity in addressing proposal template requirements or multiple cycles of questions to address before proposal approval, to challenges associated with finding a delivery partner and constraints associated with the delivery partner;

- Most LDCs have not succeeded in getting national direct access entities accredited under the GCF or the AF, resulting in the use of regional or international delivery partners, which in turn face limitations in the number of projects they can support, with some countries being unable to secure their services;

- The nature of project contracts between delivery partners and the Funds have made it difficult to introduce agility into the process and to adapt to changing parameters during the lifetime of GCF NAP readiness projects;

- Currently, producing a NAP does not lead to automatic funding for implementation, which may have led to a lack of motivation to produce a NAP promptly.

Human and technical capacity constraints

- Human capacity in the LDCs is always limited; this applies to capacity for adaptation as well. In some cases, it has been a cause of delays in making progress on NAPs;

- Limited research and observational networks in the LDCs have led to data limitations in support of adaptation. This is a perpetual challenge that can only be addressed with greater investment in research and data collection over time.

Evolving understanding and roles of NAPs

- The understanding of both the NAP and the process supporting its formulation and implementation has evolved over time. There is a call to Parties to formulate their first NAPs by 2025. The underlying process will continue to be iterative based on assessments, further planning, implementation and so on over time. Implementation of the NAP refers to implementation of the policies, projects, and programmes identified in the NAP. Currently, NAPs are treated as a tool that communicates the determined needs and costs of adaptation actions, and used to guide implementation.

Integration and alignment with other reports

- As a national plan, the NAP should include adaptation activities and plans at all relevant levels and scales;
- Adaptation information for a country is included in multiple other reports and documents produced by Parties to the Convention and the Paris Agreement, and there are good source of support materials to guide countries in aligning their activities and reporting on adaptation, notably in relation to alignment between NAPs, adaptation communications, NDCs, national communications and BTRs.

Global goal on adaptation

- While there are multiple entry points to adaptation assessment, planning and implementation, the recently adopted thematic targets of the GGA offer a framework for ensuring that all key thematic areas identified under the Convention and the Paris Agreement are adequately covered.

2.2 What has worked in some LDCs? Lessons learned and good practices

Examples of lessons learned and good practices in formulating and implementing NAPs in the LDCs include the following:

- **Countries that have explored multiple sources of support** for their NAPs have managed to overcome challenges associated with core funding for the formulation of NAPs under the GCF NAP readiness support;
- **Countries that have involved multiple stakeholders** in the country have more ownership of the NAP across government entities, as opposed to a single ministry and/or the focal point working exclusively with the delivery partner in formulating the NAP;
- **Countries that used the diverse information already available** on assessments of hazards, key vulnerabilities and climate risks and options for dealing with them instead of conducting new assessments have been able to formulate a NAP quickly, with additional work being undertaken to broaden future NAP development;
- **Some countries have progressed in one or several sectors and produced sectoral plans,** with work under way on formulating a national NAP;
- **Delinking GCF NAP readiness support from the formulation of the NAP** has helped countries to produce a NAP quickly, as they avoided the delays caused by the process of accessing the readiness support and the subsequent necessary arrangements between the GCF and delivery partners before funds are disbursed;
- **Having a formal mandate ensures a clear understanding of the obligations of different government entities** to deliver adaptation plans, and also ensures an explicit definition of vulnerable groups so that they can be prioritized in the provision of support;
- **Formal integration of climate change adaptation in national planning** (e.g. through budget processes) has ensured progress in mainstreaming climate change;
- **Some countries have put in place institutional structures to ensure effective access to and use of adaptation funding** for formulating and implementing their NAPs such as financing strategies, national climate funds and special programmes for particular groups, hazards or themes. These are in addition to the required designated focal points or authorities to the respective entities of the Financial Mechanism.

2.3 Feedback from the LDCs and other developing countries on updating the technical guidelines

As part of the steps in updating the technical guidelines, the LEG conducted a survey of developing countries in 2024 on their experience with the original technical guidelines published in 2012 and related supplementary materials produced by various organizations since then. Responses from 29 countries showed that 86% of them have used the technical guidelines and found them useful in formulating the NAP. The following are some suggestions for the LEG to consider when updating the technical guidelines:

General suggestions

- Capacity-building and outreach on the application of the guidelines is essential and can include training, including online training, leading to certification;
- Drawing lessons from countries and sharing of their experience is a useful way to learn from others, including both positive and negative experiences with adaptation planning;
- Providing an example for a specific country of an exemplary NAP based on the application of the guidelines would be a helpful learning resource;
- The application of the guidelines should be regularly monitored to help identify gaps and new topics to be addressed;
- The updated guidelines should be simple and succinct;
- Translation into other languages will always be beneficial;
- There are many cross-cutting issues that are important to highlight, and information can be further summarized to show how these issues are addressed across the NAP, including in relation to gender mainstreaming, Indigenous Peoples and local communities, and youth;
- Consideration should be given on how to advance NAPs for countries with special considerations;
- There is a special need for information and lessons learned on transitioning from NAP formulation to implementation;
- There is a need to incorporate more comprehensive guidance on how to assess, address and develop strategies which is a growing concern for many LDCs;
- There are multiple synergies to be considered, such as between climate change and biodiversity, and between processes under the Convention and the Paris Agreement, such as adaptation communications, NDCs, long-term low-emission development strategies and BTRs.
- Although some sectors may be more important than others to include in the NAP, it would be important to include best practices and examples of all seven thematic targets under the global goal on adaptation.

Under assessment

- Methods and tools for analysing current and future climate change scenarios suitable for application in the LDCs and SIDS are needed;
- Topics for greater technical coverage include: clear frameworks for undertaking climate change vulnerability assessment in terms of impacts, assessment of elements at risk, adaptive capacity assessment, determination of vulnerability indices, and development of adaptation options, detailed methodologies on the selection of adaptation options at the national and subnational levels in relation to the resource base, and status of technology in the specific country or location.

Under planning

- Planning should take into account gaps in global adaptation and regional issues;
- It is important to include in the plan the cost of implementing the NAP at the subnational and community levels and information on practical tools for appraising and ranking adaptation actions;
- The updated guidelines could contribute to the levels of consideration of the link between NDCs, national risk and disaster management plans and non-state actor involvement in implementation, as well as other synergies, as appropriate and relevant to national circumstances.

Under implementation

- Implementation strategies and road maps involving appropriate financing instruments;
- Implementation and financing should cover all adaptation priorities and interventions prioritized in the NAP – in other words, the NAP should be implemented as a holistic programme.

Under monitoring and evaluation

- The guidelines should make reference to metrics and indicators under development under the GGA and how the NAPs can contribute to country MEL systems;
- The guidelines should promote synergies with country reporting at the international level.

3.

Guiding principles for adaptation

In decision 5/CP.17, paragraphs 3 and 4, the COP:

- **Paragraph 3:** *Further agrees* that enhanced action on adaptation should be undertaken in accordance with the Convention, should follow a country-driven, gender-sensitive, participatory and fully transparent approach, taking into consideration vulnerable groups, communities and ecosystems, and should be based on and guided by the best available science and, as appropriate, traditional and Indigenous knowledge, and by gender-sensitive approaches, with a view to integrating adaptation into relevant social, economic and environmental policies and actions, where appropriate;

- **Paragraph 4:** *Agrees* that the national adaptation plan process should not be prescriptive, nor result in the duplication of efforts undertaken in-country, but should rather facilitate country-owned, country-driven action.

Additional guiding principles are given in the PA, and in decision 2/CMA.5 as follows:

- **Preamble of PA** – *In pursuit* of the objective of the Convention, and being guided by its principles, including the principle of equity and common but differentiated responsibilities and respective capabilities, in the light of different national circumstances;

- **Preamble of PA** – *Also recognizes* the specific needs and special circumstances of developing country Parties, especially those that are particularly vulnerable to the adverse effects of climate changes, as provided for in the Convention;

- **Preamble of PA** – *Acknowledges* that climate change is a common concern of humankind, Parties should, when taking action to address climate change, respect, promote and consider their respective obligations on human rights, the right to health, the rights of indigenous peoples, local communities, migrants, children, persons with disabilities and people in vulnerable situations and the right to development, as well as gender equality, empowerment of women and intergenerational equity;

- **Article 7, paragraph 5:** *Parties acknowledge* that adaptation action should follow a country-driven, gender-responsive, participatory and fully transparent approach, taking into consideration vulnerable groups, communities and ecosystems, and should be based on and guided by the best available science and, as appropriate, traditional knowledge, knowledge of indigenous peoples and local knowledge systems, with a view to integrating adaptation into relevant socioeconomic and environmental policies and actions, where appropriate;

- **2/CMA.5, paragraph 13:** *Encourages* Parties, when implementing the United Arab Emirates Framework for Global Climate Resilience and their adaptation efforts, when integrating adaptation into relevant socioeconomic and environmental policies and actions and in pursuing the targets referred to in paragraphs 9–10 of that decision, to take into account, where possible, country-driven, gender-responsive, participatory and fully transparent approaches, as well as human rights approaches, and to ensure intergenerational equity and social justice, taking into consideration vulnerable ecosystems, groups and communities and including children, youth and persons with disabilities;

- **2/CMA.5, paragraph 14:** *Emphasizes* that adaptation action should be continuous, iterative and progressive and be based on and guided by the best available science, including through use of science-based indicators, metrics and targets, as appropriate, traditional knowledge, Indigenous Peoples' knowledge, local knowledge systems, ecosystem-based adaptation, nature-based solutions, locally led and community-based adaptation, disaster risk reduction, intersectional approaches, private sector engagement, maladaptation avoidance, recognition of adaptation co-benefits and sustainable development.

Key resources to guide developing countries and implementing partners in strengthening and accounting for these considerations are listed in table 2.

Table 2 Resources developed to support consideration of the guiding principles in the NAP process

CONSTITUTED BODY / PARTNER	RESOURCE	GUIDING PRINCIPLE OF FOCUS
LEG and AC (with the NAP Global Network)	Toolkit for a Gender-Responsive Process to Formulate and Implement National Adaptation Plans (NAPs)[1]	Designed to support country efforts to pursue a gender-responsive NAP process
LEG	Considerations regarding vulnerable groups, communities and ecosystems in the context of the national adaptation plans[2]	Provides technical guidance and advice to the LDCs on how to strengthen considerations regarding vulnerable groups, communities and ecosystems in climate change adaptation.
LEG	Strengthening gender considerations in adaptation planning and implementation in the least developed countries[3]	Provides guidance on strengthening gender consideration in adaptation planning and implementation in the LDCs.
PCCB	Toolkit to assess capacity-building gaps and needs to implement the Paris Agreement[4]	Developed to serve as a resource for developing countries and their implementing partners in assessing relevant capacity needs and determining gaps in implementing the Paris Agreement.
LEG and AC	Joint workshops, technical briefs and synthesis reports[5]	The LEG and AC jointly organize workshops on gender mainstreaming in NAP implementation and inclusive approaches for the LDCs and vulnerable countries. Technical briefs and synthesis reports are often prepared as a result of these workshops.

1 https://unfccc.int/sites/default/files/resource/NAP_Gender_Toolkit.pdf

2 https://unfccc.int/sites/default/files/resource/Considerations%20regarding%20vulnerable.pdf

3 https://unfccc.int/files/adaptation/application/pdf/50301_05_unfccc_gender.pdf

4 https://unfccc.int/process-and-meetings/bodies/constituted-bodies/paris-committee-on-capacity-building-pccb/pccb-network-paris-committee-on-capacity-building-pccb/activities-pccb-network/pccb-toolkit-to-assess-capacity-gaps-and-needs-to-implement-the-paris-agreement

5 https://unfccc.int/LEG#reports

4.

Managing climate risk for adaptation benefits

Managing climate risk and managing for adaptation benefits are two complementary but strategically different approaches to adaptation. These two conceptual approaches have emerged in climate adaptation planning: managing climate risk and managing for adaptation benefits. While both are essential, they emphasize different goals, metrics, and outcomes.

Managing climate risk focuses on identifying, reducing, and responding to specific climate hazards and associated vulnerabilities. It asks: *What climate threats pose the greatest harm, who is vulnerable, and how can we reduce their impacts?*

Managing for adaptation benefits focuses on the developmental and co-benefits of resilience-building actions, particularly for vulnerable populations. It asks: *How can we use adaptation to enhance systems, wellbeing, and opportunity in a changing climate, especially for the most vulnerable?*

An in-depth comparison and reflection to help clarify their roles in policy, planning, and financing is given in table 3.

Table 3 Managing climate risk for adaptation benefits

DIMENSION	MANAGING CLIMATE RISK	MANAGING FOR ADAPTATION BENEFITS
Primary focus	Reducing loss and damage from climate hazards	Enhancing positive outcomes and resilience dividends
Core question	How do we prevent or minimize harm from climate threats?	How do we improve wellbeing, systems, and opportunities in a changing climate?
Time orientation	Often short- to medium-term (focused on known risks)	Medium- to long-term (future-oriented and reflecting pathways that ensure a safe operating range)
Examples of specific actions	- Flood-proofing infrastructure - Drought insurance for farmers - Early warning systems for cyclones	- Regenerative agriculture to increase productivity and enhance soil health - Urban greening for cooling, aesthetics, and biodiversity - Ecosystem restoration including wetlands for flood buffering and livelihoods
Metrics	Avoided losses, reduced exposure, faster recovery	Enhanced assets, increased productivity, improved health and equity
Mental model	**Avoid danger** (defensive stance)	**Unlock opportunity** (developmental stance)
Typical actors	Disaster risk managers, emergency services, insurers, relevant ministries	Development planners, ministries of health, finance, agriculture, environment, and other relevant ministries
Financial framing	Cost of inaction, cost-effectiveness of risk reduction	Return on finance/support provided, co-benefits, resilience dividends
Role of vulnerability	Central to risk analysis - determines who is most affected	Central to benefit targeting - ensures inclusion and equitable outcomes

The framing shapes action. If adaptation is framed only as risk reduction, it becomes a cost to bear. But when framed in terms of benefits - health, equity, food security, sustainable jobs - it becomes an investment with returns. Planning and prioritization also differ. Risk-focused strategies tend to prioritize hazard-prone hotspots and quick-win protective measures. Benefit-oriented approaches focus on transformative change, especially in development sectors (education, energy, finance).

Effective adaptation planning requires integrating both lenses. For example: flood protection systems (risk reduction) can double as community parks (benefits: recreation, cooling, aesthetics) as in the design of Chulalongkorn University Centenary Park in Bangkok. Another example is in the case of drought early warning (risk), which can be linked with solar irrigation and market access (benefits: productivity, income). Both approaches must be rooted in a clear understanding of vulnerability, which shapes the severity of risk and the accessibility of benefits.

In the NAPs, the risk lens helps prioritize vulnerable populations and high-exposure geographies; while the benefit lens aligns adaptation with national development goals (e.g., food security, sustainable jobs), ensuring that vulnerable groups gain from interventions. Jointly, they help governments identify "no-regret" options - those that reduce risks and improve lives regardless of future climate scenarios.

Box 1 below provides a non-exhaustive list of specific benefits and outcomes of adaptation activities and how these inform adaptation functions.

Box 1.

Why adapt?

Below is a non-exhaustive list of benefits and outcomes of adapting to climate change, listed in no particular order. Each one points to a set of interventions that address a particular adaptation need or function, and results in quantifiable benefits.

- **Safeguarding lives and human well-being:** Protects human life and well-being.
  - The Nigeria Erosion and Watershed Management Project (NEWMAP) restored gully sites and built nearly 60 catchments, improving the well-being and safety of over 12 million people across 23 states in Nigeria.

- **Safeguarding livelihoods and heritage:** Protects livelihoods, biodiversity, ecosystems and cultural heritage from permanent loss or degradation.
  - Nepal's preservation of Kathmandu's historical sites saved over USD 50 million annually in income from tourism.

- **Mitigating extreme climate impacts:** Shields populations from severe climate events, such as heatwaves, floods, droughts and storms.
  - The Republic of Korea's heatwave adaptation policies through smart cooling strategies prevented USD 1 billion in healthcare costs and heat-related productivity losses.
  - The Bee Branch Creek Restoration project in the United States has been proven to manage flash flooding from the Mississippi River, protecting over 1,100 properties and preventing USD 11.6 million in damages.

- **Avoiding disaster recovery costs:** Lowers the economic burden of rebuilding after climate-related disasters by investing in proactive adaptation measures.
  - In Japan each USD 1 invested in early warning system for typhoons saved USD 7 in post-disaster relief and infrastructure repairs.

- **Strengthening early warning and preparedness:** Enhances forecasting systems, anticipatory financing and rapid response capabilities to mitigate climate hazards.
  - Mozambique's early warning system issued warnings for at risk communities ahead of Cyclone Freddy, resulting in significantly lower economic damages compared to the previous Cyclone Idai, with an estimated 83% reduction.
  - India's cyclone early warning system saved over 1,000 lives and prevented USD 200 million in economic losses during Cyclone Phailin in 2013.

- **Enhancing capacity to cope with new/future climate impacts:** Strengthens the ability of communities, ecosystems and economies to withstand and recover from climate-related impacts.
  - In Viet Nam's coastal mangrove restoration, USD 1 million investment in mangroves saved USD 7.3 million annually in avoided flood damage.

- **Promoting social equity:** Targets support for the most vulnerable (e.g., women, children, the poor) and encourages inclusive decision-making and locally led solutions.
  - Introduction of eco-stoves in indigenous communities reduced reliance on fuelwood, empowering indigenous women in Brazil and improving their health.

- **Promoting investment by managing risk:** Manages climate risks to effectively lower their risk ratings, thereby making them more attractive to major investors and lenders.
  - Chile issued a USD 1.4 billion green bond, attracting investors and funding projects in agriculture and biodiversity protection.
  - Indonesia's green bonds and climate risk reduction: its USD 1.25 billion green sukuk bond attracted investors owing to strong climate risk management.

- **Managing climate risks through insurance and transfers:** Helps protect production, infrastructure and property by distributing risk across financial mechanisms.
  - India's crop insurance scheme helped farmers to save up to 25% of income losses during drought years.
  - Sovereign insurance schemes through regional risk facilities in Africa, the Caribbean and the Pacific have delivered adaptation benefits by pooling risk across countries to reduce premium costs (often by up to ~50 %), enabling rapid parametric payouts (within ~14 days) that provide immediate liquidity for post-disaster relief and infrastructure repair, supporting resilience-building and smoothing budgets for recovery.

- **Driving economic transformation:** Fosters new industries and productive capacities that align with nationally determined climate-resilient development.
  - China's green infrastructure investment created 1.5 million jobs and generated USD 100 billion in economic activity through adaptation-linked investments in green cities.
  - Ethiopia's "Green Legacy Initiative" has already planted 25 billion seedlings throughout the nation, contributing to environmental protection, restoration of degraded natural resources and the creation of more than 767,000 jobs, mostly for women and youth.

- **Creating growth opportunities:** Generates economic benefits by fostering innovation and investment in climate-adaptive sectors.
  - Viet Nam's shift to climate-smart agriculture improved export revenue by USD 3 billion annually.

- **Integrating climate resilience into development planning:** Ensures that infrastructure, urban planning and policies are designed to withstand future climate risks.
  - Japan's earthquake and flood-resistant infrastructure which promotes investing 5% more in climate-proofing buildings extended asset lifespan by 20 years or more and saved 40% in reconstruction costs.

- **Restoring and protecting ecosystems:** Supports rehabilitation and conservation efforts to maintain critical ecosystem services and biodiversity.
  - Pakistan's Ten Billion Tree Tsunami project is expected to generate USD 120 million in ecosystem benefits annually.
  - Bolivia's conservation initiative (Fundación Natura) has succeeded in conserving over 1.48 million acres across 80 municipalities in Bolivia with the participation of 24,000 farmers.

- **Enhancing policy effectiveness:** Strengthens sustainable resource management and governance to mitigate climate risks.
  - Thailand's water management policies: better irrigation policies reduced drought-related GDP losses by USD 500 million per year.

- **Reducing climate-driven migration:** Helps minimize forced migration from vulnerable regions by improving local resilience and economic stability.
  - Bangladesh's adaptation in coastal villages: community-led adaptation (embankments, climate-smart farming) reduced climate-induced migration by 30%.
  - Panama's planned relocation of the Guna people: The Guna community on Gardi Sugdub Island is relocating to the mainland due to increased flooding from sea-level rise. This planned move, supported by the government, aims to provide safer living conditions and prevent forced displacement.

- **Preventing internal displacement:** Reduces both forced and planned relocations within countries, cutting associated costs and social disruption.
  - Brazil's Adaptive Social Protection system: (the Bolsa Família program) accelerated cash transfers to support families affected by climate-induced floods in 2024, reducing displacement. The government initiated a USD 1,000 reconstruction aid per family targeting those displaced by the heavy rains.

Shifting to digital payments has also been key to increasing resilience to shocks.
  - China's Sponge Cities programme (urban flood resilience) : flood adaptation measures in 30 cities prevented the displacement of 1 million people, saving billions in resettlement costs.

- **Indirect private sector benefits:** Creates indirect benefits for businesses and stakeholders based on Government-led disaster risk reduction and adaptation initiatives.
  - Malaysia's climate-resilient business incentives: Government incentives for businesses investing in resilience led to USD 2 billion in private sector adaptation funding.
  - AI-driven irrigation in Latin America: Kilimo, a company founded in 2014, provides farmers from Argentina, Brazil, Chile, Guatemala, Mexico, Peru and Uruguay with data-based tools to optimize their irrigation and water management, saving 72 million cubic meters in two years. This technology has attracted investment from the private sector.

- **Indirect benefits from transboundary adaptation efforts:** Countries can benefit from climate-resilience investments made in neighbouring regions, reducing shared risks.
  - Mekong River Basin regional cooperation: joint adaptation efforts among Cambodia, the Lao People's Democratic Republic and Viet Nam reduced regional flood risks by 30%, avoiding USD 2 billion in damage.

- **Leveraging 'virtual water' strategies:** Countries can offset local water scarcity by importing water-intensive products or engaging in agricultural production abroad.
  - The United Arab Emirates' foreign agricultural investments (in Asia and Africa) saved billions of cubic metres of water, reducing food import costs.

The above examples can be used to inform adaptation functions. Adaptation functions are the core roles, services, or operational capabilities that must be delivered or enabled to reduce climate risks, build resilience, and achieve climate-resilient development. They represent what adaptation does – across systems, actors, and scales – to buffer shocks, support transitions, or secure thresholds of well-being and system performance. Rather than listing only activities (e.g., "build irrigation"), adaptation functions describe the purpose and systemic contribution of those activities (e.g., "enable seasonal water buffering to reduce climate-driven food insecurity").

Adaptation functions help:

- Define implementation logic beyond sector-specific actions;
- Coordinate actors around shared delivery roles;
- Reframe projects into systems-level outcomes
- Support MEL by focusing on what must change or be maintained.

Section II

- Key design considerations
- Recommended contents of the NAP
- Modules and steps of the updated technical guidelines

5.

Key design considerations for the updated NAP technical guidelines

5.1 General

The following considerations were taken into account in updating the NAP technical guidelines:

1. **The NAP as the overall adaptation strategy and policy anchor for a whole-of-society approach**

The NAP should serve as the primary national strategy and policy for adaptation, risk management and climate resilience. It defines the vision, goals and objectives for the country and provides a national mandate to guide and coordinate all adaptation efforts across the whole of government. It promotes national leadership and governance of adaptation efforts at all levels, serving as a convenor of multiple and diverse stakeholders at the national level to co-produce solutions and interventions that make sense from a multisectoral perspective (economic, environmental, health and social well-being), and as the main interface with regional and international climate mechanisms.

The NAP could serve as the national programme that aggregates and integrates various subnational, sectoral and local strategies and plans as appropriate, forming a holistic picture of adaptation efforts for the country. It promotes coherence with national development priorities and a common shared vision for adaptation, building on robust stakeholder engagement and taking into consideration guiding principles of adaptation.

2. **The NAP and the global goal on adaptation**

The thematic and dimensional targets of the GGA provide a framing for adaptation approaches and actions at the national level in addition to nationally determined priorities and circumstances. The NAP serves as one of the important channels via which the targets of the GGA can be achieved. Activities contributing to meeting these targets are carried out by different sectors (ministries), and these are distributed among various entities/sectors/elements during assessment, planning and implementation. Meeting the GGA and its targets supports a shift towards implementation without long delays in new assessments and ensures adaptation contributes to broader agendas such as the SDGs, the Sendai Framework for Disaster Risk Reduction (2015–2030), the Kunming–Montreal Global Biodiversity Framework, the Land Degradation Neutrality initiative, the New Urban Agenda framework and other international, regional and national agendas where relevant.

3. **Applying best available science including the IPCC AR6**

The NAP draws on the latest science from the IPCC AR6 on how adaptation is framed in terms of vulnerability, risk and resilience. A combination of risk management with resilience building focused on benefits of adaptation leads to better plans that cover the short,medium and long-term approaches to adaptation. The knowledge synthesized in the IPCC AR6 provides a broad understanding of climate hazards and associated impacts and is a useful learning tool for dealing with particular climate risks, valuable for communities facing new climate challenges. It also draws on Indigenous and traditional knowledge to support implementation decisions during its implementation.

4. **The NAP recognizes the complexity of adaptation**

The NAP links to the multiple scales and levels of

adaptation assessment, planning and action from the global to regional, subnational to local, representing the multi-scalar nature of risk across boundaries. Many systems are interlinked, face multiple risks, and actions often involve trade-offs. Stakeholders in the country choose entry points to the NAP.

5. The NAP prioritizes results

By linking key risks to solutions that are then implemented, the NAP works on producing specific results and benefits, besides managing climate risk, as way to build resilience for the medium and long-term. Choice of essential systems to address in the NAP is based on risk reduction and adaptation benefits, as a contribution towards sustainable development in terms of the economy, environment, and social and human well-being.

6. The NAP process builds capacity over time

The process underpinning the formulation and implementation of NAPs works on the gradual and persistent development of capacity in all key areas from data, assessment, planning and implementation and monitoring and evaluation, such as the building of readiness to engage in more and more complex financing modalities in projects over time, such as those seen in GCF projects. See figure 1.

7. The NAP and the spectrum of response, including full climate risk management

The NAP recognizes the continuum of response to climate change impacts, from pre-emptive and contingency arrangements, anticipatory actions when impacts are imminent and actions to address climate change impacts, including recovery, rebuilding, rehabilitation etc., as depicted in figure 2. These are addressed under their respective workstreams under the Convention and Paris Agreement, and the NAP promotes coherence and complementarities between the respective actions and modalities of support.

Managing climate risk, optimizing across the spectrum of response ensures a comprehensive approach to risk management at the country level, where nothing is left to chance. Resources would be allocated to intolerable losses based on cost-effectiveness analysis, while for tolerable risks, cost-benefit analysis would be used, iteratively, to ensure the whole spectrum of risk is covered, including use of insurance and pre-arranged finance to cover those risks that cannot be addressed directly due to costs (see figure 3). This may offer insight into improved strategic activities that would avoid much higher costs of recovery later.

8. The NAP builds on best available information

As a learning by doing and progressive process, the formulation and implementation of NAPs builds on best available information at any given moment in time, informed by experience and lessons from other regions and as synthesized in reports such as those by the IPCC, IPBES and similar global processes. As such, the NAP should not await new assessments, rather, the NAP process should support continuing data collection and assessment to improve future NAPs.

9. The NAP implements the adaptation cycle in parallel with a focus on vulnerable groups, communities and ecosystems

Given countries are at different stages of addressing different vulnerabilities and risks, and in many cases reacting and responding to recent impacts, the NAP contains a mix of actions spanning the spectrum of response and the adaptation cycle (decision 2/CMA.5, paragraph 10), and in some cases, would include scaling up of activities underway. Given limited resources, activities would prioritize needs of vulnerable groups, communities and ecosystems, and those activities that ensure sustainable development pathways. In other words, the elements of the adaptation cycle would not be approached sequentially, rather, activities would be addressed in in parallel.

Figure 1 Gradual progression in capacity to engage in and catalyse increasingly complex financing instruments and modalities

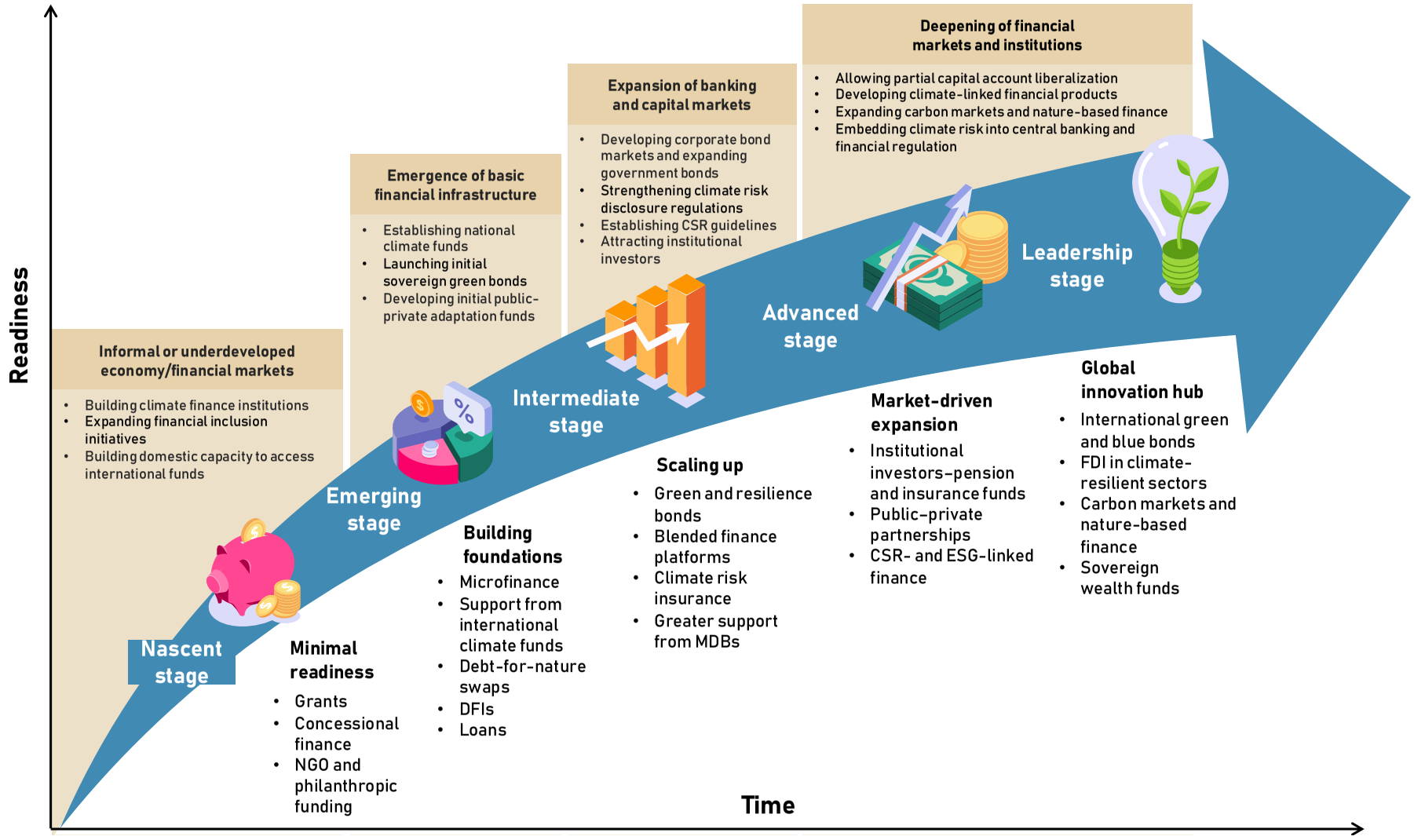


Figure 2 Framing of the spectrum of actions in responding to climate impacts (for time-bound impacts)

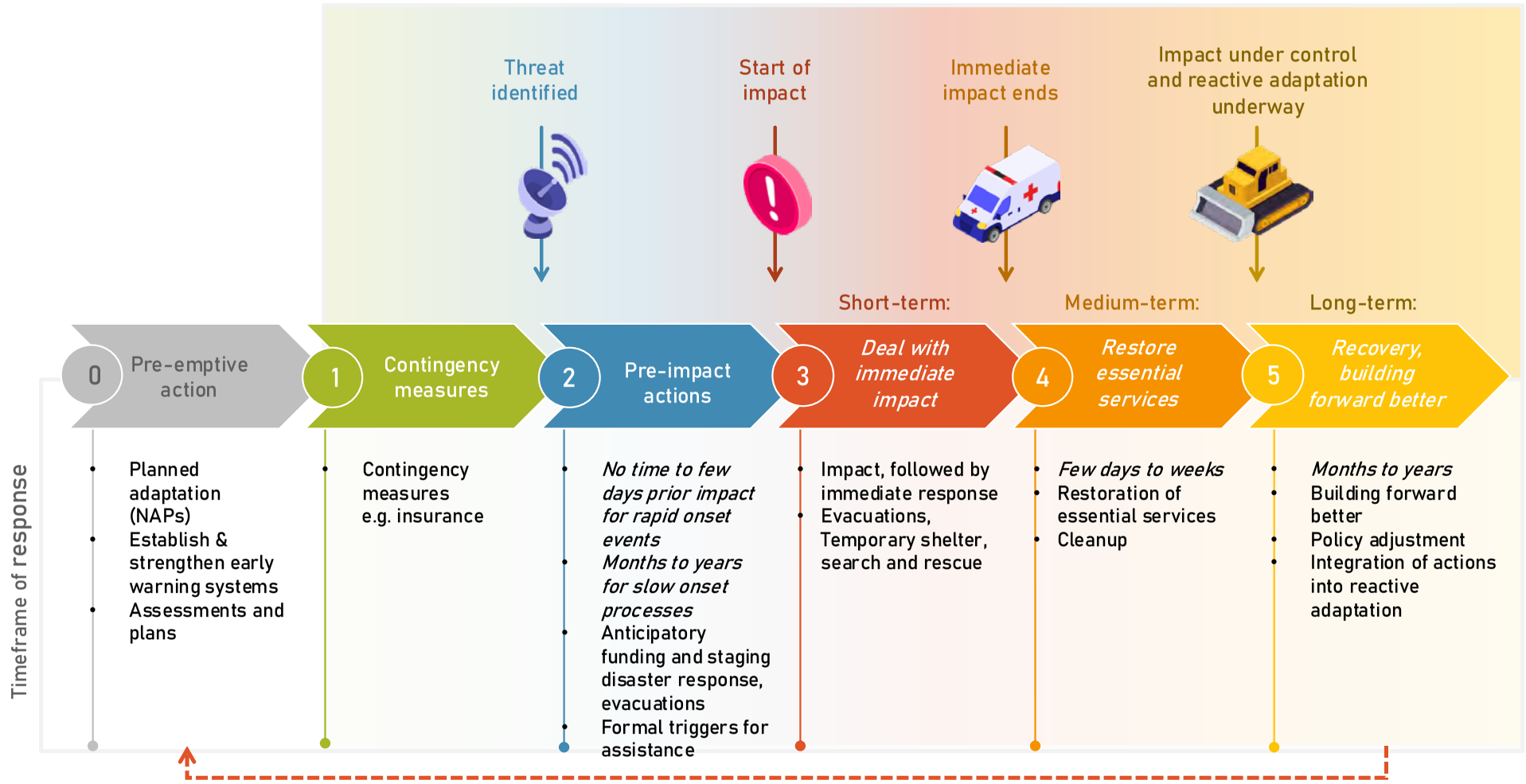
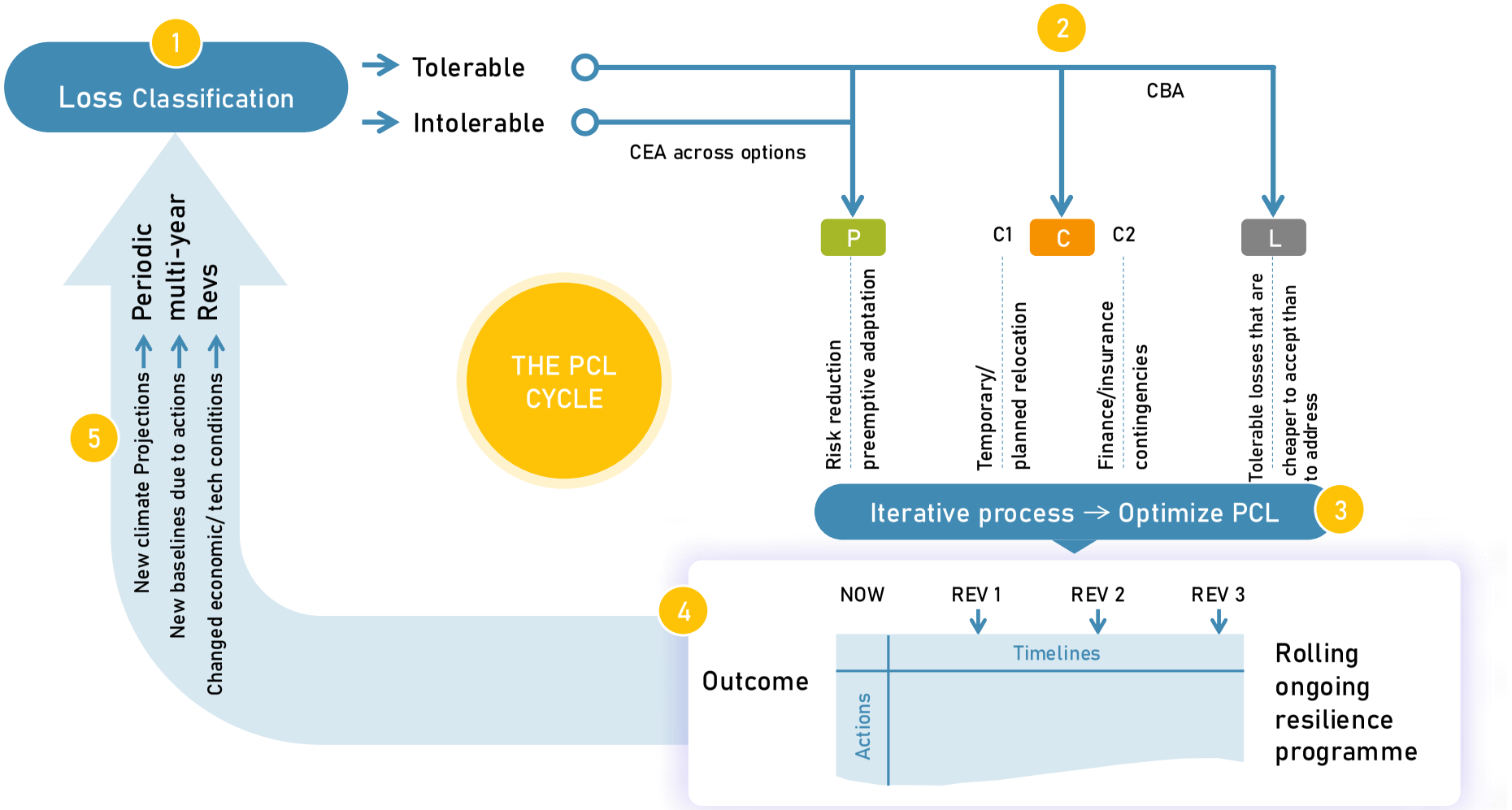


Figure 3 Methods in optimizing the response to climate impacts along the pre-emptive - contingency -loss cycle[1]



1 Source: Nassef, Y. 2020. The PCL Framework: A strategic approach to comprehensive risk management in response to climate change impacts. Available at https://arxiv.org/pdf/2004.06144.

5.2 Use of the IPCC WGII AR6 results: the fusion of vulnerability, risk and resilience

The contribution of WGII to the IPCC AR6 presents a comprehensive framework for understanding and assessing climate risk, moving beyond traditional concepts of vulnerability. It considers risk in the context of climate change impacts as arising from the dynamic interplay between climate-related hazards, the exposure of affected human or ecological systems, and their vulnerability. Additionally, it considers risk in the context of climate responses, recognizing that risks may also emerge when responses fail to achieve their intended objectives or produce unintended trade-offs or adverse side effects. The following are practical considerations in applying the AR6:

- Adaptation is complex, over space, time, policy and many other facets. It therefore requires efforts to recognize the interlinkages and interdependencies between these facets, although adaptation actions will focus on a small window/section of that complexity.

- Adaptation assessment, planning and implementation have multiple entry points, and if done properly and comprehensively the overall end result should be similar.

- Adaptation spans biophysical and human systems and, as such, stakeholder participation in defining criteria for choices made is critical in satisfying their perception of successful adaptation.

- Adaptation is interlinked with development, and its goals are intermingled with those of other agendas. Since there is no optimal pathway to achieve all these goals, stakeholder participation is key in defining success criteria.

- Different actors have evolved their own frameworks for adaptation to govern all stages of the adaptation cycle, leading to silos and a lack of coherence.

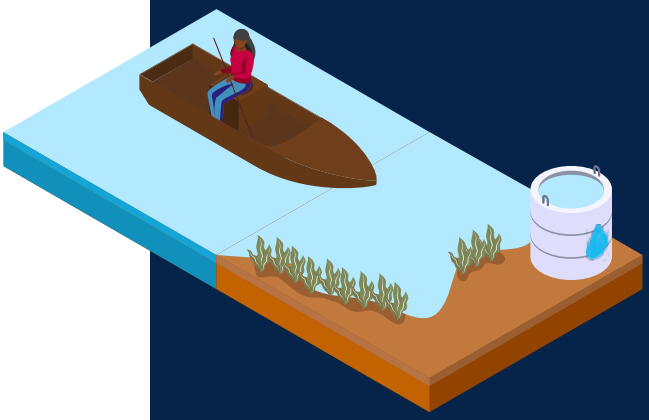
- Adaptation is defined and approached from overlapping and complementary entry points, spanning concepts including exposure/hazards, vulnerability, risk and resilience. The entry point used depends on the context.

- The IPCC provides a scientific reference of how to frame and summarize adaptation, and the AR6 framing of risk and associated approaches to synthesizing risk (key and representative risks and reasons for concern) should provide the basis for a common/shared approach going forward.

5.3 Unpacking the targets of the global goal on adaptation in paragraphs 9 and 10 of decision 2/CMA.5 in new NAPs

Figure 4 A summary of the key features of the UAE Framework for Global Climate Resilience

The following are main components of the seven GGA thematic targets (based on paragraph 9 and 10 of decision 2/CMA.5). These component sub-targets can be viewed as areas that can be assessed separately or as parts of a higher level of aggregation in the context of national planning and development. For example, the sub-targets under GGA can be part of an analysis of food security or treated separately.



1. **Climate-resilient water security for all**

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 (paragraph 9a of decision 2/CMA.5);

- Reduction in climate-induced **water scarcity**
- Enhanced climate resilience to **water-related hazards**
- Climate-resilient **water supply** for all
- Climate-resilient **sanitation** for all
- Access to **safe potable water** for all
- **Affordable potable water** for all

2. Sustainable food and nutrition security for all

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 (paragraph 9b of decision 2/CMA.5);

- Climate-resilient **food and agricultural production**
- Climate-resilient **food supply**
- Climate-resilient **distribution of food**
- Sustainable and **regenerative food and agricultural production**
- Equitable access to **adequate food and nutrition** for all

3. Climate-resilient health systems and services

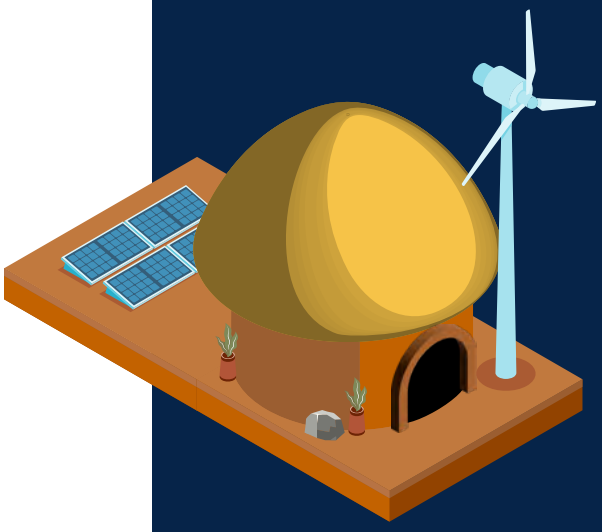
Attaining resilience against climate change related health impacts, promoting climate-resilient health services, and significantly reducing climate-related morbidity and mortality, particularly in the most vulnerable communities (paragraph 9c of decision 2/CMA.5);

- Resilience against **climate change related health impacts** *(particularly in the most vulnerable communities)*
- Climate-resilient health services *(particularly in the most vulnerable communities)*
- Reducing climate-related **morbidity and mortality** *(particularly in the most vulnerable communities)*

4. Healthy ecosystems and biodiversity

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 (paragraph 9d of decision 2/CMA.5);

- Reduced climate **impacts on ecosystems** *(through their management, enhancement, restoration and conservation and the protection)*
- Reduced climate **impacts on biodiversity** *(through their management, enhancement, restoration and conservation and the protection)*
- Accelerated use of **ecosystem-based adaptation** and **nature-based solutions** *(in terrestrial, inland water, mountain, marine and coastal ecosystems)*



5. Climate-resilient infrastructure and human settlements for all

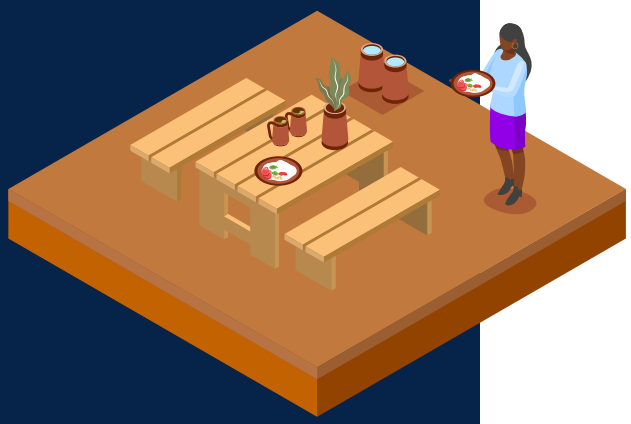
Increasing the resilience of infrastructure and human settlements to climate change impacts to ensure basic and continuous essential services for all, and minimizing climate-related impacts on infrastructure and human settlements (paragraph 9e of decision 2/CMA.5);

- **Climate-resilient infrastructure** to climate change impacts to ensure basic and continuous essential services for all
- **Resilient human settlements** to climate change impacts to ensure basic and continuous essential services for all
- Minimized **climate-related impacts** on infrastructure and human settlements

6. **Climate-proof poverty reduction and livelihoods and climate-social protection measures for all**

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 (paragraph 9f of decision 2/CMA.5);

- Reduced adverse effects of climate change on p**overty eradication and livelihoods**
- Use of **adaptive social protection measures** for all



7. **Climate-proof cultural heritage**

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 (paragraph 9g of decision 2/CMA.5);

- Protecting cultural heritage from the impacts of climate-related risks by **preserving cultural practices** *(guided by traditional knowledge, Indigenous Peoples' knowledge and local knowledge systems)*
- Protecting cultural heritage from the impacts of climate-related risks by **preserving heritage sites** *(guided by traditional knowledge, Indigenous Peoples' knowledge and local knowledge systems)*
- Protecting cultural heritage from the impacts of climate-related risks by designing **climate-resilient infrastructure** *(guided by traditional knowledge, Indigenous Peoples' knowledge and local knowledge systems)*

5.3.1 COMPONENTS OF THE FOUR-DIMENSIONAL TARGETS OF THE GLOBAL GOAL ON ADAPTATION

The four dimensional targets of the global goal on adaptation (described in paragraph 10 of decision 2/CMA.5) can be broken down as follows:

8. Impact, vulnerability and risk assessment and early warning systems

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 (paragraph 10a of decision 2/CMA.5);

By 2030

- Each Party to have conducted up-to-date **assessments of climate hazards, climate change impacts and exposure to risks and vulnerabilities**
- The outcomes of these **assessments used to inform their formulation or updating of national adaptation plans, policy instruments, and planning processes and/or strategies, and the implementation** there of

By 2027 all Parties have established

- **Multi-hazard early warning systems**
- **Climate information services for risk reduction**
- **Systematic observation** to support improved climate-related data, information and services

9. Plans, processes and mainstreaming

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(paragraph 10b of decision 2/CMA.5);

- The NAP by 2025 (GST decision)
- **Policy instruments and planning processes and strategies by 2030** covering ecosystems, sectors, people and vulnerable communities
- **Adaptation mainstreamed** in all relevant strategies and plans

10. Implementation

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 referred to in paragraph 10(a) of decision 2/CMA.5 (*paragraph 10c of decision 2/CMA.5*)

- Progress in **implementing the NAP, policies and strategies**
- **Measurable reduction** of the social and economic impacts of the key climate hazards

11. Monitoring, evaluation and learning

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(paragraph 10d of decision 2/CMA.5)

- **Designed and established a system** for monitoring, evaluation and learning
- **Operationalized the system** for monitoring, evaluation and learning
- **Built the required institutional capacity** to fully implement the system for monitoring, evaluation and learning

A practical approach is to up to break down each of the targets into systems for further analysis. The systems can be constructed to represent basic units of assessment and action. See table 4 below.

Table 4 Collection of systems used in addressing components of the targets of global goal on adaptation (an expanded table with descriptions of each with examples is given in the annex 2)

GGA TARGET	COMPONENTS OF THE TARGET	SYSTEM
A. Climate-resilient water and sanitation security for all	• Reduction in climate-induced water scarcity • Enhanced climate resilience to water-related hazards • Climate-resilient water supply for all • Climate-resilient sanitation for all • Access to safe potable water for all • Affordable potable water for all	Disaster preparedness and response (linked to MHEWS) Water supply system Water use management, governance, standards and policies Transboundary water agreements Storm water drainage system Sewage/Sanitation system Water processing for safety Water pricing and affordability system
B. Sustainable food and nutrition security for all	• Climate-resilient food and agricultural production • Climate-resilient food supply • Climate-resilient distribution of food • Sustainable and regenerative food and agricultural production • Equitable access to adequate food and nutrition for all	Food crop production Commercial crop production Food supply (local, household level) Food supply (gross national level) Food distribution/supply chain Equitable access to food and nutrition National food security Pastoral livestock production Farm livestock production Fisheries production Forestry production
C. Climate-resilient health systems and services	• Resilience against climate change related health impacts (particularly in the most vulnerable communities) • Climate-resilient health services (particularly in the most vulnerable communities • Reducing climate-related morbidity and mortality (particularly in the most vulnerable communities)	Emergency response Health services Healthcare infrastructure Climate morbidity and mortality
D. Healthy ecosystems and biodiversity	• Reduced climate impacts on ecosystems (through their management, enhancement, restoration and conservation and the protection) • Reduced climate impacts on biodiversity (through their management, enhancement, restoration and conservation and the protection) • Accelerated use of ecosystem-based adaptation and nature-based solutions (in terrestrial, inland water, mountain, marine and coastal ecosystems)	Ecosystem management (impact reduction) Ecosystem function (resilience) Biodiversity hotspots General biodiversity loss reduction (habitat, rights) Genetic biodiversity preservation - crop Genetic biodiversity preservation - plants Genetic biodiversity preservation - fish Genetic biodiversity preservation - animal

GGA TARGET	COMPONENTS OF THE TARGET	SYSTEM
E. Climate-resilient infrastructure and human settlements for all	• Climate-resilient infrastructure to climate change impacts to ensure basic and continuous essential services for all • Resilient human settlements to climate change impacts to ensure basic and continuous essential services for all • Minimized climate-related impacts on infrastructure and human settlements	Key infrastructure Essential services: access, shelter, energy, water, health services Living spaces Land use and zoning Building designs, codes and regulations
F. Climate-proof poverty reduction and livelihoods, and climate-social protection measures for all	• Reduced adverse effects of climate change on poverty eradication and livelihoods • Use of adaptive social protection measures for all	The national economic engine Poverty reduction system Employment Rural livelihoods Social protections
G. Climate-proof cultural heritage	• Protecting cultural heritage from the impacts of climate-related risks by preserving cultural practices • Protecting cultural heritage from the impacts of climate-related risks by preserving heritage sites • Protecting cultural heritage from the impacts of climate-related risks by designing climate-resilient infrastructure	Preservation of cultural practices and traditional knowledge/Intangible Cultural Heritage System Preservation of cultural heritage sites (systems)/ Tangible Cultural Heritage Protection System Economics of cultural heritage/ Cultural Economy and Creative Livelihoods Non-economic value system of cultural heritage/ Cultural Infrastructure and Institutions Rights and access to Cultural Resources
Impact, vulnerability and risk assessment and early warning systems	• Multi-hazard early warning systems • Climate information services • Systematic observations	MHEWS Climate information services Systematic observation systems
Plans, processes and mainstreaming	• NAP by 2025 • Policies, plans and strategies by 2030 (targeting ecosystems, sectors, people and vulnerable communities) • Mainstreaming adaptation in strategies and plans	Submission of NAPs Plans, processes and mainstreaming
Implementation and adaptation/ resilience benefits	• Progress in implementation of NAPs, policies and strategies by 2030 • Measurable reduction in social and economic impacts	Implementation of NAPs Measurement of reduction in social and economic impacts (adaptation benefits)
Monitoring, evaluation and learning	• Monitoring, evaluation and learning system (MEL)	Design and establishment of MEL system Operationalization of MEL Implementation and adaptation/resilience benefits

5.4 Identifying connected systems to promote integrated approaches

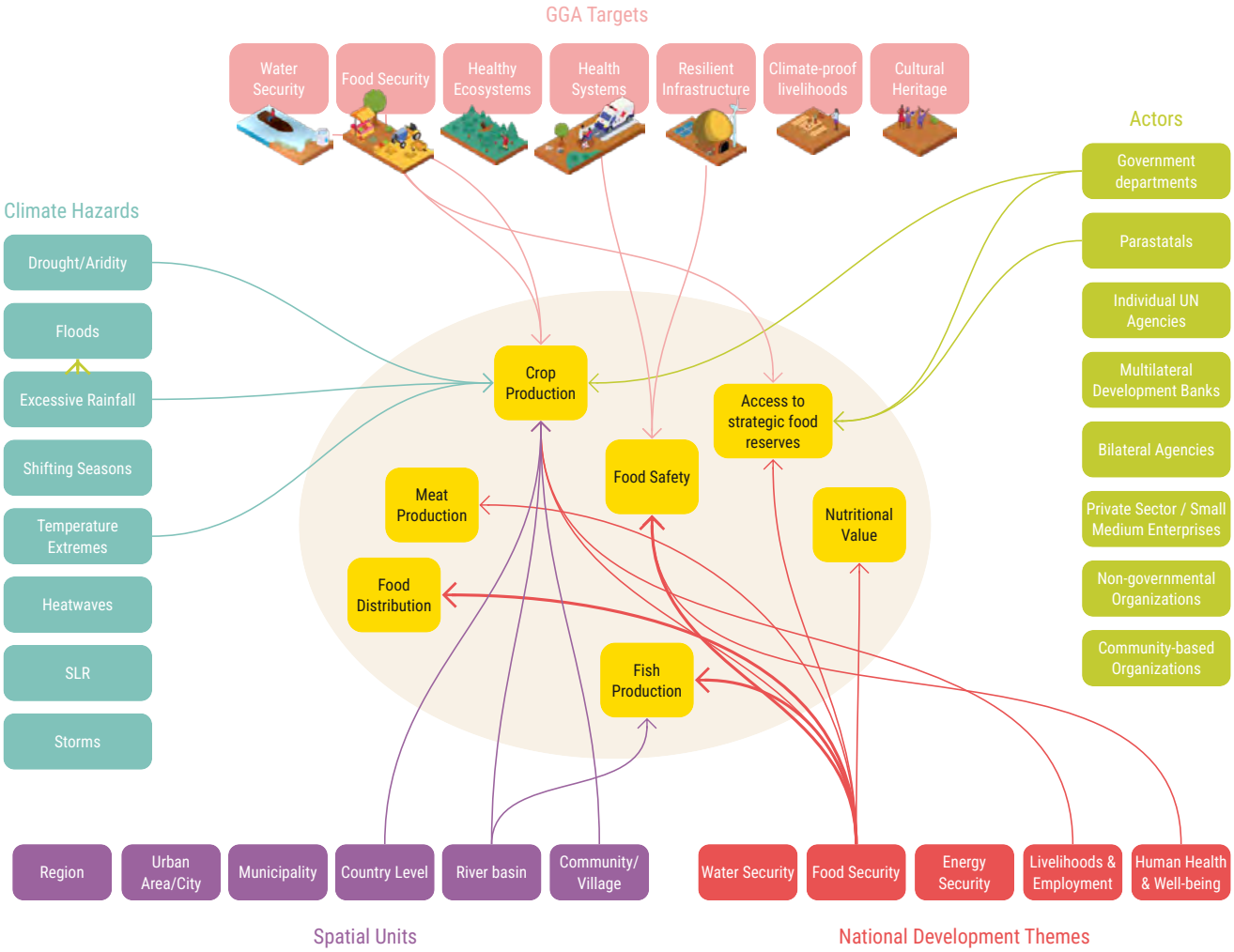
MULTIPLE ENTRY POINTS TO SYSTEMS

To manage interactions between systems and various dimensions of adaptation, the LEG has developed an approach, termed the NAP integrating framework or NAP iFrame, to facilitate the mapping of different aspects associated with systems or management units[1]. The approach makes it easy to identify dependencies and synergies between components, and can be extended to any consideration. Figure 5 and 6 shows how the seven GGA themes map to sample systems in the middle of the diagram, and how each of the system in turn, maps to different lenses on the outside, from hazards, spatial scales, development themes, SDGs, etc.

Applying the NAP iFrame enables countries to harmonize addressing SDGs, the GGA targets, and national goals (development, disasters, etc.) with activities designed to address adaptation in a country-driven manner. It facilitates harmonized reporting on indicators for the SDGs and assessment of outcomes of the adaptation benefits. To do this well, it requires good collaboration between all relevant ministries and supporting agencies and organizations – avoiding a siloed approach, maximizing synergy and effectiveness.

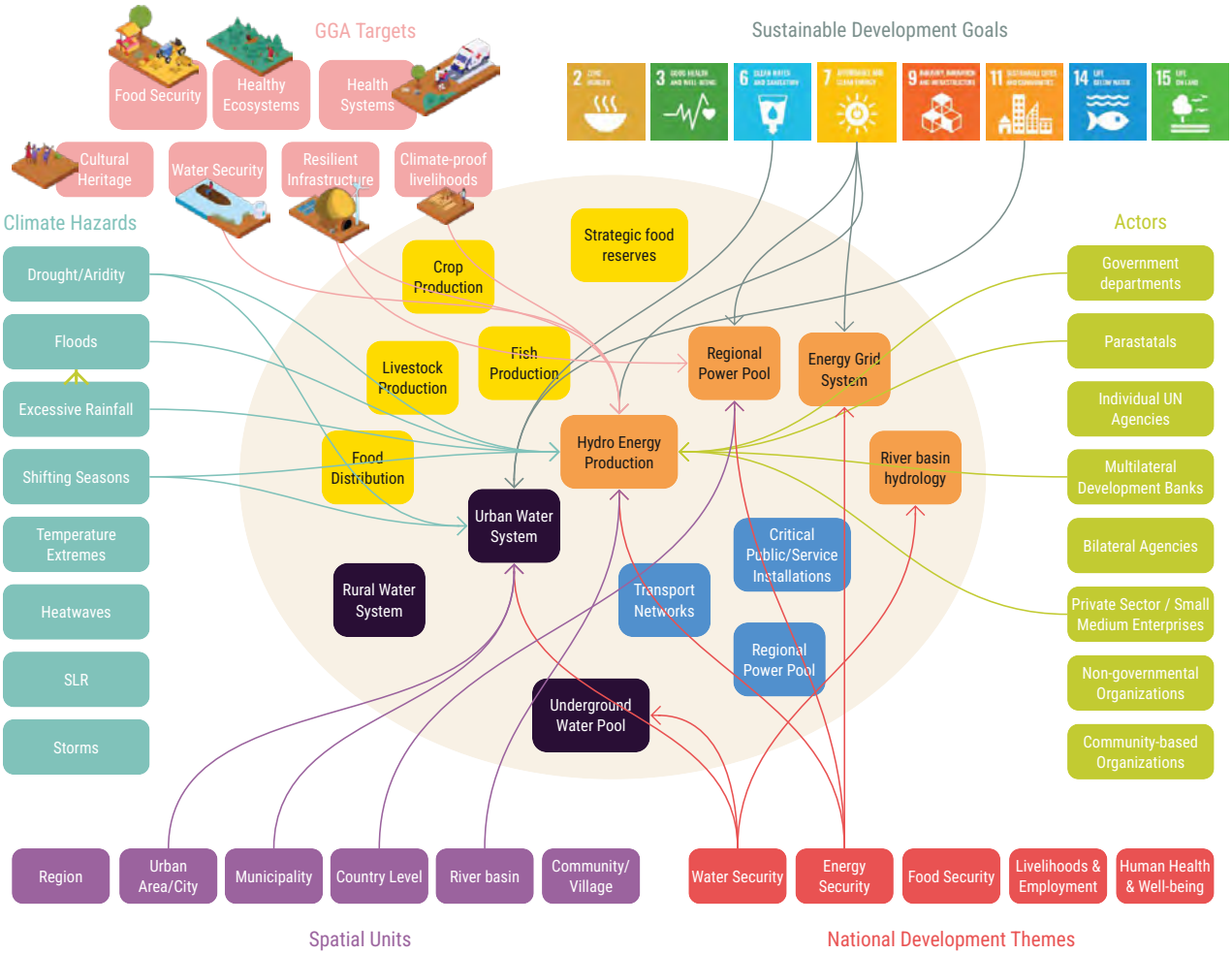
The NAP iFrame above is a useful tool for multi-stakeholder dialogues in identifying linkages between different entry points, and to help understand scales and other dimensions at which different processes and issues are relevant. Careful application of the NAP iFrame avoids activities to promote integration and synergy after the fact.

Figure 5 The NAP iFrame showing agriculture and food systems mapped to different entry points for assessment



1 https://unfccc.int/files/bodies/adaptation_committee/application/pdf/20170517_leg_nap.pdf.

Figure 6 The NAP iFrame showing systems from four themes mapped to different entry points for assessment



INTERACTIONS BETWEEN SYSTEMS (NEXUS APPROACHES)

There are many interactions between components of the global goal of adaptation thematic areas, and in fact, most activities on the ground address multiple issues concurrently. Such interactions can be reinforcing, enabling, constraining, counteracting, or cancelling.

The so-called nexus approaches are a useful way to recognize interactions between systems and to manage tradeoffs between them. In advancing adaptation in alignment with the global goal of adaptation, a nexus approach between components and systems from different target areas would lead to addressing adaptation in ways that more closely match how issues are dealt with in a country. The following are a few examples of nexuses that have been looked at in detail:

- **WEF (water-energy-food) nexus:** Highlights the interdependence of water, energy, and food systems, emphasizing the need for integrated resource management to ensure sustainable access and resilience.[2]

- **IPBES (Nexus Report):** Recognizes that the global challenge of biodiversity loss, water and food insecurity, health risks and climate change are interconnected. The five nexus elements, including their social, economic, and environmental components: Interact across ecosystems, geographic regions and scales; Influence each other (interlinkages) and depend on each other to function (interdependences).[3]

2 https://www.unwater.org/water-facts/water-food-and-energy.

3 IPBES (2024). Summary for Policymakers of the Thematic Assessment Report on the Interlinkages among Biodiversity, Water, Food and Health of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services. IPBES secretariat, Bonn, Germany. DOI: https://doi.org/10.5281/zenodo.13850289.

- **Biodiversity-ecosystems-climate (BEC) nexus:** Refers to the interconnectedness and mutual influence between biodiversity, ecosystems, and climate change.
- **Climate-health-livelihoods nexus:** Climate driven impacts and interconnected influence on human lives, health, livelihoods, and wellbeing.[4]
- **Urban-infrastructure-social nexus:** Climate change impacts on key urban infrastructure with interactions across social dimensions of wellbeing and livelihoods.
- **Land-soil-food nexus:** Highlights how health and management of soil directly impact food production, security, sustainability, and vice-versa.
- **Water-sanitation-public health nexus:** Interconnectedness of water systems and health. How water sanitation quality is vital for public health outcomes, especially when impacted by climate-induced stressors such as droughts and floods.[5]

ADDRESSING CROSS-CUTTING SECTORS NOT COVERED DIRECTLY BY THE SEVEN GGA THEMES

One of the frequently asked questions is about how to deal with sectors that are considered important for a country but which are not included in the seven GGA themes. For example, tourism and hydroelectricity production. If we consider these as cross-cutting issues, then compound systems or nexuses can be built by linking to component systems from the different GGA areas.

For example, hydroelectricity production can be considered a function of water supply; infrastructure in terms of the grid and generation equipment, energy demand dynamics related to water, food, health and livelihoods; and water related hazards in terms of impacts of floods and droughts, or seasonal changes in rainfall.

Tourism on the other hand could be considered to include links to ecosystems, cultural heritage, infrastructure and livelihoods. In this way, any sectors that are considered important for a country can easily be considered by mapping to relevant components of the seven GGA target areas.

Table 5 Links to relevant components of the seven GGA target area for other sectors

HYDROELECTRICITY PRODUCTION CAN BE LINKED TO:	TOURISM CAN BE LINKED TO:
Water supply systems	Ecosystems
Infrastructure (grid and generation equipment)	Cultural heritage
Energy demans (linked to water, droughts, seasonal rainfall challenges)	Infrastructure
	Livelihoods

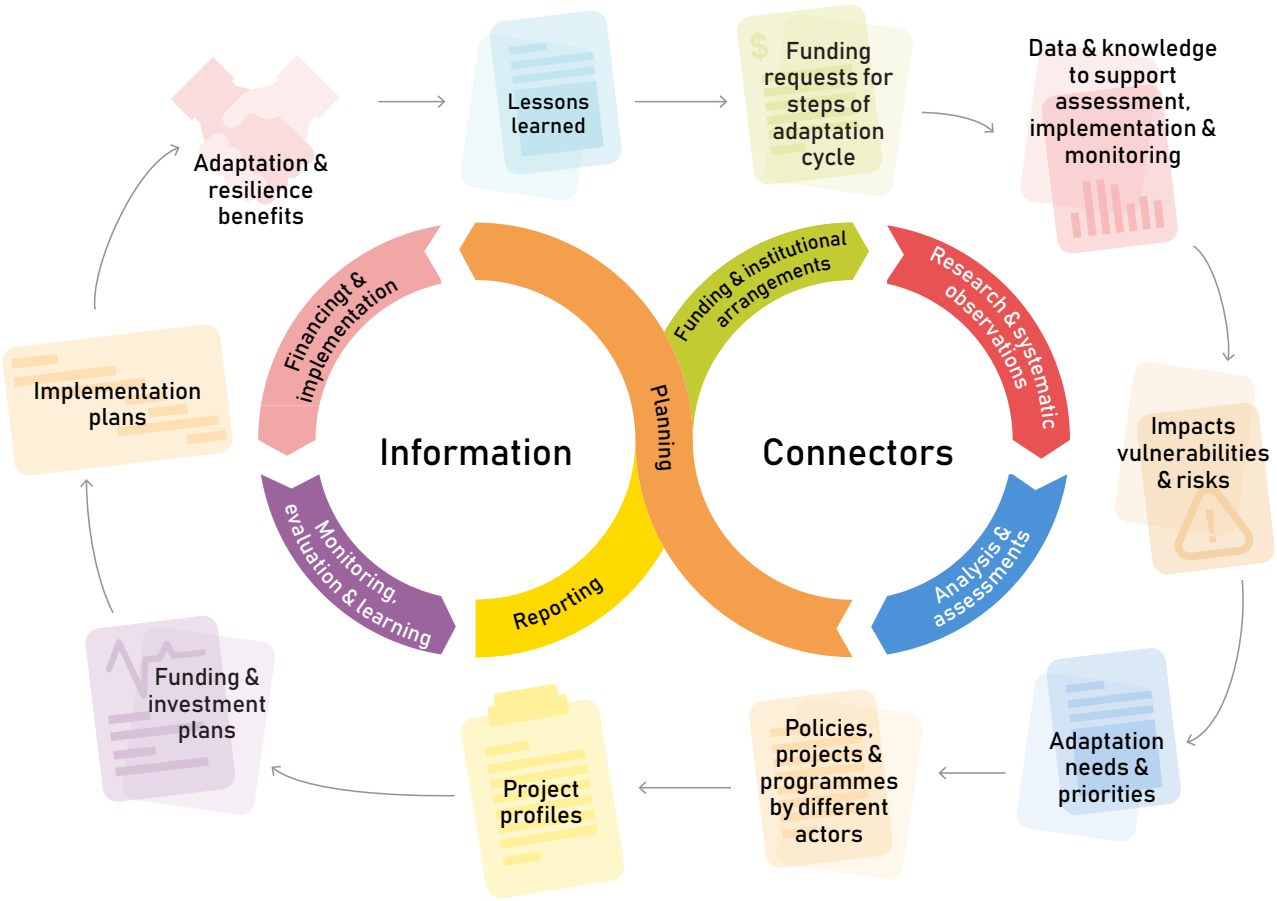
4 https://www.thinkglobalhealth.org/article/cop28-climate-health-nexus-turned-corner-better-and-worse.

5 Philip, L. Overlooking the critical nexus between water, sanitation, and health. Nat Water 2, 1042–1043 (2024). https://doi.org/10.1038/s44221-024-00337-z. https://www.nature.com/articles/s44221-024-00337-z.

5.5 Overall approach of the technical guidelines focused on managing flow of information between steps

An important approach in the updated technical guidelines is the focus on main information that is assembled in each step and passed on to subsequent steps, to inform decisions along the adaptation cycle. See figure 10. The information is produced using by a variety of methods and techniques available to the NAP teams based on the data, technology and technical capacity. Templates that could be used to present the information are included in the annex.

Figure 7 Key data and information assembled under key steps of the adaptation cycle and used in subsequent steps, showing a focus on information to support decision-making and implementation, rather than technical methodologies under each step



6.

Recommended contents of the NAP

The following are chapters that would be useful to include in the main NAP (the plan) to effectively communicate adaptation priorities, how they would be implemented, and information on funding windows. It is highly recommended that additional details and lengthy reports are included either in annexes, or better yet, in separate outputs of the NAP process that would be referenced in the NAP. Users of the NAP are therefore encouraged to consider all outputs of the NAP process as sources of information related to the formulation and implementation of the NAP for the country. The NAP should contain information that will facilitate subsequent extraction of information for further use in implementing the NAP, while providing only sufficient background details and descriptions of the approaches used, while pointing to more detailed reports elsewhere.

BEST PRACTICE CONTENTS OF THE NAP

1. Background and contextual information about the country

- Include information describing the country to provide a broad context for the rest of the document and the general approaches used in developing the NAP (full details would be provided later in the document).

2. Vision, goals and objectives

- Present a vision for a climate-resilient future, for example by 2030 or 2035 and beyond, to establish a future baseline against which to measure progress;
- List clear and measurable national adaptation goals in the context of the GGA as a minimum, and additional elements considered important for the country;
- Describe specific and actionable objectives and targets that contribute to achieving the country's overall adaptation goals.

3. Policy and regulatory framework

- Provide information on policies and regulations (current and proposed) that support the country's climate adaptation efforts, including mandates at different levels and among various sectors;
- Include any incentives (new and proposed) for adopting climate-resilient practices and disincentives for activities that increase vulnerability to climate change;
- Describe the delineation of areas of interest, such as the most vulnerable groups and ecosystems, or regions of special focus;
- Provide information on institutional and legal arrangements for the NAP process, including the distribution of work across different actors;
- Include reference to any instructions or orders to government ministries and agencies on actions to be undertaken to address climate change adaptation.

4. Framework for the NAP

- Describe the approach for development of the NAP as supported by stakeholders
- Frame adaptation at the national level according to national priorities taking into consideration the global goal on adaptation and its relevant outcomes, including the UAE Framework;
- Choice of systems and components representing national priorities and the themes of the GGA to be considered in the NAP, including a definition of nexuses to be considered, reflecting priority systems to be considered by taking into account ongoing adaptation efforts;
- Describe stakeholder engagement at relevant stages of the NAP process.

5. **Consideration of guiding principles (best practices) for adaptation**

- Provide information on how vulnerable groups have been considered.

6. **Key climate risks and vulnerabilities, and adaptation needs**

- Make reference to the climate and socioeconomic scenarios used;
- Provide information on projected climate risk and impacts across different levels of warming between 1.5 and well below 2oC;
- Describe and list current and recent past vulnerabilities and impacts in relation to the main climatic hazards;
- Describe projected future vulnerabilities and risks and potential impacts and losses in the future;
- Include information on applicable approaches (e.g., those focusing on managing risk, reducing vulnerability reduction or avoiding exposure) and a discussion on climate resilience and what that means.

7. **Priority adaptation actions**

- Present priority adaptation solutions and measures as a result of ranking and appraising options on the basis of established/agreed criteria;
- Cluster activities on the basis of stage of response (such as pre-emptive and disaster risk reduction actions, or contingent and anticipatory actions), and provide references to how to address loss and damage under related workstreams and other planning processes (such as complementary efforts under funding channels for loss and damage, or disaster management and response);
- Arrange the adaptation priorities into action plans, policies, programmes and projects.

8. **Integration of the NAP with national development plans, and sectoral plans where relevant, including the identification of synergies**

- Describe the integration of climate adaptation priorities and plans into broader development plans to ensure that all relevant development activities consider climate risks and contribute to resilience-building;
- Describe the integration of NAP priorities into national, and sectoral plans where relevant, to align with financing and implementation plans at the national level and as required for some funding through relevant multilateral entities;
- Describe how synergies with different agendas (e.g. the SDGs, biodiversity, disaster management, urban agendas, land degradation neutrality) will be promoted.

9. **Required financial resources**

- Present broad estimates of the financial resources required for each adaptation action and for the overall NAP;
- Describe how much and where financial support is already being accessed to help calculate financing gaps.

10. Implementation strategy

- Identify appropriate approach(es), including sectoral, thematic, or territorial approaches, as well as project or programmatic approaches;
- Describe the phased approach to implementing adaptation projects, prioritizing them according to the level of urgency;
- Describe support needs for implementation;
- Show how implementation will be distributed between different actors, including government entities, the private sector, civil society and local communities.

11. Financing

- Present a concrete strategy for financing linked to different funding sources and their applicable modalities, covering the international climate funds under the Financial Mechanism of the Convention and the Paris Agreement, other relevant sources;
- Include cost estimates of the adaptation priorities, where possible;
- Include a mapping to the following sources:
  - GCF country programme;
  - GEF, LDCF, SCCF;
  - AF country programme;
  - Any other sources deemed appropriate by the country.
- Describe provisions for enhancing complementarity between the activities under the different funding channels in support of implementing the NAP as a national programme.

12. Monitoring, evaluation and learning

- Monitoring, evaluation and learning framework:
  - Monitoring and evaluation framework: develop/apply a framework for monitoring and evaluating the progress and effectiveness of adaptation actions;
  - Indicators and metrics: define/apply specific indicators and metrics to track progress towards adaptation goals and objectives;
- Learning platform:
  - Describe plans for learning and how experience from other regions would be integrated into national adaptation practices.

13. Reporting

- Describe plans for reporting systems at the national level to ensure transparency and accountability in the implementation of the NAP;

14. Annex: Selected project profiles: essential projects and other priorities

- Include profiles of the main projects suggested by the GGA dimensional targets:
  - GCF NAP readiness and other readiness support;
  - Multi-hazard early warning systems;
  - Climate information services;
  - Others;
- Include profiles of selected priority projects and programmes that are part of the first phase of NAP implementation.

7.

Modules and steps of the updated technical guidelines

7.1 Elements of the NAP process and the iterative adaptation cycle

The process to formulate and implement NAPs comprises the four elements contained in the initial guidelines for the formulation of NAPs by the LDCs adopted by COP 17[1] : laying the groundwork and addressing gaps; preparatory elements; implementation strategies; and reporting, monitoring and review.

Decision 3/CMA.4 defines the components of the iterative adaptation cycle to comprise: impact, vulnerability and risk assessment; planning; implementation; and monitoring, evaluation and learning; while recognizing that support in terms of finance, capacity-building and technology transfer is a consideration in each stage of the cycle.

7.2 Modules of the NAP process

The elements and adaptation cycle components are merged into a set of modules and steps, designed to accommodate both while aligning with the GGA framework. The resulting five modules of these updated technical guidelines reflect the necessary actions to fully consider the formulation and implementation of NAPs and cross-cutting activities such as building readiness, accessing funding and technical support from relevant sources in maintaining the NAP process over time. See figure 8 and table 6.

The modules and steps are not sequential, in fact, many should be addressed in parallel, and provide inputs to other steps in an iterative fashion.

Figure 8 Main modules of the NAP process based on the elements of the process in decision 5/CP.17 and the iterative adaptation cycle in decision 3/CMA.4.

1 Decision 5/CP.17, annex.

Table 6 The modules and steps of the updated NAP technical guidelines

A: Impact, vulnerability and risk assessment

1. Frame adaptation at the national level taking into account the GGA thematic and dimensional targets
2. Develop plausible climate change and socio-economic scenarios for the medium and long-term
3. Document climate hazards, vulnerabilities and risks and impacts of climate change
4. Conduct assessments of climate hazard/exposure, vulnerability and risk

B: Plan development

5. Understand the vision for development for the country and major thrusts of that aspirational vision in the context of the changing climate
6. Synthesize best available information on climate hazard/exposure, vulnerability and risk from relevant assessments
7. Identify adaptation options to address key climate risks and vulnerabilities and build resilience
8. Estimate costs of adaptation in relevant contexts: cost of implementation of adaptation actions, costs of inaction or benefits of adaptation action
9. Compile the NAP and process endorsement and submission to the UNFCCC (after Element C)

C: Financing and implementation

10. Determine financing needs for implementation
11. Implement/execute adaptation/risk management and resilience solutions

D: Monitoring, evaluation and learning and reporting

12. Systematic data collection to inform adaptation and monitoring including of progress
13. Periodic evaluation and learning
14. Progress reporting at the national level
15. Promoting synergy with international reporting

E: Cross-cutting: building readiness and accessing funding and other support for the whole process

16. Strengthen institutional arrangements and regulatory frameworks
17. Lay the groundwork for implementation and determination of needs for addressing climate change including by accessing available technical support
18. Access GCF NAP readiness and general readiness funding, and other relevant sources, to support the process of formulation, and implementation of NAPs, capacity-building and related enabling activities to maintain the process
19. Build/update a data, knowledge and tool base for all modules in close coordination with module D.1

7.3 Steps and indicative activities under each module

MODULE A: IMPACT, VULNERABILITY AND RISK ASSESSMENT

1. **Frame adaptation at the national level in the context of the GGA thematic targets**

- Unpack the GGA thematic targets into NAP-GGA components and systems to align with roles and responsibilities of different actors to facilitate assessment and identification of adaptation options
- Map current sectors to the NAP-GGA components and systems
- Define sectoral scope of the NAP by identifying and prioritizing key economic, social, and environmental sectors that are critical for adaptation planning and implementation
- • Define geographic scope by determining the spatial boundaries (national, regional, local) relevant for adaptation actions, considering areas most vulnerable to climate risks and aligned with national development priorities
- • Define time horizon by establishing short-, medium-, and long-term planning periods that align with climate projections and policy cycles, to ensure adaptive strategies are relevant and actionable over time

2. **Develop plausible climate change and socio-economic scenarios for the medium and long-term**

- Develop plausible scenarios for future climate, guided by the global temperature goal of 1.5o C and well below 2o C
- Develop corresponding socio-economic scenarios for the medium and the long-term
- Assemble relevant projections such as for economic growth, social development, population

3. **Document climate hazards, impacts. vulnerabilities and risks and impacts of climate change**

- Synthesize recent changes in climate and observed hazards and general trends in climate variables
- Compile observed impacts of climate change and emergent vulnerabilities and risks

4. **Conduct assessments of climate hazard/exposure, vulnerability, risk and resilience**

- Apply the framing of vulnerability, risk and resilience based on the IPCC AR6 to define the assessment approach
- Understand and estimate risk and vulnerability using applicable assessment methodologies, models and tools for each NAP-GGA system or combinations of such systems in the form of a nexuses
- Use a multistakeholder process to identify key risks and vulnerabilities to be addressed further, and how to achieve resilience benefits
- Produce (and co-produce with different stakeholders) outputs such as risk and vulnerability indices to meet needs of different actors during planning and implementation of adaptation actions
- Produce an assessment report as part of the GGA dimensional target

MODULE B: PLAN DEVELOPMENT

5. **Understand the vision for development for the country and major thrusts of that aspirational vision**

- Consider the aspirational future (say by 2030, 2040/2050 as appropriate) for the country based on national development plans and strategies to define a (future) baseline for adaptation
- Articulate how climate change will impact that aspirational state in the context of climate change scenarios to inform framing of adaptation ambition and needs
- Frame adaptation at the national level taking into account the GGA thematic targets
- Define institutional and governance arrangements for the NAP as a national programme for adaptation for the country
- Define the vision, goals and objectives of the NAP, in the context of the GGA themes and national development, based on the visioning exercise above
- Define criteria for choice of systems to focus on, and for ranking adaptation options, and other steps that require stakeholder input
- Select NAP-GGA systems for each GGA theme to focus on in the NAP

6. **Synthesize best available information on climate hazard/exposure, vulnerability, risk and resilience from relevant assessments**

- Apply the framing of vulnerability and risk based on the IPCC AR6 to define the approach for synthesizing assessment results
- Synthesize risks and vulnerability for each NAP-GGA system or combinations of such systems in the form of a nexuses based on best available science
- Use a multistakeholder process to identify key risks and vulnerabilities to be addressed further

7. **Identify adaptation options to address key climate risks and vulnerabilities and build resilience**

- Propose adaptation, risk management and resilience-building options to address the key risks and vulnerabilities, taking into account guiding principles for adaptation relating to gender, IPs and local communities, youth etc.
- Appraise and rank the response options into priority adaptation solutions and actions to meet national priorities including GGA thematic and dimensional targets with the participation of stakeholders

8. **Estimate costs of adaptation**

- Estimate costs of adaptation in relevant contexts, such as cost of implementing the priority adaptation solutions and actions identified in the NAP, costs of inaction, or benefits of adaptation actions

9. **Compile the NAP and process endorsement and submission to the UNFCCC (after module D.1), and based on Section 7 on the recommended contents of the NAP**

- Define an implementation strategy that assigns adaptation actions to relevant ministries and other actors
- Consider administrative levels and scale such as transboundary/multi-country and regional approaches, subnational and local actors in the design of implementation of actions and projects
- Compile a draft NAP, and include priorities at different levels, sectors and scales for stakeholder endorsement and validation
- Integrate the NAP priorities into national, sectoral, subnational and local development plans as necessary
- Submit the nationally endorsed NAP to the UNFCCC

Box 2.

Vision for a well-adapting country by 2030 and 2035: the future as a baseline for adaptation

The following is a sample vision for a well-adapting country by 2030 and 2035, offering a baseline against which progress in the NAP could be monitored:

1

- Political will and awareness of climate change is high, leading to a prioritization of adaptation in all aspects of development and planning in relation to a national vision for development;

  as demonstrated by climate change adaptation considerations being well integrated into all planning and development activities and institutions are operating to support climate change adaptation goals at all levels of government;

2

- Technical capacity to deal with climate change is high, covering all aspects such as assessment, planning and implementation, including specific steps related to access to and absorption of adaptation finance;

  as demonstrated by reduced reliance on international consultants and faster delivery of outputs and outcomes, and application of outputs such as climate risk information in informing investment decisions through credit ratings;

3

- Efforts to address climate change adaptation are well coordinated and aligned between different actors, leading to a coherent and complementary approach to adaptation;

  as demonstrated by effective coordination mechanisms that are in place with clear leadership of the national government;

4

- Chronic changes (slow onset events) are being addressed, with measurable benefits in reducing vulnerability and enhancing resilience (across all thematic targets of the global goal on adaptation), without impacting development trajectories;

  as demonstrated by steady progress in development that is little affected by chronic climate changes;

Box 2. Continued

Vision for a well-adapting country by 2030 and 2035: the future as a baseline for adaptation

5

- The country is responding to climate change along the full spectrum of actions needed to build resilience and reduce disaster risk, managing impacts by optimizing pre-emptive, contingency actions and actions to address loss;

  as demonstrated by seamless efforts to respond to climate change risks and impacts spanning adaptation and loss and damage windows of support, in coordination with humanitarian and development efforts;

6

- Financing needs for adaptation are being met at scale through a wide range of sources, without increasing indebtedness;

  as demonstrated by levels of debt related to adaptation actions by 2030 and 2035, and progressively after;

7

- Adaptation efforts are socially inclusive and equitable, prioritizing the needs, involvement and leadership, of vulnerable groups, communities and ecosystems, with attention given to gender-responsiveness, the inclusion of local and Indigenous stakeholders, and local communities, among others;

  as demonstrated by targeted programmes;

8

- The capacity of the country is increasing over time in several aspects relating to the formulation and implementation of NAPs, such as in relation to readiness and capacity to engage in and catalyse additional and more advanced and diverse financing instruments and modalities;

  as demonstrated by an expanding mobilization of support for adaptation and progress towards closing the gap in adaptation financing.

MODULE C: FINANCING AND IMPLEMENTATION

10. Determine financing needs for implementation

- Map adaptation priority actions into project ideas and programmes
- Integrate NAP priority projects into applicable country programmes/country assistance frameworks for each actor or funding vehicle
- Develop a 5-year programme for implementing the whole NAP, targeting a variety of relevant funding/financing windows for the projects or combinations of windows.
- Follow the relevant project or funding cycles to prepare funding requests (in the form of project proposals or other formats as applicable)

11. Implement/execute adaptation/risk management and resilience solutions

- Manage implementation of projects and execute adaptation solutions
- Develop and apply systematic observation and monitoring of systems under adaptation intervention to identify triggers or nodes for changes in adaptation pathways

Box 3.

Applying finance mapping to advance NAP formulation and implementation

The Mapping of available sources of finance for climate adaptation for least developed countries[1] by the LEG provides LDCs with a practical tool to identify and apply financing at each stage of the adaptation cycle. It enables countries to navigate funding sources including the UNFCCC financial mechanism and the Adaptation Fund, and other relevant sources. By linking funding opportunities to the specific stages of the adaptation process and categories of need, the finance mapping also serves as a foundation for developing a clear and targeted access to resources.

1 https://unfccc.int/sites/default/files/resource/Mapping-of-adaptation-finance.pdf

MODULE D: MONITORING, EVALUATION AND LEARNING AND REPORTING

12. Systematic data collection to inform adaptation and monitoring including of progress

- Develop or apply M&E systems to track progress, effectiveness and gaps in adaptation
- Apply protocols for data collection for monitoring key NAP-GGA systems, informed by, as appropriate, metrics and indicators being developed for the GGA thematic targets
- Monitor and document climatic events to improve understanding of impacts, vulnerabilities and risks to inform further adaptation responses

13. Periodic evaluation and learning

- Assess opportunities of adaptation and identify opportunities for solutions
- Periodically assess/evaluate progress and effectiveness (and other parameters) based on data from the regular monitoring, including through independent assessments
- Capture lessons learned in addressing adaptation to inform subsequent actions
- Assess effectiveness of adaptation

14. Progress reporting at the national level

- Address national progress reporting needs as per relevant NAP mandates and applicable national policies and procedures
- Prepare a progress report on the implementation of the NAP by 2030, as appropriate and on a country driven basis

15. Promoting synergy with international reporting

- Contribute information on adaptation to different reports to the UNFCCC and Paris Agreement (such as national communications, NDCs, adaptation communications and BTRs)
- Include information in the NAP to address needs for information by different workstreams in relation to NAPs under the UNFCCC and Paris Agreement (e.g., in relation to gender, LCIPP, youth, and other aspects) where applicable and relevant

Box 4.

The Progress, effectiveness and gaps monitoring and evaluation tool (PEG M&E 2.0 tool)

The LEG in 2015 developed the technical paper titled "Monitoring and assessing progress, effectiveness and gaps under the process to formulate and implement National Adaptation Plans: The PEG M&E tool". The PEG M&E tool provides a set of five generic metrics that can be applied when monitoring and assessing progress and effectiveness, and in so doing, helping identify gaps and needs to further improve the process. The five metrics relate to inputs, process, outputs, outcomes and impacts.

The PEG M&E 2.0 is a tool to monitor and evaluate the progress in the process to formulate and implement NAPs. It uses the approach of defining metrics (scoring system) to measure the progress across six overarching areas:

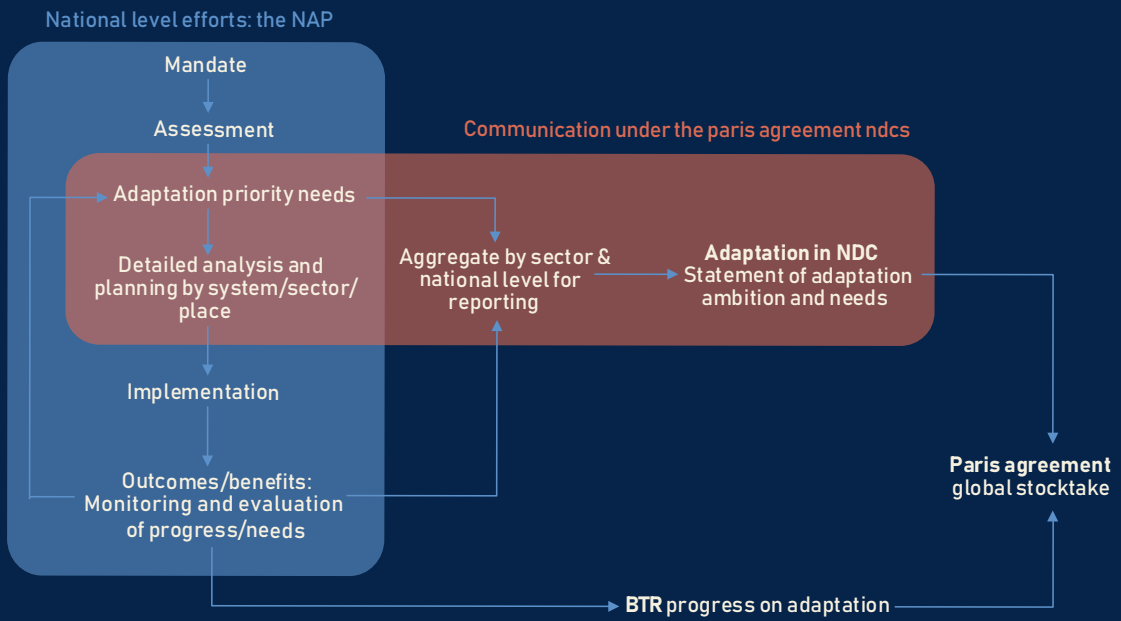
1. **Provision of financial and technical support for adaptation**
2. **Access to financial support by developing countries for adaptation**
3. **Science, framing knowledge and methodologies for adaptation**
4. **Achieving the essential functions of the process to formulate and implement NAPs**
5. **Addressing the guiding principles of the process to formulate and implement NAPs**
6. **Achieving the two objectives of the process to formulate and implement NAPs and the targets of the UAE Framework for Global Climate Resilience**

Box 5.

Aligning information in NAPs, NDCs, and Adaptation Communications

The LEG policy brief on aligning the information contained in NAPs with NDCs, and adaptation communications emphasizes the importance of coherence among these instruments to enhance climate resilience. The brief outlines that such alignment can improve the effectiveness of adaptation actions, streamline reporting processes, and facilitate access to climate finance. By integrating the detailed planning of NAPs with the strategic vision of NDCs and the communicative function of adaptation communications, countries can present a unified approach to adaptation that aligns with their development goals and respective international commitments. The LEG highlights that this synergy can lead to more improved efficiency and coordination, better resource allocation, and comprehensive approach to climate change.

Figure 9 Overview of steps involved in developing a NAP and how these relate to the production of NDCs, adaptation communications and progress reporting in BTRs.



MODULE E: CROSS-CUTTING: BUILDING READINESS AND ACCESSING FUNDING AND OTHER SUPPORT FOR THE WHOLE PROCESS

16. Lay the groundwork for implementation and determination of needs for addressing climate change including by accessing available technical support

- Support national entities to get accredited with the UNFCCC funds (GCF and AF)
- Support functions of designated national authorities to process adaptation projects
- Integrate adaptation in national and where relevant sectoral planning processes
- Create enabling environment for non-state actors to participate in the implementation of the NAP
- Access available technical support and assistance (see Annex V for examples)

17. Strengthen institutional arrangements and regulatory frameworks

- Create/update formal mandates and legislation for adaptation as appropriate
- Strengthen coordination mechanisms between ministries
- Integrate climate change adaptation in sectoral planning

18. Build/update a data, knowledge and tool base for all the modules in close coordination with module D.1

- Develop data policies and data-sharing protocols between relevant ministries and different actors as appropriate
- Conduct a stocktaking, mapping and synthesis of available information
- Assemble relevant goals and plans for development for the country from relevant ministries and other relevant stakeholders
- Assemble relevant data, models, tools and knowledge systems for key NAP-GGA systems

19. Access GCF NAP Readiness funding, and other relevant sources, to support the process of formulation, implementation of NAPs, capacity-building and related enabling activities to maintain the process

- Access funding from GCF NAP readiness and development of project proposals for NAP implementation
- Access funding from GCF and other relevant sources for NAP implementation
- Access funding from the other GCF Readiness Support windows, and other funds, for accreditation and related capacity building for engagement with the GCF
- Continue to build capacity for the NAP process based on identified priority needs
- Create and strengthen stakeholder participation processes

Box 6.

GCF Readiness Programme

GCF Readiness and Preparatory Support Programme ("Readiness") supports country-driven initiatives to strengthen their institutional capacities, governance mechanisms, and planning and programming frameworks towards their long-term climate action agenda. At the time of writing (31 July, 2025), GCF has deployed USD 657 million through Readiness to support 812 requests in 142 countries.

Following consultations and in response to feedback, GCF is rolling out a new approach to Readiness during 2025 in line with the new 2024-2027 Readiness Strategy (https://www.greenclimate.fund/document/readiness-strategy-2024-2027). The new approach builds on successes and lessons learned in the past and represents a transition to a programmatic approach to readiness.

GCF has committed to becoming simpler and easier to access, reducing transaction costs and the time required to access readiness support. Readiness will now intentionally support national coordination when designing, requesting, and implementing support. The new approach aims to provide fast access to the world's top-tier expertise and fit-for-purpose experience, including from local service providers, leaving the ultimate choice of delivery partner to countries and entities.

The GCF Readiness Programme) supports country-driven initiatives to strengthen their institutional capacities, governance mechanisms, and planning and programming frameworks towards a transformational long-term climate action agenda.

Readiness support is provided to countries through National Designated Authorities (NDAs) and/or focal points (FPs). Readiness funding can also be deployed to strengthen Direct Access Entities (DAEs).

All developing country Parties to the UNFCCC can access the Readiness Programme.

- **Country window:**
  Total envelope: Countries can access a total envelope of up to **USD 7 million per country over 4 years** for the integrated planning and implementation of adaptation and mitigation measures. This includes previously available support for National Adaptation Plan (NAP) formulation (NAP.1) for countries that have not yet fully utilised it. Additionally, countries can submit an additional request for up to USD 3 million to support NAP implementation (NAP.2) if the main envelope has less than USD 250,000 remaining in committed funds. This additional funding is based on a mutually agreed clear need and demonstrable impact on NAP implementation.
- **DAE window:**
  Within the DAE modality, funding is provided to assist accredited DAEs as well as candidate DAEs in the advanced stages of the GCF accreditation process.
  The total financial envelope for DAE support includes: Up to USD 1 million per entity over the four-year period[1]. This financing modality is intended for addressing the readiness objectives as they pertain to DAEs, based on coordination with respective NDAs and in line with country priorities. Readiness support is to be requested based on a four-year planning. Activities can be implemented within any period deemed appropriate, so long as a funding request(s) is approved within the GCF-2 period, i.e., 2024-2027.

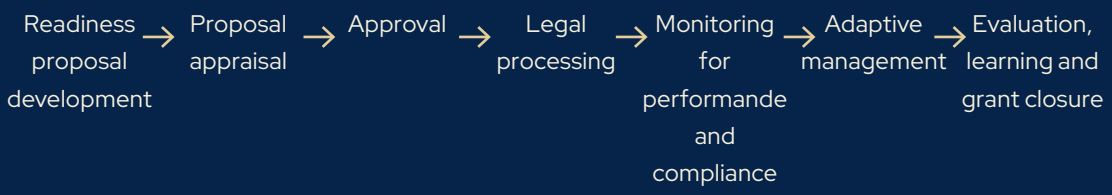
1 [1] A one-time allocation of USD 12.4 million approved for the implementation of the GCF Integrated Results Management Framework (IRMF) under decision B.29/01 has been integrated into the overall funding for the DAEs support modality, to ensure ongoing support. This integration provides all DAEs with equal access to USD 1 million per entity over the four-year GCF-2 programming period. Entities previously benefiting from IRMF support will still have access to the full USD 1 million per entity, provided they exclude any overlapping work already covered through the IRMF window.

Box 6. Continued

GCF Readiness Programme

- **GCF expert placement scheme**
  The Readiness Strategy 2024-2027 aims to help countries build the institutional capacity necessary for effective and consistent engagement with the GCF. As part of this strategy, National Designated Authorities (NDAs) and focal points have the option of requesting the placement of a local expert within their offices or another relevant agency. The expert placed by the GCF serves to assist the country in their interactions with the GCF Secretariat, including, but not limited to country programming, planning readiness support over medium-term, supporting origination efforts for mainstream funding, overseeing readiness activities and climate investments, and monitoring and reporting. This initiative not only aims to enhance the immediate engagement with the GCF but also seeks to build long-term local capacity to address climate priorities effectively.
  - Budget: For Least Developed Countries (LDCs) and Small Island Developing States (SIDS), the cost will be covered by the dedicated allocation of USD 320,000.
  - Request: To initiate the process of hiring a GCF expert, NDAs should submit a request via email to their regional desk.

Readiness proposal development



(Source: GCF website, GCF Readiness Strategy 2024–2027, GCF Readiness Knowledge Bank)

Box 7.

Addressing data related challenges in the NAP process: the NAP Data Initiative

A key element in the formulation and updating of a NAP is the ability to assemble and leverage relevant data, models, tools, and knowledge systems that inform evidence-based decision-making.

Effective climate adaptation planning relies on data-driven insights, including historical and projected climate data, socio-economic and sectoral data, impact and vulnerability models, scenario planning tools, and integrated systems for cross-sectoral analysis. These resources help countries assess risks, identify adaptation options, and track resilience. However, many LDCs face challenges in accessing long-term climate data and applying these tools, which can hinder proactive, evidence-based decision-making aligned with national priorities.

- **The NAP Data Initiative:**
  The NAP Data Initiative addresses critical data-related challenges faced by many LDCs by promoting the use of open-source climate datasets and flexible modeling tools, making these resources more scalable and accessible to all countries. In addition, it provides NAP teams with accessible and user-friendly tools like RStudio, R Markdown, and GitHub to manage, analyze, share, and store data, visualization, and report creation. It promotes collaboration and facilitates the creation of dynamic, continuously updated documents that help countries stay on top of their adaptation needs. The initiative also encourages interoperability between sectoral data systems, allowing countries to link information across different sectors, like agriculture, hydrology, and health, for more integrated decision-making. NAP teams receive guidance on how to use these tools without needing specialized expertise, with technical assistance available through the LEG.

For more information, see: The Least Developed Countries Expert Group (LEG). 2024. Technical brief: The NAP Data Initiative. Available at https://unfccc.int/documents/645427.

7.4 Addressing cross-cutting issues

This section addresses some of the cross-cutting topics that can be incorporated into the NAP.

Consideration of Indigenous Peoples and local communities

Participatory and inclusive planning processes that actively involve Indigenous Peoples and local communities at every stage are essential for meaningful engagement in NAPs. This involves identifying stakeholders early, co-developing culturally appropriate consultation protocols, and establishing mechanisms for sustained engagement. Indigenous and local knowledge should be systematically integrated into climate vulnerability and impact assessments to complement scientific data and ensure locally grounded solutions. The LEG recommends developing participatory tools and guidelines for knowledge sharing to respect the rights and practices of Indigenous groups.[1] Collaboration with community-based organizations and local institutions to facilitate meaningful participation and integrate traditional knowledge into the design of adaptation strategies is crucial.

Gender responsiveness

NAPs can be made gender-responsive by conducting a gender analysis to identify how climate change affects women and men, and by embedding gender considerations into every step of the adaptation planning cycle. This includes ensuring gender balance in stakeholder consultations, addressing barriers to participation, and collecting and analyzing sex-disaggregated data. Based on the findings of gender analysis, adaptation actions could include gender-responsive indicators, budgeting, and monitoring frameworks.

The Toolkit for a Gender-Responsive Process to Formulate and Implement National Adaptation Plans (NAPs), developed by the NAP Global Network in collaboration with the LEG and the AC, provides a structured framework to systematically mainstream gender equality throughout the NAP process.[2] This guidance supports governments in designing inclusive adaptation strategies that recognize the distinct vulnerabilities, knowledge, and capacities of women, men and vulnerable communities. The toolkit outlines a step-by-step approach to gender-responsive adaptation, beginning with gender-disaggregated data collection and analysis to inform evidence-based planning. It emphasizes the critical role of inclusive stakeholder engagement, ensuring the meaningful participation of women and vulnerable communities in decision-making processes. To strengthen institutional coherence, the toolkit aligns NAPs with national gender policies and promotes gender-responsive budgeting to allocate resources equitably. Capacity-building is a central pillar of the framework, offering methodologies to train policymakers and practitioners on gender-responsive adaptation strategies. Additionally, the toolkit integrates a robust monitoring and evaluation system, featuring gender-responsive indicators to assess whether adaptation interventions reduce disparities and enhance equitable resilience.

Just transitions

The NAP is one of the tools that just transition pathways can be reflected on at a national level. Integrating just transition pathways within NAPs in a nationally determined and holistic manner can play an important role in ensuring that adaptation efforts are equitable, inclusive and leave no one behind.

Recognizing the whole-of-society nature of just transitions and ensuring that the NAP process is inclusive is important in fostering the foregrounding of just transition pathways in line with national priorities and needs. This can be achieved by ensuring meaningful participation and consultation of vulnerable groups – including workers, informal workers, women, Indigenous Peoples, local communities, children, youth – in decision-making, and by designing adaptation measures that protect livelihoods and promote social protections from risks associated with transitions. Recognizing the importance of social dialogue, the full respect for labour rights and identifying nationally determined strategies related to education, upskilling, reskilling is another way

1 UNFCCC. (2012). National Adaptation Plans: Technical guidelines for the national adaptation plan process. Least Developed Countries Expert Group. Available at: https://unfccc.int/sites/default/files/resource/NAP_technical_guidelines_EN.pdf.

2 NAP Global Network & UNFCCC. (2019). Toolkit for a Gender-Responsive Process to Formulate and Implement National Adaptation Plans (NAPs). Dazé, A., & Church, C. (Lead Authors). Winnipeg: International Institute for Sustainable Development. Available at: https://unfccc.int/sites/default/files/resource/NAP_Gender_Toolkit.pdf.

in which just transition pathways are grounded within NAPs while respecting the diverse realities and different contexts facing countries and regions.

Reflecting just transitions considerations into NAPs could also entail recognizing the multi-sectoral and whole-of economy nature of just transitions

The NAP could play an important role in supporting vulnerable communities and sectors most exposed to climate risks, while also enhancing their access to the opportunities that arise from more resilient and sustainable development in an inclusive and country driven manner.

Aligning NAPs with other national policies and strategies as appropriate and relevant, including national employment, education, and social development policies ensures that adaptation contributes not only to climate resilience but also to inclusive development.

Nature-based solutions

Integrating nature-based solutions (NbS) into NAPs involves identifying and prioritizing ecosystems that provide critical services - such as flood control, water regulation, and coastal protection - during vulnerability assessments, and selecting NbS as key adaptation options in sectors like agriculture, water, urban planning, and coastal management. Effective integration also requires, aligning adaptation measures with national policies on biodiversity and land use, securing climate finance to support implementation, and incorporating ecosystem-based indicators in monitoring frameworks.

Landscape/spatial approaches

Landscape or spatial approaches in national adaptation planning are methods that take into account the geographic, ecological, and socio-economic characteristics of a particular area - such as a watershed, forest region, coastal zone, deserts and arid regions, or urban-rural interface - to design and implement climate adaptation actions that are well-suited to that specific context. These approaches look at the bigger picture of how land, ecosystems, and human activities interact within a defined area, rather than treating adaptation actions in isolation or based only on political or administrative boundaries. By integrating these approaches in NAPs, it tailors adaptation measures to local conditions, enhances system-wide resilience instead of focusing on individual project outcomes, improves cross-sectoral coordination, and promotes nature-based solutions such as forest restoration, wetland conservation, and agroforestry. It can also be an effective way to integrate multiple strategies (climate-related and others) to a national physical development plan that ensures sustainable development in a holistic manner.

Transboundary risk and collaboration

Addressing transboundary climate risks within NAPs requires identifying and incorporating vulnerabilities that extend beyond national borders, such as shared water resources, migratory species, and regional climate impacts, into the planning process. This requires collaborative and coordinated approaches, including cross-border consultations, joint vulnerability and risk assessments, establishment of shared databases and early warning systems, and coordinated implementation strategies as appropriate and at a country-driven level. Adaptation planners could engage with regional institutions and frameworks such as river basin organizations and regional economic communities for national priorities to take into account regional or basin-wide strategies, thereby reducing the risk of fragmented or conflicting adaptation measures. Ensuring regular dialogue on planning cycles and arrangements can further strengthen resilience to shared risks and create opportunities for mutual benefits across borders.

Transboundary adaptation programmes provide an approach for coordinated actions to be taken by multiple countries or regions to address climate impacts across geographical boundaries. These programmes allow adaptation planners to address cascading impacts and shared risk to enhance resilience to climate change by implementing coordinated adaptation measures leveraging shared knowledge and resources.

The following are activities leading to the development of transboundary adaptation programmes, with real-world examples (relevant to LDCs):

1. **Securing high-level commitments and political ownership: Several regions have integrated transboundary climate risks into high-level strategies**

- The African Union Climate Change and Resilient Development Strategy and Action Plan (2022-2032) aims to coordinate transboundary and cascading risk management through RECs and basin-wide development plans.
- The 53rd Pacific Islands Forum (2024) reaffirmed a regional approach via the FRDP.
- Declarations, such as the 19th African Ministerial Conference on the Environment Declaration, have encouraged cooperation on regional frameworks and indicators.

2. **Embedding transboundary risks into policies and assessments: Efforts are being made to assess and integrate transboundary risks into national and sectoral frameworks**

- IGAD's Strategy for Sustainable and Resilient Livestock Development in View of Climate Change (2022-2037) promotes alignment of national policies and expansion of EWS to transboundary risks.
- NAPs in countries such as Sierra Leone, Chad, Cambodia, and Timor-Leste identify the importance of transboundary issues like shared ecosystems, trade exposure, and regional coordination.
- Cross-border collaboration is also reflected in mechanisms such as the India-Nepal Joint Committees on Water (Inundation and Flood Management; Joint Commission on Water Resources).

3. **Co-developing roadmaps and adaptation strategies: Stakeholders across regions are co-creating pathways for addressing shared risks.**

- A workshop with the African Union Commission and four RECs helped identify entry points for managing transboundary risks.
- Strategic roadmaps have been developed in Africa, the Hindu Kush Himalaya, and the Pacific, promoting coordinated regional planning and monitoring.

4. **Advancing joint programming and finance: Joint programming efforts are merging, linking climate action with economic development.**

- The Pacific 2050 Strategy Implementation Plan and COMESA's regional resilience framework promote regional coordination and joint interventions.
- Multi-country financing models including the AIP Transboundary PIDA Water Investment Programme in the African Union and the ADAPT-WAP9 project.

5. **Establishing tools, indicators, and MEL frameworks**

- The LDC Group is pushing for indicators on transboundary risks under the UAE Framework. The Pacific Islands align regional indicators and MEL systems through the 2050 Strategy for the Blue Pacific Continent.

Use of AI tools

Artificial intelligence (AI) tools can be leveraged throughout the NAP process to improve the accuracy and efficiency of climate risk analysis, decision support, and stakeholder engagement. AI can process large climate datasets, model future scenarios, and support geospatial mapping of climate vulnerabilities and hotspots. For example, machine learning algorithms can be used to identify trends in climate extremes and project localized impacts, while natural language processing can analyze stakeholder input from consultations. In data-scarce contexts, AI and digital innovations offer valuable support for adaptation planning, particularly when countries engage with research institutions and private-sector technology developers to access AI-enabled tools and platforms. AI can also be leveraged for scenario planning, simulating different adaptation pathways and their potential outcomes to support evidence-based decision making. AI-powered monitoring systems can track implementation progress and the effectiveness of adaptation measures in real time, enabling adaptive management approaches. Capacity building on the appropriate use of AI tools should be prioritized, with special attention to addressing potential biases in AI systems and ensuring that these tools are transparent, accountable, and designed to complement rather than replace stakeholder participation, particularly from Indigenous Peoples and local communities, whose knowledge remains invaluable. The UNFCCC's Technology Executive Committee (TEC) also recognizes AI as an emerging tool in adaptation planning and urges countries to incorporate digital solutions while ensuring ethical use, transparency, and equitable access.[3]

3 See, Annex III. Leveraging artificial intelligence in the NAP process.

Section III

- How should the updated technical guidelines be used?

8.

How should the updated technical guidelines be used?

The guidelines will be used by all stakeholders of the NAP process to national stakeholders at all relevant levels in the country. The guidelines provide the anchor to assessing progress towards the GGA targets, and should be useful in linking adaptation work to related processes under the Convention and Paris Agreement such as reporting through adaptation communications, NDCs and BTRs. In addition, the guidelines support the acceleration of NAP implementation, and enhancing countries' capacity to develop project proposals

The guidelines should be used in designing the process supporting adaptation planning and implementation within a country, and would facilitate aggregation of efforts at different levels into a national effort. The steps apply for an adaptation plan at any level, national to subnational levels, city or sector. They are primarily geared towards the national level, with a collection of actions at regional or subnational to sectoral and local levels, by a wide range of actors from government, UN organizations, private sector, local governments, and NGOs alike.

Given almost all countries are doing something on adaptation and specifically on NAPs, the guidelines are geared towards enriching that ongoing process rather than starting from scratch. A country should select relevant steps to further advance on their efforts. For example, figure 10 below provides four sample use cases:

Case I: A country that has a NAP already.

The updated guidelines can support the development of a summary of NAP priorities, along with an appended needs strategy to enable full implement of the NAP, while mapping financing modalities under the financial mechanism of the UNFCCC.

Case II: A country in an advanced stage of NAP formulation.

The country would use the updated guidelines as far as possible to address all important areas and apply the suggested outline, while placing expanded focus on the full implementation of the NAP, with a mapping to a wide range of relevant financing modalities.

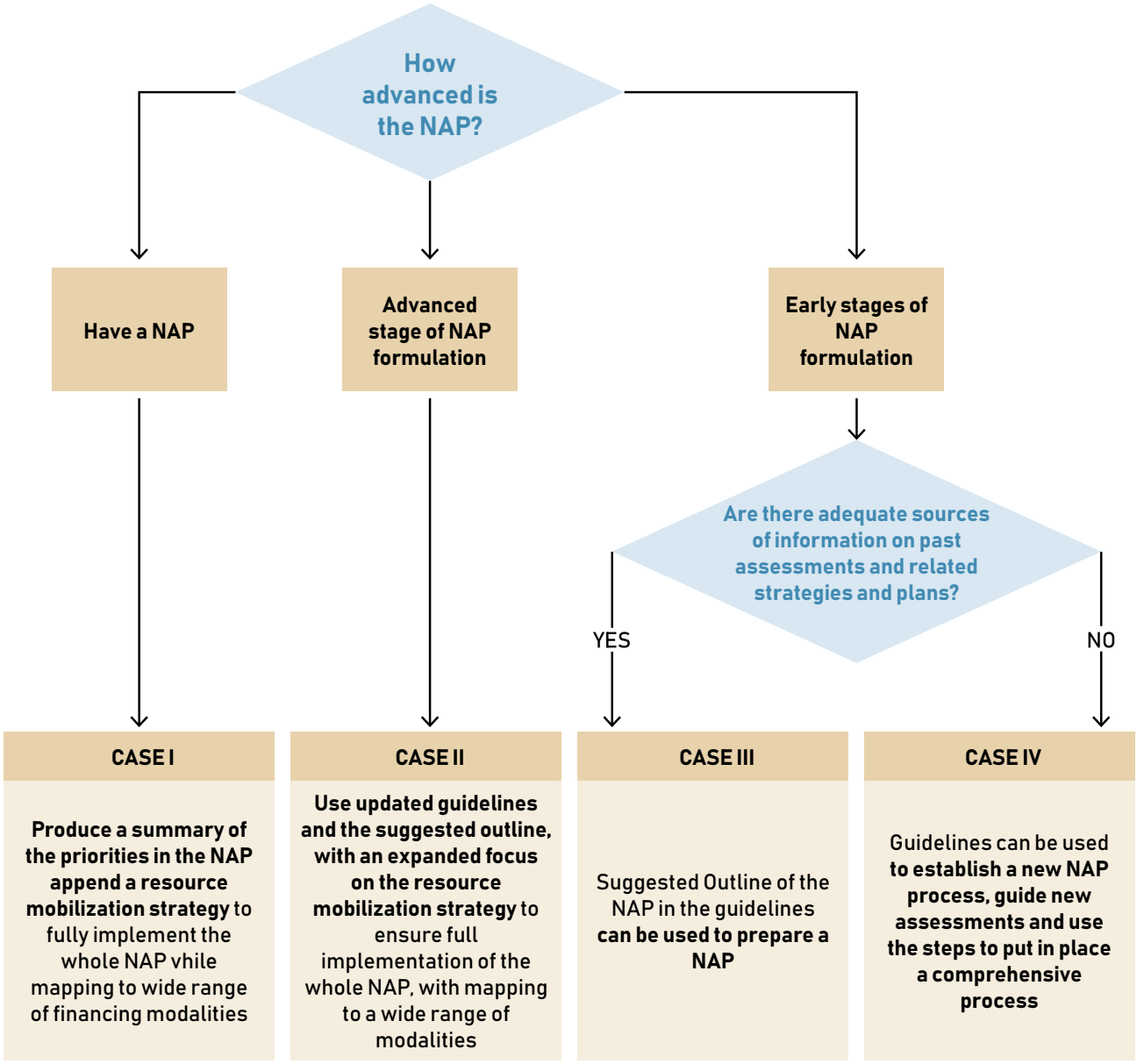
Case III: A country in the early stages of NAP formulation.

If sufficient information is available from past assessments and related strategies and plans, the suggested outline of the NAP in the guidelines would be used to prepare one, without the need for new assessments.

Case IV: A country in the early stages of NAP formulation, with limited information from past assessments or from other plans and strategies.

The guidelines can then be used to establish a new NAP process, guide new assessments and outline the steps needed to implement a comprehensive process.

Figure 10 Use cases for the updated guidelines based on the stage of formulation of the NAP in the country



Annexes

Annex 1: Decisions related to national adaptation plans

YEAR	DECISION	MANDATE
2010	Decision 1/CP.16	• *Decides* to hereby establish a process to enable least developed country Parties to formulate and implement national adaptation plans, building upon their experience in preparing and implementing national adaptation programmes of action, as a means of identifying medium- and long-term adaptation needs and developing and implementing strategies and programmes to address those needs; • *Invites* other developing country Parties to employ the modalities formulated to support the above-mentioned national adaptation plans;
2011	Decision 5/CP.17	• *Invites* Parties to provide information, through their national communications, on what measures they have undertaken and on support provided or received relevant to the national adaptation plan process; • *Encourages* least developed country Parties, to the extent possible, to provide information on their national adaptation plan process through their national communications, as well as other channels; • *Invites* United Nations organizations, multilateral, intergovernmental and other international and regional organizations to provide information on their activities to support the national adaptation plan process; • *Decides* to adopt the initial guidelines for the formulation of national adaptation plans contained in the annex to this decision; • *Agrees* that the objectives of the national adaptation plan process are as follows: (a) to reduce vulnerability to the impacts of climate change, by building adaptive capacity and resilience; (b) to facilitate the integration of climate change adaptation, in a coherent manner, into relevant new and existing policies, programmes and activities, in particular development planning processes and strategies, within all relevant sectors and at different levels, as appropriate
2011	Decision 3/CP.17	• *Decides* to designate the Green Climate Fund as an operating entity of the financial mechanism of the Convention, in accordance with Article 11 of the Convention, with arrangements to be concluded between the Conference of the Parties and the Fund at the eighteenth session of the Conference of the Parties to ensure that it is accountable to and functions under the guidance of the Conference of the Parties to support projects, programmes, policies and other activities in developing country Parties; • The Fund will support developing countries in pursuing project-based and programmatic approaches in accordance with climate change strategies and plans, such as low-emission development strategies or plans, nationally appropriate mitigation actions (NAMAs), national adaptation plans of actions (NAPAs), national adaptation plans (NAPs) and other related activities
2012	Decision 12/CP.18	• *Requests* the Global Environment Facility, as an operating entity of the financial mechanism of the Convention, through the Special Climate Change Fund, to consider how to enable activities for the preparation of the national adaptation plan process for interested developing country Parties that are not least developed country Parties, as it requested the Global Environment Facility, through the Least Developed Countries Fund, to consider how to enable activities for the preparation of the national adaptation plan process for the least developed country Parties in decision 5/CP.17, paragraph 22
2013	Decision 18/CP.19	• *Welcomes* the technical guidelines for the national adaptation plan process, which will assist the least developed country Parties in undertaking their national adaptation plan process, and which may be used by other Parties

YEAR	DECISION	MANDATE
2014	Decision 3/CP.20	• *Invites* least developed country Parties and other interested developing country Parties that are not least developed countries that may wish to do so to forward outputs, including national adaptation plan documents, and outcomes related to the process to formulate and implement national adaptation plans, to the NAP Central
2015	Decision 1/CP.21	• *Requests* the Green Climate Fund to expedite support for the least developed countries and other developing country Parties for the formulation of national adaptation plans, consistent with decisions 1/CP.16 and 5/CP.17, and for the subsequent implementation of policies, projects and programmes identified by them
	Decision 4/CP.21	• *Requests* the secretariat to prepare a synthesis report on the progress made towards the achievement of the objectives of the process to formulate and implement national adaptation plans, experiences, best practices, lessons learned, gaps and needs, and support provided and received in the process to formulate and implement national adaptation plans, taking into account information contained in national reports under the Convention, the information referred to in paragraphs 12(a) and (b) above, information from relevant events, including the NAP Expos, and information from other relevant sources
2016	Decision 6/CP.22	• *Notes* with appreciation the decision of the Board of the Green Climate Fund to approve up to USD 3 million per country through the Green Climate Fund Readiness and Preparatory Support Programme to support the formulation of national adaptation plans and/or other national adaptation planning processes
2018	Decision 8/CP.24	• *Requests* the Least Developed Countries Expert Group, within its existing mandate and workplan, to consider gaps and needs related to the process to formulate and implement national adaptation plans that have been identified through the relevant work of the Least Developed Countries Expert Group and the Adaptation Committee and how to address them, and to include relevant information thereon in its report to the Subsidiary Body for Implementation at its fifty-first session (December 2019); • *Encourages* relevant organizations to continue coordinating support related to the process to formulate and implement national adaptation plans and to continue sharing lessons learned; • *Invites* Parties to continue providing information on progress towards the achievement of the objectives of the process to formulate and implement national adaptation plans and on experience, best practices, lessons learned, gaps and needs, and support provided and received in the process to formulate and implement NAPs via the online questionnaire on NAP Central or other means as appropriate
2019	Decision 7/CP.25	• *Requests* the Adaptation Committee, through its task force on national adaptation plans, and the Least Developed Countries Expert Group to continue to include in their reports information on the gaps and needs related to the process to formulate and implement national adaptation plans identified in undertaking their mandated work and on how to address them; • *Urges* developed country Parties and invites other Parties that provide resources on a voluntary basis, United Nations organizations, specialized agencies and other relevant organizations as well as bilateral and multilateral agencies to continue to mobilize support for adaptation activities in developing country Parties; • *Invites* delivery partners of the Green Climate Fund Readiness and Preparatory Support Programme for the formulation of national adaptation plans to strengthen efforts to support developing country Parties with the goal of expediting the submission of readiness proposals to the Green Climate Fund

YEAR	DECISION	MANDATE
2021	Decision 3/CP.26	• *Requests* the Subsidiary Body for Implementation, at its sixtieth session (June 2024), to initiate the assessment of progress in the process to formulate and implement national adaptation plans referred to in decision 8/CP.24, paragraph 19, and to make recommendations on this matter for consideration and adoption by the Conference of the Parties at its twenty-ninth session (November 2024);
2022	Decision 9/CP.27	• *Requests* the Adaptation Committee and the Least Developed Countries Expert Group to continue to identify the priority gaps and needs of developing countries related to the process to formulate and implement national adaptation plans, the progress of each country in this process and any obstacles and challenges faced; • *Also requests* the Adaptation Committee and the Least Developed Countries Expert Group to enhance their work in addressing the priority gaps and needs, obstacles and challenges identified through their work referred to in paragraph 5 above and to include information thereon in their reports; • *Further requests* the Adaptation Committee and the Least Developed Countries Expert Group to organize training for developing country Parties on addressing identified gaps and needs, which could be held in conjunction with the NAP Expo, the Adaptation Forum or other events outlined in their respective work programmes
2023	FCCC/SBI/2023/10, para. 81 (conclusions)	• The SBI also requested those LDCs that have formulated NAPs to submit them to the UNFCCC as soon as possible after completion
2023	Decision 1/CMA.5	• *Calls on* Parties that have not yet done so to have in place their national adaptation plan, policies and planning processes by 2025 and to have progressed in implementing them by 2030
2023	Decision 2/CMA.5, para. 47	• *Also requests* the Least Developed Countries Expert Group to update the technical guidelines for the national adaptation plan process, reflecting the provisions of this decision as well as the best available science, including the Sixth Assessment Report of the Intergovernmental Panel on Climate Change
2024	Decision 15/CP.29	• *Welcomes* Parties' submission of national adaptation plans and invites Parties that have not done so to submit national adaptation plans and relevant strategies, including to facilitate sharing of experience, tools and approaches in relation to formulating and implementing national adaptation plans
2024	Decision 15/CP.29	• *Also invites* United Nations organizations, specialized agencies and other relevant organizations, as well as bilateral and multilateral agencies, to support the implementation of national adaptation plans in the least developed countries, drawing on the work of, and where appropriate in consultation with, the Least Developed Countries Expert Group, and, where possible, to consider establishing programmes for supporting the implementation of national adaptation plans, within their mandates, as appropriate, which could facilitate the provision of relevant financial and technical support to the least developed countries and the achievement of the goals referred to in paragraph 59 of decision 1/CMA.5
2024	Decision 3/CMA.6	• *Notes* that national adaptation plans are one of the important channels via which the targets referred to in paragraphs 9–10 of decision 2/CMA.5 could be achieved

Annex 2: Collection of systems used in addressing components of the targets of global goal on adaptation with descriptions to supplement table 4 in the main text for consideration by countries, in line with their national circumstances, priorities and needs

GGA TARGET	COMPONENTS OF THE TARGET	SYSTEM	DESCRIPTION
A. Climate-resilient water and sanitation security for all	• Reduction in climate-induced water scarcity • Enhanced climate resilience to water-related hazards • Climate-resilient water supply for all • Climate-resilient sanitation for all • Access to safe potable water for all • Affordable potable water for all	Disaster preparedness and response (linked to MHEWS)	Activities to monitor, anticipate and respond to extremes and disasters related to water, such as drought, floods, water-borne diseases. As part of early warning systems and response, activities may be distributed among different ministries and other entities
		Water supply system	The water supply system consists of infrastructure for sourcing, treating, and distributing water to users. It includes water abstraction from rivers or aquifers, treatment plants, storage facilities, and urban and rural distribution networks.
		Water use management, governance, standards and policies	This component includes laws, institutions, and policies that regulate water use, promote equitable access, and guide resource protection.
		Transboundary water agreements	These agreements manage shared watercourses across national borders, addressing joint use, planning, and conservation. This often involves binding agreements on amounts of water that can be extracted/made available to each country.
		Storm water drainage system	Storm water systems reduce flood risk and manage rainfall runoff in urban areas through drains, canals, and detention structures.
		Sewage/Sanitation system	This refers to waste collection and treatment systems that prevent environmental contamination and support public health.
		Water processing for safety	Water processing includes treatment processes to make water safe for drinking and other uses.
		Water affordability	This component defines affordability measures to ensure equitable access.

YEAR	DECISION	MANDATE	DESCRIPTION
B. Sustainable food and nutrition security for all	• Climate-resilient food and agricultural production • Climate-resilient food supply • Climate-resilient distribution of food • Sustainable and regenerative food and agricultural production • Equitable access to adequate food and nutrition for all	Food crop production	Refers to the production of staple and subsistence crops such as maize, cassava, sorghum, millet, and pulses, largely cultivated by smallholder farmers using rain-fed methods.
		Commercial crop production	Involves production of export-oriented or cash crops such as tobacco, tea, sugarcane, macadamia, and cotton, typically grown under estate or contract farming systems.
		Food supply (local, household level)	Refers to the availability of food at the community and household level through own production, local markets, and informal trade.
		Food supply (gross national level)	Refers to national availability of food through domestic production, imports, and food reserves.
		Food distribution/ supply chain	Involves storage, transport, processing, and market systems that move food from producers to consumers.
		Equitable access to food and nutrition	Description: Ensures that all population groups - especially women, children, and the poor - can access sufficient, diverse, and nutritious food.
		National food security	Refers to a country's ability to ensure that its entire population has access to adequate food at all times, even in the face of shocks or crises.
		Pastoral livestock production	Pastoral livestock production refers to extensive, often nomadic or semi-nomadic systems in which herders rely on grazing rangelands for animal feed. It is highly climate-sensitive, dependent on rainfall patterns, pasture availability, and access to water. Pastoralism is practiced mainly in arid and semi-arid regions.
		Farm livestock production	Farm-based livestock production involves rearing animals such as chickens, pigs, goats, and dairy cattle within smallholder or commercial farm settings. It is typically integrated with crop production and depends on household or local feed inputs.
		Fisheries production	Fisheries production includes capture fisheries from lakes, rivers, and oceans, as well as aquaculture. It supports nutrition and livelihoods, particularly in riparian and coastal communities.
		Forestry production	Forestry production involves the cultivation, harvesting, and sustainable use of forests for timber, fuelwood, non-timber products, and ecosystem services. It overlaps with conservation, livelihoods, and carbon sequestration goals.

YEAR	DECISION	MANDATE	DESCRIPTION
C. Climate-resilient health systems and services	• Resilience against climate change related health impacts (particularly in the most vulnerable communities) • Climate-resilient health services (particularly in the most vulnerable communities • Reducing climate-related morbidity and mortality (particularly in the most vulnerable communities)	Emergency response	The system for detecting, responding to, and managing health emergencies such as disease outbreaks, disasters, and environmental health threats.
		Health services	Core public health and medical services including prevention, diagnostics, treatment, maternal care, and disease surveillance.
		Healthcare infrastructure	Physical facilities such as hospitals, clinics, and laboratories, along with energy, water, waste, and ICT systems supporting them.
		Climate morbidity and mortality	The incidence and causes of illness and death directly or indirectly related to climate variability and change.
D. Healthy ecosystems and biodiversity	• Reduced climate impacts on ecosystems (through their management, enhancement, restoration and conservation and the protection) • Reduced climate impacts on biodiversity (through their management, enhancement, restoration and conservation and the protection) • Accelerated use of ecosystem-based adaptation and nature-based solutions (in terrestrial, inland water, mountain, marine and coastal ecosystems)	Ecosystem management (impact reduction)	Strategic planning, conservation, and sustainable use of ecosystems (e.g., wetlands, forests, grasslands) to reduce the adverse effects of climate change on both people and nature.
		Ecosystem function (resilience)	Maintaining or enhancing the ecological processes (e.g., nutrient cycling, carbon storage, water retention) that enable ecosystems to absorb shocks and recover from climate stresses.
		Biodiversity hotspots	Geographic areas with exceptionally high levels of endemic species that are severely threatened by human activity and climate change.
		General biodiversity loss reduction (habitat, rights)	Efforts to halt or reverse biodiversity decline by protecting habitats, enforcing environmental rights, and supporting sustainable land-use practices.
		Genetic biodiversity preservation - crop	Conservation and use of diverse crop varieties - including landraces and climate-resilient strains - for food security and climate adaptation.
		Genetic biodiversity preservation - plants	Protection of native plant species (medicinal, wild edible, cultural) and endemic flora through seed banks, ex-situ and in-situ conservation.
		Genetic biodiversity preservation - fish	Safeguarding genetic diversity in wild and farmed fish populations, including threatened or endemic aquatic species.
		Genetic biodiversity preservation - animal	Preserving the genetic traits of traditional livestock breeds and wild animals to retain disease resistance, climate tolerance, and cultural value.

GGA TARGET	COMPONENTS OF THE TARGET	SYSTEM	DESCRIPTION
E. Climate-resilient infrastructure and human settlements for all	• Climate-resilient infrastructure to climate change impacts to ensure basic and continuous essential services for all • Resilient human settlements to climate change impacts to ensure basic and continuous essential services for all • Minimized climate-related impacts on infrastructure and human settlements	Key infrastructure	Physical systems critical to economic and social functioning that must be climate-resilient, including roads, bridges, ports, irrigation canals, and public buildings.
		Essential services: access, shelter, energy, water, health services	Public utilities and systems that enable people to meet basic needs and cope with climate impacts.
		Living spaces	Urban and rural residential areas, including informal settlements, peri-urban zones, and communal housing environments.
		Land use and zoning	Policies and spatial planning instruments that regulate where and how land is used, developed, or conserved.
		Building designs, codes and regulations	Technical standards and legal frameworks that guide how structures are designed, built, and maintained to withstand climate risks.
F. Climate-proof poverty reduction and livelihoods, and climate-social protection measures for all	• Reduced adverse effects of climate change on poverty eradication and livelihoods • Use of adaptive social protection measures for all	The national economic engine	The overarching system that drives macroeconomic growth, including key sectors such as agriculture, mining, tourism, manufacturing, and trade.
		Poverty reduction system	A combination of strategies, institutions, and programmes aimed at lifting people out of poverty, especially those most vulnerable to climate change.
		Employment	Job creation systems, both formal and informal, across public and private sectors that provide income-generating opportunities.
		Rural livelihoods	Traditional and evolving means of earning income in rural areas, including smallholder farming, fishing, forest product harvesting, and rural enterprise.
		Social protections	Systems that provide safety nets and support to individuals and households during shocks, chronic poverty, or emergencies. Includes pensions, insurance, food aid, and disaster response support.

GGA TARGET	COMPONENTS OF THE TARGET	SYSTEM	DESCRIPTION
G. Climate-proof cultural heritage	• Protecting cultural heritage from the impacts of climate-related risks by preserving cultural practices • Protecting cultural heritage from the impacts of climate-related risks by preserving heritage sites • Protecting cultural heritage from the impacts of climate-related risks by designing climate-resilient infrastructure	Preservation of cultural heritage sites (systems)/ tangible cultural heritage protection system	This refers to the safeguarding of physical cultural assets—monuments, sacred sites, architecture, archaeological sites, and historic urban landscapes.
		Preservation of cultural practices and traditional knowledge/ intangible cultural heritage system	Includes knowledge systems, oral traditions, language, music, rituals, and local ecological practices.
		Economics of cultural heritage/ cultural economy and creative livelihoods	Refers to economic activities rooted in heritage and creativity—such as cultural tourism, crafts, performing arts, and storytelling.
		Non-economic value system of cultural heritage/ cultural infrastructure and institutions	Museums, libraries, archives, community halls, and traditional leadership structures that maintain, transmit, and steward heritage.
		Rights and access to cultural resources	This includes recognition of cultural rights, land access tied to cultural identity, and equitable participation in decisions affecting heritage.
Impact, vulnerability and risk assessment and early warning systems	• Multi-hazard early warning systems • Climate information services • Systematic observations	Mhews	MHEWS are integrated systems that monitor, predict, and communicate risks from multiple climate and weather-related hazards - such as floods, droughts, heatwaves, storms, and landslides - to enable timely action. They include hazard monitoring across multiple types (hydro-meteorological, geophysical, biological); risk mapping and vulnerability overlays; communication protocols to alert authorities and the public; and, linkage to response mechanisms and contingency plans
		Climate information services	CIS refers to the generation, tailoring, dissemination, and use of climate data and forecasts to support sector-specific decision-making in agriculture, health, water, infrastructure, and disaster preparedness.
		They include seasonal and short-term forecasts, agro-meteorological bulletins and advisories, user-centered design (e.G., Translated, locally contextualized) and can be delivered via radio, sms, extension workers, or mobile apps	These include meteorological, hydrological, and environmental observation networks that produce data for weather forecasting, climate modeling, risk analysis, and long-term trend tracking. Key features include weather stations, rain gauges, river flow sensors, satellite remote sensing; data sharing through regional/global frameworks (e.g., WMO, GCOS); and long-term datasets for climate variability, extremes, and change

GGA TARGET	COMPONENTS OF THE TARGET	SYSTEM	DESCRIPTION
Plans, processes and mainstreaming	• NAP by 2025 • Policies, plans and strategies by 2030 (targeting ecosystems, sectors, people and vulnerable communities) • Mainstreaming adaptation in strategies and plans	Submission of naps	The NAP is a national strategic plan developed under the UNFCCC framework that outlines medium- and long-term adaptation priorities, supported by risk and vulnerability assessments and aligned with development objectives. When submitted to the UNFCCC, it is posted on NAP Central.
		Integrating adaptation in strategies and plans	Mainstreaming refers to embedding climate adaptation considerations into existing and new development, sectoral, and budgetary frameworks at all levels - from national to community.
Implementation and adaptation/ resilience benefits	• Progress in implementation of NAPs, policies and strategies by 2030 • Measurable reduction in social and economic impacts	Implementation of naps	This system refers to the institutional, financial, and programmatic mechanisms by which countries execute the priorities outlined in their National Adaptation Plans. Implementation involves turning plans into funded actions across sectors, regions, and governance levels. Key subsystems include: governance and coordination such as oversight committees, interministerial taskforces, and subnational integration platforms; financing through mobilization of domestic budgets, international climate finance (e.g., GCF, GEF, LDCF, SCCF, and AF), and other relevant sources, and vertical funding transfers to local levels; project pipeline and execution through development of bankable projects, procurement, infrastructure roll-out, and service delivery linked to NAP priorities; and, capacity support through training, technical assistance, and institutional strengthening to manage adaptation delivery.
		Measurement of reduction in social and economic impacts (adaptation benefits)	This system supports the tracking and attribution of resilience outcomes resulting from adaptation interventions. It moves beyond outputs (e.g., number of wells built) to outcomes such as reduced vulnerability, fewer disruptions, and improved adaptive capacity.

GGA TARGET	COMPONENTS OF THE TARGET	SYSTEM	DESCRIPTION
Monitoring, evaluation and learning	• Monitoring, evaluation and learning system (MEL)	Design and establishment of mel system	This refers to the conceptualization, structuring, and development of a national or programmatic framework for tracking adaptation progress, effectiveness, and outcomes. It includes the development of objectives, indicators, data flows, reporting templates, alignment the GGA and the Paris Agreement. Key components may include: a theory of change outlining how adaptation activities lead to expected resilience outcomes; an indicator framework that includes input, process, output, outcome, and impact indicators across GGA thematic areas; baseline setting establishes about a reference year's conditions and adaptation capacities across sectors; alignment ensuring consistency with international guidance.
		Operationalization of mel	Once designed, the MEL system must be rolled out and embedded in institutional processes. This includes data collection, validation, analysis, reporting, and feedback mechanisms to inform decision-making and accountability. Key components may include: data systems that integrate with national statistical systems, GIS platforms, and early warning systems; roles and responsibilities as defined by mandates for data providers, evaluators, and oversight institutions; annual reporting cycles that produce NAP progress reports and inputs to the global stocktake; and, learning and feedback loops that make use of evaluation findings to adjust strategies and reallocate resources.
		Institutional capacity-building to fully implement the mel system	This involves equipping government ministries, agencies, and subnational authorities with the skills, tools, and human resources needed to implement the MEL system consistently and sustainably. Key components may include: training programs targeting M&E officers, planners, and data managers across sectors; technical guidelines in the form of operational manuals and standard operating procedures for indicator tracking and evaluation; resource mobilization including through budget allocation or donor support for MEL implementation and innovation (e.g., use of AI, remote sensing); and, institutional embedding by making MEL part of routine performance audits, budget processes, and policy reviews.

Annex 3: Template for project profiles

Including project profiles in NAPs is essential because it helps translate broad climate adaptation priorities into concrete, actionable initiatives that can attract appropriate technical and financial support. Project profiles provide clarity on activities, implementation timelines, and resource needs, making it easier for governments, donors, and development partners to coordinate efforts and invest effectively. This level of detail enhances the credibility and readiness of a country's adaptation agenda, ultimately accelerating climate resilience at both national and local levels.

Under the NAP Implementation Pipeline Development Initiative, the LEG is supporting all the LDCs to move towards successful adaptation by helping each to initiate and submit project proposals to the GCF and other sources of funding for implementing adaptation priorities associated with their NAPs.

The project ideas developed by the LDCs are compiled and updated on an ongoing basis and are available on NAP Central.[1] The compilation contains project ideas to be further developed into concept notes and project proposals to be submitted by the LDCs for funding.

Countries are encouraged to align their project profiles with the project proposal templates of the funds under the Financial Mechanism of the UNFCCC—such as the Green Climate Fund (GCF), the Adaptation Fund (AF)[2] , and the Global Environment Facility (GEF)[3] —to ensure that project ideas are presented in a format consistent with funding requirements. The Mapping of relevant sources of finance for climate change adaptation for the least developed countries (LEG, 2023) contains detailed information on different sources of funding and how to access them.[4]

To facilitate this process, table 7 below offers a simpler annotated template to help countries arrange their adaptation priorities into projects profiles.

1 Available here https://www.napcentral.org/projectcatalogues

2 The Adaptation Fund application details can be found at: https://www.adaptation-fund.org/apply-funding.

3 See, GEF-8 project identification form (PIF), https://www.thegef.org/documents/gef-8-project-identification-form-pif.

4 Available here https://unfccc.int/topics/adaptation-and-resilience/resources/publications/mapping-of-relevant-sources-of-finance-for-climate-change-adaptation-for-the-least-developed

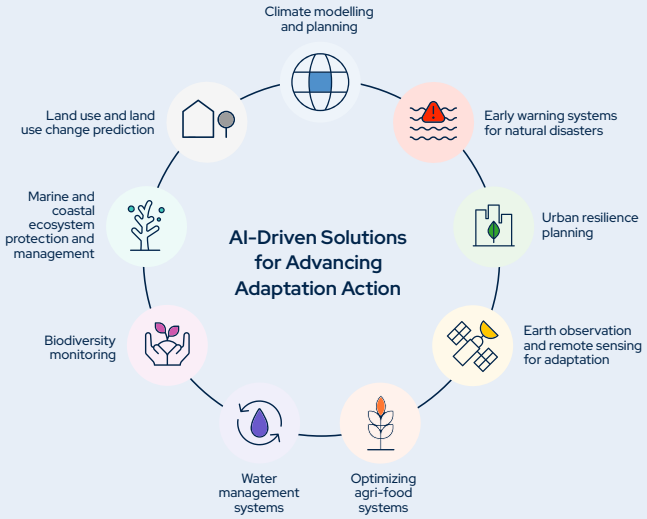
Table 7 Simple template for project profiles

Project title	Provide a concise and descriptive name that clearly reflects the core aim of the adaptation project
Theme(s) (based on GGA targets and national priorities)	Identify the relevant themes (e.g., water, agriculture, health, infrastructure, ecosystems and biodiversity, livelihoods, cultural heritage) in line with the global goal on adaptation and national priorities
Context	Describe the specific climate risks, vulnerabilities, and socio-economic conditions that justify the project. This explains the rationale for the proposed intervention.
Overall objective(s)	State the concrete, long-term goals the project seeks to achieve
Activities	Outline the specific actions or interventions to be implemented. Each activity should contribute directly to achieving the project's objectives and outcomes
Project duration	Provide an estimated schedule for project implementation
Outcomes	Describe the expected medium-term results that will be achieved if the project is implemented successfully. These should be measurable and aligned with the objectives
Indicators	List quantitative or qualitative metrics to track progress and assess the effectiveness of activities and outcomes
Estimated costs	Present a financial estimate for implementing the project, ideally broken down by major components or activities
Access to funding	Identify the anticipated funding source(s)
Implementing agency	Name the organization(s) responsible for executing the project on the ground (international, regional or national)
Responsible ministry	Indicate the government ministry (or subnational entity) overseeing the project's strategic alignment with national adaptation priorities and policy coordination

Annex 4: Leveraging artificial intelligence in the NAP process

Artificial intelligence (AI) offers powerful tools to support countries - especially LDCs and SIDS - in the formulation and implementation of NAPs. AI can enhance climate and vulnerability assessments, inform planning, strengthen monitoring, and improve the delivery of adaptation actions across key sectors. The following outlines practical entry points, supported by real-world examples, and key risks

This section, including the diagram below, is informed by the *UN TEC Information Note, "Artificial Intelligence for Climate Action in Developing Countries: Opportunities, Challenges and Risks"* [1]



AI applications for climate change adaptation

1. Enhancing risk assessment, climate information systems, and climate planning

- AI can inform the formulation of NAPs by analysing large and diverse datasets (e.g., socioeconomic, climate, geospatial) to support risk and vulnerability assessment and inform evidence-based adaptation planning.
- It can improve long-term climate forecasting, identification of high-risk areas, and helps integrate resilience into infrastructure and spatial planning.
- AI can strengthen multi-hazard early warning systems by improving the accuracy of forecasts for floods, droughts, and cyclones, supporting timely preparedness.
- For example, AI is used to predict deforestation trends in the Amazon, Madagascar, and Mexico, to enable proactive conservation efforts and guide policy responses.
- In Ethiopia, AI and satellite data identify communities at risk under the Early Warnings for All (EW4ALL) initiative.
- In Viet Nam, AI-powered remote sensing improves the detection of forest cover changes, supporting forest planning and monitoring.
- In the Caribbean, AI maps housing vulnerabilities to support urban resilience planning and disaster risk management.

2. Supporting adaptation in key sectors

- AI can assist in prioritizing adaptation actions through scenario modelling, cost-benefit analysis, and optimization algorithms.
- AI systems can play a key role in analysing climate data and predicting climate impacts such as sea-level rise and deforestation. Countries can simulate the potential outcomes of policies and projects to guide formulation of adaptation strategies under uncertainty.
- In agriculture, AI helps optimize planting schedules, monitor crop health, and predict pest outbreaks - critical for food security in LDCs and SIDS.
- In Kenya, AI-based early warning systems deliver localized crop yield forecasts to smallholder farmers in local languages.
- In Saint Kitts and Nevis, AI supports drought risk modelling for better decision-making on water use.

1 UNFCCC, Technology Executive Committee. Artificial Intelligence for Climate Action in Developing Countries: Opportunities, Challenges and Risks https://unfccc.int/ttclear/misc_/StaticFiles/gnwoerk_static/AI4climateaction/28da5d97d7824d16b7f68a225c0e3493/a4553e8f70f74be3bc37c929b73d9974.pdf.

- In coastal zones, AI combines with satellite data is used to monitor illegal fishing, coral reef health, and coastal erosion, supporting marine adaptation in SIDS.
- AI tools can monitor soil health, land degradation, and water levels, enabling timely adaptation in water and natural resource management.
- AI can predict land use and land cover changes to support integrating planning. In North Sumatra, Indonesia, it forecasts shifts from forest to plantation, informing sustainable land management.

3. Improving monitoring, evaluation, and learning

- AI can automate the collection and analysis of adaptation data, supporting MEL frameworks.
- Natural language processing (NLP) tools can extract insights from reports and community feedback, while dashboards provide real-time tracking of the implementation of adaptation projects identified in the NAP.
- In Colombia, Project Guacamaya uses AI to track deforestation and biodiversity loss via satellite imagery, sensors, and acoustic monitoring.

4. Risks and governance considerations

- Digital divides and limited access to data, infrastructure, and finance constrain AI use in some developing countries.
- Data security and inclusive design are essential to avoid misuse or reinforcement of inequities.
- AI systems have significant energy and water footprints, and if misused, may increase climate risks.
- The #AI4ClimateActionInitiative under the Technology Mechanism supports LDCs and SIDS through the AI Innovation Grand Challenge and capacity-building programmes.
- At COP28, Parties highlights the importance of addressing capacity needs and increasing awareness of AI's potential in NDCs, NAPs, and TNAs.

Table 8 AI tools and use cases for NAPs

AI TOOL EXAMPLES	USE CASE FOR NAPS
ChatGPT and Deep Research (OpenAI)	Drafting summaries, processing technical reports, extracting policy-relevant insights using natural language processing. Deep research employs "active learning" using user query supported by data or documents to conduct in-depth research and searches over 30 minutes
Claude (Anthropic)	Generating and refining documents, supporting inclusive communications for stakeholders
NotebookLM and Gemini Deep Research (Google)	Organizing and querying document repositories to support NAP research and formulation. Deep research employs "active learning" using user query supported by data or documents to conduct in-depth research and searches over 30 minutes
Climate TRACE	Monitoring GHG emissions and land use changes via AI-enhanced satellite data; relevant for MEL frameworks
FAIR Forward Early Warning AI (Kenya)	Localized crop yield prediction using weather, satellite, and soil sensor data; supports agriculture and food security
Digital Earth/Segment Anything Model	Mapping housing vulnerability in the Caribbean using drone imagery and deep learning for urban resilience
AI Forest Cover Detector (Viet Nam)	Neural networks and satellite images to track forest change and degradation for land use planning and conservation
Drought Forecasting Tool (Saint Kitts and Nevis)	Combines weather and water datasets for proactive water management in drought-prone SIDS
Project Guacamaya (Colombia)	Combines satellite, camera traps, and acoustic sensors to monitor biodiversity and deforestation
AI Land Use Model (Indonesia)	Predicts land use change using spatial data and ANN-based cellular automata for sustainable resource planning

Annex 5: Template on NAP finance mapping based on windows under the UNFCCC and PA funds

SOURCES OF FINANCE	OBJECTIVE	FUNDING INSTRUMENTS AND ACCESS MODALITIES	APPLICABLE ADAPTATION SECTORS AND ACTIVITIES
List the funding entity(ies) or mechanisms	*Describe the main goal or purpose for which this source is needed*	*Types of financial tools (grants, loans, bonds, equity, guarantees, venture capital/crowd funding, public-private-partnerships, payment for ecosystem services, etc.) and how they will be accessed (direct access, through international accredited entity, project proposals, etc.)*	*Indicate the specific NAP priority sectors (e.g., agriculture, water) or activities the funding will support*
Financial Mechanism under the UNFCCC			
Green Climate Fund			
Global Environment Facility			
Least Developed Countries Fund (LDCF)			
Special Climate Change Fund (SCCF)			
Adaptation Fund			
Other relevant sources			

Annex 6: Examples of available technical support and assistance

Technical support and assistance is provided by a range of constituted bodies and UNFCCC and Paris Agreement programmes and many organizations and entities. Details on the activities undertaken are given in annual progress reports on NAPs produced by the LEG.[1] Below is a non-exhaustive list of available support as contained in the 2024 annual progress report.[2]

Support by the UNFCCC constituted bodies and UNFCCC programmes

Primary technical support and guidance is provided through the LEG[3] and the AC[4], including through their subgroups (technical working group on NAPs[5], LDC Roster of Experts[6], and related initiatives for the LEG, and for the AC, through its task force on NAPs[7]).

The CGE[8], the PCCB[9], the SCF[10], the TEC[11] and the WIM Executive Committee[12] also support countries in various aspects of the process to formulate and implement NAPs, and such activities are also carried out under the LCIPP[13] and the NWP[14].

UN4NAPs[15], launched by the UNFCCC secretariat in 2021, is a United Nations technical backstopping initiative designed to rapidly respond to technical requests from the LDCs and SIDS that are in the process of formulating and implementing NAPs. It offers a platform for countries to communicate their needs for technical assistance, which are immediately shared with relevant partners from a roster of more than 55 participating United Nations agencies and intergovernmental organizations.

The UNFCCC and PA funds (GCF, LDCF, SCCF, GEF, and AF) provide funding for technical support and technical assistance, in addition to their funding for adaptation projects and programmes.[16]

Technical assistance related to technology is also provided through CTCN[17], while technical assistance related to loss and damage is provided through the Santiago network[18].

1 Reports of the LEG, available at https://unfccc.int/LEG#reports.

2 FCCC/SBI/2024/12, available at: https://unfccc.int/LEG#reports.

3 LEG, available at https://unfccc.int/LEG.

4 AC, available at https://unfccc.int/Adaptation-Committee.

5 NAP Technical Working Group, available at https://unfccc.int/topics/adaptation-and-resilience/workstreams/national-adaptation-plans-naps/nap-technical-working-group

6 LDC Roster of Experts on NAPs, available at https://unfccc.int/process-and-meetings/bodies/constituted-bodies/least-developed-countries-expert-group/ldc-roster-of-experts-on-naps.

7 NAP Task Force, available at https://unfccc.int/process-and-meetings/bodies/constituted-bodies/adaptation-committee-ac/AC-NAPTF.

8 CGE, available at https://unfccc.int/CGE.

9 PCCB, available at https://unfccc.int/pccb_activities.

10 SCF, available at https://unfccc.int/SCF.

11 TEC, available at https://unfccc.int/ttclear/tec.

12 WIM ExCom, available at https://unfccc.int/wim-excom.

13 LCIPP, available at https://lcipp.unfccc.int/homepage.

14 NWP, available at https://unfccc.int/topics/adaptation-and-resilience/workstreams/the-nairobi-work-programme-unfccc-knowledge-to-action-hub-on-adaptation-and-resilience.

15 UN4NAPs, available at https://unfccc.int/UN4NAPs.

16 UNFCCC and PA funds, available at https://unfccc.int/process-and-meetings/bodies/funds-and-financial-entities.

17 CTCN, available at https://www.ctc-n.org/.

18 Santiago Network, https://unfccc.int/santiago-network.

Support by relevant organizations and entities

The NAP Global Network[19] supports countries in undertaking activities relevant to the process to formulate and implement NAPs, such as on integrating gender and social inclusion considerations into adaptation action, developing and/or strengthening MEL on adaptation, engaging the private sector in adaptation, developing NAP communication strategies, linking adaptation planning at the national and subnational level, developing adaptation financing, developing methodologies for costing adaptation priorities, enhancing sectoral integration of adaptation, integrating ecosystem-based adaptation approaches into NAPs, and aligning NAPs with peacebuilding processes.

SCALA[20], co-led by FAO and UNDP supports countries to translate their NDCs and NAPs into transformative climate action in land use and agriculture.

IKI funds projects that focus on supporting the process to formulate and implement NAPs. Its implementing organizations include CARE[21], FAO[22], GIZ[23], the International Institute for Sustainable Development[24], the International Union for Conservation of Nature[25], the Potsdam Institute for Climate Impact Research[26], UNDP and WMO, as well as local organizations.

The Group on Earth Observations (GEO)[27] provides technical support on integrating earth observation into the process to formulate and implement NAPs, specifically as it relates to agriculture and food security, under its flagship initiative the Group on Earth Observations Global Agricultural Monitoring (GEOGLAM)[28].

The UNCDF[29], under Local Climate Adaptive Living (LoCAL) Facility[30] and via its other finance solutions, promotes the channelling of climate finance to local government authorities in the LDCs and other developing countries that are particularly vulnerable to the effects of climate change for implementing NAP-aligned local adaptation actions in support of building climate-resilient communities and local economies.

UNDP[31] supports the formulation of NAPs and helps countries in accessing GCF readiness funding for formulating their NAPs. UNDP, together with partners, support the United Nations Secretary-General's Adaptation Pipeline Accelerator initiative. Under the United Nations system-wide effort Climate Promise 2025[32], UNDP helps countries submit their third NDCs, ensuring their alignment with NAPs, and accelerating the NDCs implementation.

UNDRR[33] promotes and pursues a comprehensive risk management approach to enable countries to effectively integrate climate change adaptation and disaster risk reduction efforts. It provides technical assistance for planning and implementing disaster risk reduction and adaptation actions.

19 NAP Global Network, available at https://napglobalnetwork.org/.
20 SCALA, available at https://www.fao.org/in-action/scala/en.
21 CARE, available at https://www.care.org/.
22 FAO, available at https://www.fao.org/home/en/.
23 GIZ, available at https://www.giz.de/en/html/index.html.
24 International Institute for Sustainable Development, available at https://www.iisd.org/.
25 International Union for Conservation of Nature, available at https://iucn.org/.
26 Potsdam Institute for Climate Impact Research, available at https://www.pik-potsdam.de/en/home.
27 GEO, available at https://earthobservations.org/.
28 GEOGLAM, available at https://earthobservations.org/geoglam.php.
29 UNCDF, available at https://www.uncdf.org/.
30 UNCDF's LoCAL, available at https://www.uncdf.org/local/homepage.
31 UNDP, available at https://www.undp.org/.
32 UNDP Climate Promise, available at https://climatepromise.undp.org/.
33 UNDRR, available at https://www.undrr.org/.

UNEP[34] supports countries in formulating their NAPs and accessing GCF readiness funding for NAPs and in accessing LDCF funding, especially on ecosystem-based adaptation and nature-based solutions in NAPs.

UNICEF[35] helps countries recognize the specific and heightened vulnerabilities of children to climate change impacts and their meaningful participation in climate action in order to prioritize the implementation of child-responsive adaptation measures.

WHO[36] provides technical assistance to countries for formulating the health component of their NAPs.

WMO[37] supports developing countries in accessing and using climate science information for adaptation, including by supporting project implementation under Early Warnings for All[38] and the Global Basic Observing Network[39]. It also assists developing countries in mobilizing financial and technical resources for collecting weather and climate information.

For up-to-date information on available support, visit NAP Central[40], the annual progress report on NAPs[41], and webpages of each of the organizations and entities mentioned above. Each of them produces relevant resource materials that are supplementary to the NAP technical guidelines[42].

34 UNEP, available at https://www.unep.org/.

35 UNICEF, available at https://www.unicef.org/.

36 WHO, available at https://www.who.int/.

37 WMO, available at https://wmo.int/.

38 Early Warnings for All Initiative, available at https://earlywarningsforall.org/site/early-warnings-all.

39 Global Basic Observing Network (GBON), available at https://wmo.int/activities/global-basic-observing-network-gbon.

40 NAP Central, available at http://napcentral.org.

41 NAP progress reports, available at https://unfccc.int/national-adaptation-plans#reports.

42 Supplementary materials to the NAP technical guidelines, available at https://napcentral.org/supplementary-materials-library.

About the Least Developed Countries Expert Group

The LEG was established in 2001 as part of the support offered to the LDCs under the United Nations Framework Convention on Climate Change. As a result of its mandate, the Group has developed and implemented a wide range of adaptation-related activities over the years to provide technical guidance and support to the LDCs. Its mandate also includes providing the LDCs with technical guidance and advice on the process to formulate and implement NAPs, as well as on preparing and implementing national adaptation programmes of action and implementing the LDC work programme under the UNFCCC. The LEG is also mandated to provide technical guidance and advice on accessing funding from the GCF for the process to formulate and implement NAPs, in collaboration with the GCF secretariat.

The work programme of the LEG is implemented in a variety of ways, such as through provision of technical guidance and advice, preparation of technical guidelines, technical papers, training activities and workshops, conduct of expert meetings, organization of NAP Expos, conduct of case studies, capturing and sharing of experience, best practices and lessons learned, maintenance of NAP Central, monitoring of progress, effectiveness and gaps, collaboration with other bodies, programmes and organizations, and promotion of coherence and synergy in adaptation planning and implementation.

The LEG is composed of 17 members: 13 from LDC Parties and 3 from Annex II Parties. Below are the current members of the LEG as at 29 July 2025.

- Mr. Idrissa Semde, Burkina Faso (Africa)
- Mr. Christian Araújo, Canada (Developed Country Party)
- Mr. Kenel Delusca, Haiti (SIDS)
- Ms. Orla Kilcullen, Ireland (Developed Country Party)
- Mr. Mokoena France, Lesotho (LDCs) – Vice Chair
- Mr. Benon Yassin, Malawi (Africa)
- Mr. Buddi Sagar Poudel, Nepal (Asia)
- Mr. Maaike Willemsen, The Netherlands (Developed Country Party)
- Mr. Gabriel Kpaka, Sierra Leone (LDCs)
- Mr. Payai Manyok John, South Sudan (LDCs)
- Ms. Hana Hamadalla Mohamed, Sudan (Africa)
- Mr. Adao Soares Barbosa, Timor- Leste (Asia) - Chair and Lusophone rapporteur
- Ms. Mery Yaou, Togo (Africa) - Francophone rapporteur
- Mr. Jamie Ovia, Tuvalu (SIDS)
- Mr. Fredrick Manyika, United Republic of Tanzania (Africa)
- Mr. Richard Mfumu Lungu, Zambia (LDCs) - Anglophone rapporteur

More information about the LEG, including its work programme, is available at https://unfccc.int/LEG.