



REPUBLIC OF ANGOLA

# NATIONAL ADAPTATION PLAN 2026 - 2035



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National Adaptation Plan for Angola

November 2025

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TNC  
OTCHIVA  
ADPP  
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BAD  
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## MESSAGE FROM HIS EXCELLENCE THE PRESIDENTE

Climate change is one of the defining challenges of the twenty-first century. No nation, regardless of its level of development, is immune to these consequences. For Angola, the increasing frequency and intensity of droughts, floods, coastal erosion, ecosystem degradation, water scarcity, and the growing pressures on food security, public health, infrastructure, biodiversity, and livelihoods require decisive, coordinated, and forward-looking action.

It is within this context that the **National Adaptation Plan (NAP) of Angola** assumes strategic importance for the future of our nation.

This Plan is far more than a technical document. It represents a national vision for safeguarding our people, strengthening our economy, protecting our natural capital, and enhancing Angola's resilience to climate change, while ensuring that sustainable development continues to improve the well-being of present and future generations.

Through this National Adaptation Plan, the Republic of Angola reaffirms its unwavering commitment to the **United Nations Framework Convention on Climate Change (UNFCCC)**, the **Paris Agreement**, the **2030 Agenda for Sustainable Development**, and **Africa's Agenda 2063**. The Plan translates into action the priorities established in Angola's **National Climate Change Strategy (ENAC 2022–2035)** and the country's **Nationally Determined Contribution (NDC)**, while aligning our national adaptation efforts with the **Global Goal on Adaptation** adopted under the Paris Agreement.

Adaptation to climate change is no longer an option; it has become a national imperative. Investing in resilience today means protecting lives, reducing economic losses, strengthening food and water security, safeguarding critical infrastructure, conserving

biodiversity, promoting climate-resilient communities, and creating new opportunities for sustainable economic growth, innovation, and decent employment.

This Plan reflects our conviction that sustainable development can only be achieved through strong institutions, sound governance, scientific knowledge, and the active participation of all sectors of society. The Government of Angola will continue to promote an integrated, whole-of-government and whole-of-society approach, engaging public institutions, provincial and local authorities, the private sector, academia, research institutions, civil society, development partners, and local communities in implementing climate adaptation actions across the country.

Angola will also continue to advocate for stronger international solidarity in addressing climate change. African countries have contributed only a small fraction of global greenhouse gas emissions, yet they remain among the most vulnerable to climate impacts. This reality underscores the urgent need for developed countries to fully honour their commitments regarding climate finance, technology transfer, capacity building, and equitable access to adaptation resources.

At the same time, Angola is fully committed to assuming its own responsibilities. We will continue strengthening climate governance, investing in resilient infrastructure, expanding early warning systems, promoting nature-based solutions, advancing scientific research, fostering innovation, and mobilizing public and private investment to build a climate-resilient and diversified economy.

I am confident that Angola's National Adaptation Plan will mark a new chapter in our country's response to climate change. It provides a clear roadmap for integrating climate resilience into national development planning and for safeguarding our country's long-term prosperity, environmental sustainability, and social well-being.

I wish to express my sincere appreciation to the Ministry of Environment, all Government institutions, provincial authorities, the scientific community, academia, civil society organizations, development partners, and international organizations whose expertise, commitment, and collaboration made the preparation of this Plan possible.

I invite all Angolans, as well as our regional and international partners, to join us in implementing this ambitious national agenda. Climate resilience can only be achieved through partnerships, solidarity, innovation, and shared responsibility.

By building a more climate-resilient Angola, we are also contributing to a stronger Africa and to a safer, more sustainable, and more prosperous world for all.

**João Manuel Gonçalves Lourenço**  
**President of the Republic of Angola**

## FOREWORD BY HER EXCELLENCE THE MINISTER

It is with a profound sense of responsibility and an unwavering commitment to Angola's future that I have the honour of presenting **Angola's National Adaptation Plan (NAP)**, a strategic framework that sets out our national vision for strengthening climate resilience, protecting vulnerable populations, and advancing sustainable, inclusive, and climate-resilient development.

Climate change is one of the defining challenges of our time. In Angola, its impacts are increasingly evident through prolonged droughts, devastating floods, coastal erosion, ecosystem degradation, food insecurity, water scarcity, and increasing pressure on public health, infrastructure, and livelihoods. These challenges demand a coordinated national response founded on sound science, effective governance, innovation, and strong partnerships across all sectors of society.

The National Adaptation Plan represents a major milestone in Angola's climate action journey. It translates the vision of the National Climate Change Strategy (ENAC 2022–2035) into concrete action, reinforces Angola's commitments under the **United Nations Framework Convention on Climate Change (UNFCCC)** and the **Paris Agreement**, and complements the implementation of the country's **Nationally Determined Contribution (NDC)**. Furthermore, it aligns Angola's adaptation agenda with the **Global Goal on Adaptation**, contributing to global efforts to build resilience and safeguard sustainable development.

This Plan establishes a comprehensive framework to enhance resilience across key sectors, including agriculture and food systems, fisheries, water resources, coastal zones, health, infrastructure, forests, ecosystems and biodiversity, and disaster risk management. At the same time, it promotes a cross-sectoral approach by integrating climate adaptation into national and sub-national planning, strengthening institutional capacity, mobilizing climate finance, fostering technological innovation, enhancing climate information systems, and encouraging evidence-based decision-making.

We firmly believe that effective adaptation must be people-centered. For this reason, the National Adaptation Plan embraces the principles of social inclusion, gender equality, youth empowerment, the recognition of Indigenous Peoples and local communities, and special consideration for children, persons with disabilities, and other vulnerable groups, ensuring that no one is left behind in Angola's climate resilience journey.

The successful implementation of this Plan will require the collective efforts of Government institutions, the private sector, academia, civil society organizations, local authorities, development partners, and communities across the country. Building climate resilience is not solely an environmental imperative—it is a national development priority and a strategic investment in economic prosperity, social well-being, food and water security, and environmental sustainability for present and future generations.

The Ministry of Environment remains fully committed to leading this process through transparent, inclusive, and science-based climate governance. We will continue strengthening inter-institutional coordination, promoting policy coherence, and mobilizing the financial, technical, and technological resources necessary to ensure the effective implementation of this National Adaptation Plan.

I wish to express my sincere appreciation to all national institutions, technical experts, development partners, international organizations, academia, civil society organizations, and local communities whose dedication and valuable contributions made this Plan possible. Their collective expertise and commitment reflect Angola's shared determination to build a more resilient, sustainable, and prosperous future.

I invite all Angolans and our international partners to embrace this National Adaptation Plan as a shared national platform for action. By investing in adaptation today, we are protecting lives, strengthening our economy, preserving our natural heritage, and creating new opportunities for sustainable development.

Together, we can build a climate-resilient Angola—one that is better prepared to face the challenges of climate change while ensuring a prosperous, inclusive, and sustainable future for all.

**Ana Paula de Carvalho**  
**Minister of Environment**  
**Republic of Angola**

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## Acronyms and Abbreviations

|        |                                                                     |
|--------|---------------------------------------------------------------------|
| AfDB   | African Development Bank                                            |
| ANR    | National Waste Agency                                               |
| AR6    | Sixth Assessment Report                                             |
| BCLME  | Benguela Current Large Marine Ecosystem                             |
| CAIP   | Climate Adaptation Investment Plan for Angola                       |
| CBD    | Convention on Biological Diversity                                  |
| CETAC  | Center for Tropical Ecology and Climate Change                      |
| CGIAR  | Consortium of International Agricultural Research Centers           |
| CI     | Conservation International Foundation                               |
| CNACB  | National Commission on Climate Change and Biodiversity              |
| CTCN   | Climate Technology Center and Network                               |
| DNEA   | National Directorate of Environmental Education                     |
| DNA    | National Directorate of Environment                                 |
| DNACDS | National Directorate for Climate Action and Sustainable Development |
| DNTA   | National Directorate for Environmental Technologies                 |
| ENAC   | National Climate Change Strategy                                    |
| EDTL   | National Long-Term Development Strategy                             |
| EU     | European Union                                                      |
| FADA   | Angolan Agricultural Development Support Fund                       |
| FAO    | Food and Agriculture Organization                                   |
| FNA    | National Environmental Fund                                         |
| FSDEA  | Sovereign Fund of Angola                                            |
| GCF    | Green Climate Fund                                                  |
| GEF    | Global Environment Facility                                         |
| GGA    | Global Goal on Adaptation                                           |
| INBAC  | National Institute for Biodiversity and Conservation Areas          |
| INGA   | National Institute for Environmental Management                     |
| JICA   | Japan International Cooperation Agency                              |
| Indc   | Intended Nationally Determined Contribution                         |
| ICZM   | Integrated Coastal Zone Management plan                             |
| IFAD   | International Fund for Agricultural Development                     |
| IFC    | International Finance Corporation                                   |

|          |                                                                     |
|----------|---------------------------------------------------------------------|
| ILO      | International Labour Organization                                   |
| IPCC     | Intergovernmental Panel on Climate Change                           |
| LDCF     | Least Developed Country Fund                                        |
| LEG      | Least Developed Countries Expert Group                              |
| MDBs     | Multilateral Development Banks                                      |
| MEL      | Monitoring, Evaluation and Learning                                 |
| MEP      | Ministry of Economy and Planning                                    |
| MINAMB   | Ministry of Environment                                             |
| MINAGRIF | Ministry of Agriculture and Forestry                                |
| MINFIN   | Ministry of Finance                                                 |
| MINSA    | Ministry of Health                                                  |
| MINEA    | Ministry of Energy and Water                                        |
| MINOPUH  | Minister of Public Works and Urbanization and Housing               |
| NAP      | National Adaptation Plan                                            |
| NAPA     | National Adaptation Programme of Action                             |
| NbS      | Nature-based Solutions                                              |
| NCCAP    | National Climate Change Adaptation Plan                             |
| NC       | National Communication                                              |
| NDC      | Nationally Determined Contribution                                  |
| NDCASD   | National Directorate for Climate Action and Sustainable Development |
| NDP      | National Development Plan                                           |
| NWP      | National Water Plan                                                 |
| UNDP     | United Nations Development Programme                                |
| UNEP     | United Nations Environment Programme                                |
| UNHCR    | United Nations High Commissioner for Refugees                       |
| UNFCCC   | United Nations Framework Convention on Climate Change               |
| UNICEF   | United Nations Children's Fund                                      |
| USD      | United States Dollars                                               |
| TNC      | Nature Conservancy                                                  |
| PAAC     | Angolan Fund for Climate Change                                     |
| PWD      | People With Disabilities                                            |
| RCP      | Representative Concentration Pathway                                |
| SDGs     | Sustainable Development Goals                                       |
| WFP      | World Food Programme                                                |
| WHO      | World Health Organization                                           |

|     |                                |
|-----|--------------------------------|
| WMO | World Meteorology Organization |
| WWF | World Wildlife Fund, Inc.      |



sectors—compound social vulnerability. Yet, Angola also holds significant potential to shift toward a more resilient and diversified economy. Investments in climate-smart agriculture, integrated water resources management (i.e., multipurpose water systems for irrigation and communities, etc.), and sustainable land management can strengthen rural livelihoods and reduce reliance on imports. Similarly, expanding renewable energy—particularly hydropower, solar, and wind—alongside cleaner natural gas use offers opportunities to enhance energy access while cutting emissions. Nature-based solutions, such as watershed rehabilitation and coastal protection, further present cost-effective means to safeguard ecosystems and communities against climate shocks.

**Over the past five years, Angola has made meaningful progress in developing a stronger policy foundation for climate adaptation action.** The approval of the *Estratégia Nacional para as Alterações Climáticas* (ENAC) 2022–2035 established a long-term vision for integrating climate change into national planning. It has a guiding objective of “Angola adapted to the impacts of climate change and with low-carbon development that also contributes to the eradication of poverty”, and adaptation is one of the five mutually reinforcing pillars for tackling climate change. The ENAC outlines coordinated adaptation and mitigation measures across key sectors, supported by clearer institutional mandates and improved monitoring and reporting mechanisms.

Angola has also strengthened its international commitments through an updated Nationally Determined Contribution 3.0 (NDC), which aligns with ENAC and details sectoral actions in agriculture, water resources (including water cycle), energy, and coastal management. Together, these frameworks provide a more coherent platform for mobilizing resources, coordinating ministries, and embedding climate priorities into the country’s broader development agenda.

**As the cornerstone of Angola’s national climate response, the National Adaptation Plan (NAP) provides a strategic framework for building resilience and mainstreaming adaptation into its development agenda.** The NAP will achieve climate resilience through the following key approaches:

- **Contributing to the securitization and diversification of the national economy** through providing a twofold approach: on the one hand, the NAP manages climate-related risks by identifying, reducing, and responding to specific hazards and vulnerabilities; on the other hand, it strives to maximize adaptation co-benefits and opportunities for sustainable development, as guided by the 2025 UNFCCC NAP Guidelines.
- **Operationalizing ENAC’s adaptation priorities and the adaptation priorities in the NDC 3.0** through concrete, costed, and time-bound interventions and sectoral-specific solutions, including enhancing early warning systems, promoting integrated water resource management (IWRM), expanding small-scale storage, and resilient irrigation, supporting climate-smart agricultural practices and risk financing tools.
- **Strengthening institutional coordination and ability to attract and secure financing** from a wider variety of channels and modalities, to accelerate the achievement of its adaptation goals. Serving as a blueprint, this NAP will establish a governance framework that defines the clear roles, responsibilities, and functions of each stakeholder involved in adaptation actions. It also outlines strategies for mobilizing financial resources from both domestic and international sources to achieve adaptation goals.

Through these measures, Angola’s NAP seeks to transform adaptation from a project-based response into a national development priority, helping build long-term resilience for people, ecosystems, and the economy.

## 2 Vision, Goals and Objectives.

### 2.1 Strategic Vision (Angola National Adaptation Goal)

In line with the National Climate Change Strategy (ENAC) 2022-2035, Angola's NAP has a strategic vision of "Angola adapted to the impacts of climate change and with low-carbon development that also contributes to the eradication of poverty."<sup>3</sup> This serves as the foundation for the overarching national adaptation goal for Angola, which aims to drive strategic planning and implementation of adaptation that supports national development priorities.

Angola's National Adaptation Plan (NAP) operationalizes, aligns with, and builds upon the ENAC 2022–2035 framework by translating its strategic priorities into concrete sectoral adaptation actions, integrating them into national and local planning processes, coordinating implementation across relevant ministries and provinces, strengthening institutional capacities, and mobilizing domestic and international climate finance, appropriate technology and capacity building for both the ENAC and itself.

### 2.2 Adaptation Objectives and Targets for Angola

To achieve the national adaptation goal while delivering development priorities for the country, Angola identifies nine priority sectors and areas for implementing adaptation that address key risks, hazards, impacts, and vulnerabilities to achieve resilience of people, economy, and ecosystems to climate change impacts. These are: (1) agriculture and food systems; (2) fisheries; (3) coastal zones; (4) water resources; (5) human health; (6) forests, ecosystems and biodiversity; (7) infrastructure; (8) disaster risk preparedness and management; and (9) cross-cutting considerations. Angola will implement adaptation targets for each priority sector to drive action (see Table 1). The nine targets are the adaptation objectives for NAP 1.0 for Angola.

The nine targets align with ENAC's five objectives. The implementation of adaptation in each sector aspires to achieve the target, and the targets are crucial for providing strategic guidance for resource mobilization and allocation. The priority sector and area targets draw inspiration from the global goal on adaptation (GGA) targets in the UAE Framework for Global Climate Resilience (decision 2/CMA.5). This approach ensures that Angola's adaptation planning and implementation align with the updated technical guidelines under NAP 3.0 and global adaptation efforts. This will enhance Angola's policy coherence with global efforts and will "provide an opportunity to ensure that NAPs serve as the investment plan for adaptation and resilience designed to tap into the widest sources and modalities of adaptation finance."<sup>4</sup>

The implementation of the targets should ensure that cross-cutting elements, including gender and social inclusion are prioritized through:

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<sup>3</sup> The Strategic Vision of Angola's NAP is aligned with the strategic vision in Angola's *National Strategy for Climate Change 2022-2035*(*Estratégia Nacional para as Alterações Climáticas 2022-2035*, ENAC)

<sup>4</sup> UNFCCC Least Developed Countries Expert Group, *NAP Technical Guidelines: Updated Version, 26 July 2025 (Final Draft)* (Bonn: UNFCCC Secretariat, 2025), 12, [https://unfccc.int/sites/default/files/resource/Draft\\_Updated\\_NAP\\_technical\\_guidelines\\_July\\_2025.pdf](https://unfccc.int/sites/default/files/resource/Draft_Updated_NAP_technical_guidelines_July_2025.pdf).

- Strengthening women 'sand youth's roles across the value chains to enhance livelihoods and ensure food and water security for all.
- Strengthen the leadership of women and men in community-based resource governance, and ensure that women gain secure rights, equitable benefits, and decision-making power.
- Integrating gender-responsive and socially inclusive design and planning that prioritizes safety, accessibility, and the active participation of women, men and vulnerable groups in decision-making.

Table 1: Angola's priority sector targets and the corresponding global goal on adaptation targets.

| Angola Adaptation Priority Sector | Angola Priority Sector Targets                                                                                                                                                                                                                                                                                         | Corresponding GGA Target in the UAE Framework for Global Climate Resilience                                                                                                                                                                                                                                                                                             |
|-----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                   | By 2035                                                                                                                                                                                                                                                                                                                | By 2030 and progressively beyond                                                                                                                                                                                                                                                                                                                                        |
| Agriculture and Food Security     | Reducing yield loss from climate impacts of critical crops by 80% through the implementation of adaptation that promotes climate-resilient agricultural production, supply and distribution of food to achieve sustainable development in the sector, towards equitable access to adequate food and nutrition 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;                                                                                                                                            |
| Fisheries                         | Significantly advancing the implementation of adaptation that promotes climate-resilient and sustainable fish harvesting, reducing climate change impacts on maximum catch potential to increase the Gross Domestic Product (GDP) contribution by 10% of the fisheries sector to the economy.                          | No specific fisheries sector GGA target, the relevant applicable target is for the agriculture and food systems theme: 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;                     |
| Coastal Zones                     | Ensuring that coastal zones planning fully integrates climate risk impacts and vulnerability assessments, implementing adaptation that protects all people in coastal zones, including key infrastructure for the economy to climate change hazards and impacts, including coastal flooding and sea level rise.        | No specific coastal zones sector GGA target, the relevant applicable target is for the infrastructure and human settlement theme: 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. |
| Water Resources                   | Significantly reduce climate-induced water scarcity, integrate IWRM to support groundwater recharge measures that enhance the water sector resilience to drought and floods, increase access to safe and affordable potable water and climate resilient sanitation 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;                                                                                                                 |
| Human Health                      | Achieve 100% monitoring and prevention of climate-related and including malaria, vaccine-preventable diseases for all to attain                                                                                                                                                                                        | Attaining resilience against climate change related health impacts, promoting climate resilient health services, and                                                                                                                                                                                                                                                    |

|                                           |                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                           | resilience against climate change-related health impacts, safeguarding maternal and reproductive health, and guaranteeing equitable access and participation, towards zero climate-related morbidity and mortality, particularly for children, people with disabilities and the elderly in the most vulnerable communities. | significantly reducing climate-related morbidity and mortality, particularly in the most vulnerable communities;                                                                                                                                                                                                                                                                                                                                                           |
| Forests, Ecosystems and Biodiversity      | Reduce climate impacts on ecosystems and biodiversity and accelerate the use of integrated approaches, ecosystem-based adaptation and nature-based solutions, including through their management, enhancement, restoration and conservation and the protection of coastal ecosystems and deserts.                           | 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                                                                                                                                                         |
| Infrastructure                            | Increase the resilience of key infrastructure and human settlements to climate change impacts to ensure basic and continuous essential services for all, minimizing climate-related impacts on infrastructure and human settlements.                                                                                        | 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.                                                                                                                                                                                                                                      |
| Disaster Risk Preparedness and Management | All sector up-to-date assessment of climate hazards, impacts, and exposure to risks and vulnerabilities are conducted and that sectors have used the outcomes of these assessments to implement data-driven disaster risk reduction measures, including for drought, floods.                                                | <b>Impact, vulnerability and risk assessment:</b> 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,                                                                                                   |
| Cross-cutting                             | Achieve reliable, multi-hazard early warning and response systems for all, including for key economic sectors and that planning and development of key sectors fully integrated climate adaptation, informed by up-to-date national and sectoral climate risk, impacts and vulnerability assessments.                       | <p><b>Impact, vulnerability and risk assessment:</b> 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;</p> <p><b>Monitoring, evaluation and learning:</b> by 2030 all Parties have designed, established and operationalized a system for monitoring, evaluation and learning for their national</p> |

|  |  |                                                                                                      |
|--|--|------------------------------------------------------------------------------------------------------|
|  |  | adaptation efforts and have built the required institutional capacity to fully implement the system. |
|--|--|------------------------------------------------------------------------------------------------------|

### 3 Policy, Institutional, and Governance

#### 3.1 National Development and Climate Change Policy Frameworks

Angola has been actively promoting climate adaptation through its national sustainable development policies for an extended period, notably marked by the launch of a dedicated policy on climate adaptation, the National Adaptation Programmes of Action (NAPA) in 2011, and ENAC (2022-2035). In addition to these two climate-specific policies, a series of broader sustainable development policies in Angola also reflect the principles of climate adaptation and resilience building, thereby providing a robust foundation for the development of its NAP.

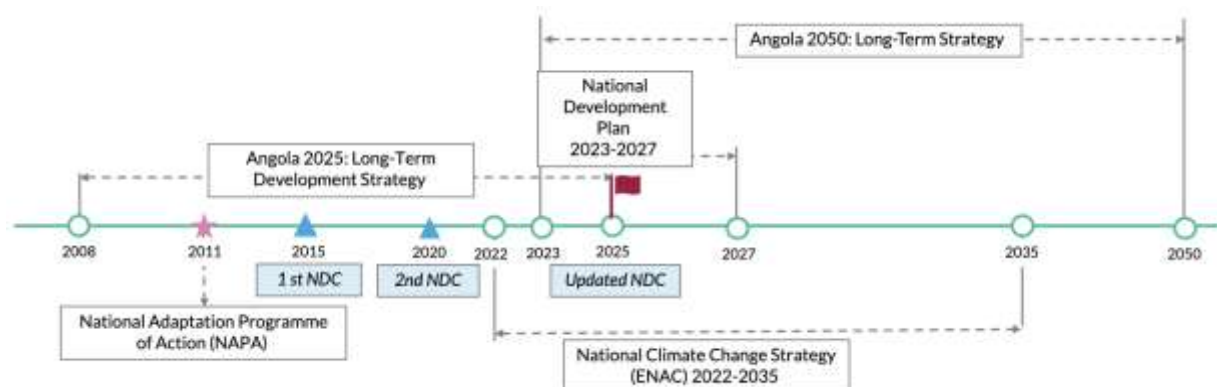


Figure 1: Timeline of Angola's Sustainable Development and Climate Change Policies

##### 3.1.1. National Development Strategies

Angola National Long-Term Development Strategy (Estratégia de Longo Prazo “Angola 2050” (Angola 2050) is implemented with a five-year programme cycle document and has a vision of “looks to the future with hope in the enormous opportunities that lie ahead for the development of the lives of our people, our economy and our culture.”. Currently, the **National Development Plan 2023-2027 (Plano de Desenvolvimento Nacional 2023-2027, PDN)** is functioning as a medium-term planning instrument.<sup>5</sup> The PDN further translates the visions in the ELP into actionable and measurable programmes that would be achieved within the medium term.

Specifically, three programmes and seven objectives in the PDN’s articulation of Axis 5, “Modernizing and making the country's infrastructure more efficient and preserving the environment,”<sup>6</sup> provides a basis and guidance for Angola’s climate change actions and the development of Angola’s NAP, as shown in Table 2.

<sup>5</sup> Governo de Angola, *Plano de Desenvolvimento Nacional 2023-2027 (PDN)* (Luanda: Ministério da Economia e Planeamento, 2023), 7.

<sup>6</sup> Governo de Angola, *Plano de Desenvolvimento Nacional 2023-2027 (PDN)* (Luanda: Ministério da Economia e Planeamento, 2023), 102.

Table 2: Selected programmes, objectives, and priority actions for climate adaptation under PDN Axis 5<sup>7</sup>

| Programme                                                                                                                                          | Objective                                                                                                      | Priority Directly Relevant to NAP Process                                                                                                                                                                                                                                    |
|----------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Programme 30:</b><br>Risk Prevention and Environmental Protection                                                                               | <b>Objective 30.1:</b><br>Mitigate the risk of environmental disasters                                         | <b>Priority 30.1.1:</b> Risk prevention and environmental protection.<br>[Note: directly supports NAP objectives on climate disaster risk reduction, contributing to climate resilience at national and local levels.]                                                       |
| <b>Programme 31:</b><br>Climate Change Programme                                                                                                   | <b>Objective 31.1:</b><br>Prevent and control air, soil and water pollution                                    | <b>Priority 31.1.1:</b> Implementation of the Strategic Plan for Climate Change.<br>[Note: fully aligned with the NAP process, especially the first activity of developing a National Plan for Adaptation to Climate Change.]                                                |
|                                                                                                                                                    | <b>Objective 31.2:</b><br>Strengthen adaptive capacity and resilience to climate change                        | <b>Priority 31.2.1:</b> Improving resilience against environmental risks.<br>[Note: directly in line with the objectives of the NAP process, including climate risk and vulnerability assessment, resource mobilization, etc.]                                               |
| <b>Program 32:</b><br>Protection of Biodiversity, Promotion of the Circular Economy, Management of Chemical Substances and Environmental Education | <b>Objective 32.1:</b><br>Protect and conserve biodiversity                                                    | <b>Priority 32.1.1:</b> Expansion of the country's conservation areas.<br>[Note: Indirectly supports the NAP process, especially the integration of nature-based solutions for adaptation (NbS).]                                                                            |
|                                                                                                                                                    | <b>Objective 32.4:</b><br>Improve management and governance, and promote environmental awareness and education | <b>Priority 32.4.1:</b> Improving environmental management and governance, and training professionals in the sector.<br>[Note: partially supports the NAP process, e.g., improving the inter-ministerial coordination, establishment of executive and technical committees.] |
|                                                                                                                                                    |                                                                                                                | <b>Priority 32.4.2:</b> Implementation of the Strategic Plan for Environmental Education.<br>[Note: directly supports the NAP process, especially regarding capacity building and public awareness.]                                                                         |

In summary, the PDN 2023–2027 reaffirms its commitment to advancing the ENAC (2022–2035), with a particular focus on the National Climate Change Adaptation Plan (NCCAP). While adaptation is a prominent element under Axis 5, focusing on environmental sustainability, there remains room to further integrate

<sup>7</sup> Summary based on the de “Angola, *Plano de Desenvolvimento Nacional 2023–2027 (PDN)* (Luanda: Ministério da Economia e Planeamento, 2023)”.

adaptation planning and implementation across all key axes and sectors of the PDN. The development of Angola's NAP can serve as a key vehicle for realizing the long-term vision outlined in the Angola 2025 Strategy and for contributing to the implementation of the Objectives set in the PDN. At the same time, the NAP process can provide critical inputs to the ongoing formulation of Angola 2050 Long-Term Strategy, particularly with respect to strengthening climate resilience across sectors and time horizons.

### 3.1.1. Nationally Determined Contribution (NDC)

Angola submitted its latest Nationally Determined Contribution 3.0 (NDC 3.0) in September 2025, which covers the period from 2025 to 2030. This is Angola's third communication to the UNFCCC, following the iNDC (2015) and NDC 2.0 (2020). Adaptation components have been included in all three of Angola's NDCs, demonstrating Angola's continuous commitment to climate adaptation at the international level. NDC 3.0 sets out revised mitigation and adaptation targets that reflect the country's current capabilities and advances. The NDC 3.0 incorporates up-to-date emissions inventories and in-depth technical analysis of the contributing sectors in Angola, as well as targets that are aligned with national development strategies. NDC 3.0 reinforces the country's commitment to increasing commitments to child-sensitive and youth-inclusive approaches to build climate resilience through structured actions in key sectors, as listed below.

Table 3: Adaptation components in Angola's iNDC, NDC 2.0 and NDC 3.0

|                                                      | iNDC (2015)                                                                                                                | NDC 2.0 (2021)                                                                                                                                          | NDC 3.0 (2025)                                                                                                                        |
|------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|
| <b>Prioritized sectors</b>                           | (1) Agriculture; (2) Coastal zone; (3) Land-use, Forests, ecosystems and biodiversity; (4) Water resources; and (5) Health | (1) Agriculture and fisheries; (2) Coastal zone; (3) Forest, ecosystem and biodiversity; (4) Water resources; (5) Human health; and (6) Infrastructures | (1) Agriculture and fisheries; (2) Water resources; (3) Human health; (4) Coastal zones; and (5) Forestry, ecosystem and biodiversity |
| <b>Vulnerability Assessment</b>                      | General identification of vulnerable sectors                                                                               | Vulnerabilities were identified at sectoral levels                                                                                                      | Vulnerabilities were identified at sectoral levels                                                                                    |
| <b>Adaptation Costs</b>                              | USD 500 million (Unconditional)                                                                                            | USD 76.16 million (Unconditional)<br>USD 67.83 million (Conditional)                                                                                    | USD 112,13 million (Unconditional)<br>USD 122,82 million (Conditional)                                                                |
| <b>Monitoring, Reporting, and Verification (MRV)</b> | Not specified                                                                                                              | Adaptation action is one of the four components of MRV. (Note: the other three are (1) GHG inventory; (2) Mitigation action; and (3) Financial,         | In line with NDC 2.0 institutional framework for a MRV system consisting of (1) GHG inventory; (2) Mitigation                         |

|                                   |               |                                                                                                      |                                                                                                          |
|-----------------------------------|---------------|------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|
|                                   |               | technical, and technological.)                                                                       | measures; (3) Adaptation measures; and (4) Financial, technical and technological support <sup>8</sup> . |
| <b>Institutional Arrangements</b> | Not specified | Clearer institutional responsibilities and coordination mechanisms were included in the updated NDC. | The NDC includes clear institutional responsibilities and coordination mechanisms.                       |

The current updated NDC 3.0 and the NAP are complementary and mutually reinforcing. The NDC 3.0 provides strategic guidance and international commitments for national-level climate adaptation objectives and scopes, identifying priority sectors such as agriculture and fisheries, coastal zones, forests, ecosystems and biodiversity, water resources, human health and infrastructure, on which the NAP process will conduct more granular risk assessments, prioritization, policy formulation, and institutional coordination to enhance the country's overall adaptive capacity. Conversely, the NAP process also facilitates the systematic identification and integration of adaptation needs in the country, further refining and supplementing the adaptation components (especially in consideration of alignment with the GGA), providing a solid foundation to support NDC implementation.

### 3.1.1. Climate Change and Adaptation Strategies and Plans

Angola submitted its **NAPA** to the UNFCCC in 2011, which was the first national-level policy dedicated to climate adaptation. Angola's NAPA not only systematically identified for the first time the multidimensional risks brought by climate change but also focused on the vulnerability and needs differences across various provinces and sectors (Agriculture, Coastal zone, Biodiversity, Forests, Ecosystems, Water Resources, and Health), aiming to develop targeted adaptation strategies for each specific sector.

In addition, the NAPA identified capacity needs, as well as the importance of gathering information and resources and strengthening institutions. In addition, NAPA identified 15 priority adaptation actions for Angola, as well as their estimated costs (a total of 62.5 million USD) to implement the project in the most vulnerable areas.<sup>9</sup>

Angola launched its **ENAC (2022-2035)**, which has a strategic vision of "Angola adapted to the impacts of climate change and with low-carbon development that also contributes to the eradication of poverty."<sup>10</sup> and provides a national framework - composed of five pillars, including a) Mitigation; b) Adaptation; c) Capacity

<sup>8</sup> The institutional framework for this MRV-system was instituted through the Presidential Decree no. 8/22 of 13 January. Presently, efforts towards the development of this system are underway. These efforts will consider inclusive participation mechanisms, ensuring that relevant stakeholders engaged in the MRV process where appropriate. Source: Republic of Angola. *Angola NDC 3.0*. (Luanda: Government of Angola, 2025), 70.

<sup>9</sup> Republic of Angola, *National Adaptation Programme of Action under the United Nations Framework Convention on Climate Change (UNFCCC)* (Luanda: Ministry of Environment, 2011), 21.

<sup>10</sup> Republic of Angola, *National Climate Change Strategy (ENAC) 2022–2035* (Luanda: Ministry of Environment, 2018), 16.

Building and Technology; d) Financing; and e) Research, Observation, and Analysis - for its national climate change actions until 2030.

ENAC 2022-2035 has five major objectives, four of which are directly linked to the implementation of adaptation. The five objectives include:<sup>11</sup>

- Integrate climate change into national policies, recognizing that it will affect the economy and the lives of all Angolans across the board.
- Develop and implement adaptation measures and actions to reduce the country's vulnerability to climate change;
- Develop and implement measures to mitigate climate change, promoting low-carbon development;
- Ensure that Angola is prepared to comply with the Paris Agreement in the light of its current status as a LDC, but also taking into account its imminent graduation and the new obligations arising from that graduation under the UNFCCC;
- Developing knowledge about climate change in the country and raising awareness among the main players, from the business community to future government leaders, including children and ordinary citizens, of the need to include behavior that contributes to preserving the planet in their daily lives.

ENAC identified the two key climate risks in Angola to be (1) floods and inundations; and (2) droughts,<sup>12</sup> while the priority vulnerabilities varied across the provinces/climatic regions. Concerning the corresponding adaptation measures, it followed the prioritized sectors in the updated NDC and assigned 12 adaptation initiatives for each of the sectors, with clear objectives, goals, responsibility, detailed measures, capacity building, and institutional actions for each of the initiatives. These helped to formulate and prioritise the adaptation actions provided in this NAP.

Table 4: Summary of adaptation initiatives in ENAC 2022-2035<sup>13</sup>

| Sectors                     | Adaptation Programmes                         | Objectives                                                                                                                                                                                                                                                        |
|-----------------------------|-----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Agriculture and Food</b> | A1 - Sustainable agriculture<br>(12 measures) | <ul style="list-style-type: none"> <li>• Deepen national knowledge on resilient agriculture.</li> <li>• Promote resilient agricultural and livestock practices adapted to Angola.</li> <li>• Disseminate the use of locally adapted varieties.</li> </ul>         |
|                             | A2 - Sustainable food<br>(13 measures)        | <ul style="list-style-type: none"> <li>• Improve family health conditions.</li> <li>• Improve food safety for the population.</li> <li>• Reduce deforestation.</li> </ul>                                                                                         |
| <b>Fisheries</b>            | A3 - Sustainable fisheries<br>(7 measures)    | <ul style="list-style-type: none"> <li>• Deepen national knowledge on resilient fisheries production.</li> <li>• Promote practices that enhance marine resources adapted to the Angolan reality.</li> <li>• Contribute to a healthy and balanced diet.</li> </ul> |

<sup>11</sup> Republic of Angola, *National Climate Change Strategy (ENAC) 2022–2035* (Luanda: Ministry of Environment, 2018), 35.

<sup>12</sup> Ibid, 60-61.

<sup>13</sup> Summarized based on: Republic of Angola, *National Climate Change Strategy (ENAC) 2018–2030* (Luanda: Ministry of Environment, 2018), 66-93.

|                                              |                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                  |
|----------------------------------------------|-------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Coastal Areas</b>                         | A4 - Protection of coastal and riverside areas<br>(8 measures)          | <ul style="list-style-type: none"> <li>● Deepen national knowledge about the coastal system and impacts.</li> <li>● Determine priority areas for intervention.</li> <li>● Improve coastal zone defense capability.</li> <li>● Reduce land occupation located in areas with high risk of flooding of coastal areas.</li> </ul>                                                                    |
| <b>Forests, Ecosystems and Biodiversity</b>  | A5 - Protection of forests, ecosystems and biodiversity<br>(9 measures) | <ul style="list-style-type: none"> <li>● Increase knowledge about climate impacts on Angolan biodiversity.</li> <li>● Affirm the role of biodiversity and ecosystems in the adaptation of other sectors to climate change.</li> <li>● Promote the sustainable management of biodiversity and ecosystems to provincial scale.</li> <li>● Forest fire prevention.</li> </ul>                       |
| <b>Integrated Water Resources Management</b> | A6 - River basin management<br>(4 measures)                             | <ul style="list-style-type: none"> <li>● Strengthen technical capacities and carry out hydrographic studies to improve the knowledge of river basins.</li> </ul>                                                                                                                                                                                                                                 |
|                                              | A7 - Drought risk management<br>(8 measures)                            | <ul style="list-style-type: none"> <li>● Reduce the impact of droughts.</li> </ul>                                                                                                                                                                                                                                                                                                               |
|                                              | A8 - Flood risk management<br>(6 measures)                              | <ul style="list-style-type: none"> <li>● Reduce the risk and impact of floods.</li> </ul>                                                                                                                                                                                                                                                                                                        |
|                                              | A9 - Drinking water for all<br>(4 measures)                             | <ul style="list-style-type: none"> <li>● Ensure the supply of water to the populations.</li> <li>● Ensure the availability and quality of water for different uses.</li> </ul>                                                                                                                                                                                                                   |
| <b>Human Health</b>                          | A10 - Prevention and monitoring of tropical diseases<br>(5 measures)    | <ul style="list-style-type: none"> <li>● Deepen national knowledge about health risks resulting from the impacts of climate change.</li> <li>● Improve the prevention and response capacity of the national health system in combating climate threats, in particular tropical diseases.</li> <li>● Raise awareness in communities about the risks of climate change on human health.</li> </ul> |
|                                              | A11 – Sanitation<br>(3 measures)                                        | <ul style="list-style-type: none"> <li>● Increase housing sanitation levels.</li> </ul>                                                                                                                                                                                                                                                                                                          |
| <b>Infrastructure</b>                        | A12 - Resilient construction and infrastructure<br>(8 measures)         | <ul style="list-style-type: none"> <li>● Foster resilient communities.</li> <li>● Promote sustainable and climate-proof building practices.</li> </ul>                                                                                                                                                                                                                                           |

### 3.2 Current Policy Landscape and the Position of the NAP

Angola's current national development plans and strategies, alongside its existing climate change policies, provide a framework that could significantly contribute to the country's adaptation and resilience objectives.

**Table 5:** Summary of major strategies and frameworks that could contribute to Angola's climate action.

| Dimension                               | ELP                                                                                                             | NDP/PDN                                                                                                              | NAPA                                                                                            | ENAC                                                                                                                                | ENEA                                                                                                                            |
|-----------------------------------------|-----------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| <b>Timeline</b>                         | 2008–2025<br>(extending to 2050)                                                                                | 2023–2027                                                                                                            | Since 2011                                                                                      | 2022–2035                                                                                                                           | 2022-2050                                                                                                                       |
| <b>Climate Adaptation Incorporation</b> | Indirectly (mentioned across volumes as a cross-cutting issue), with less direct mention of climate adaptation. | Explicitly sets a target and priority relevant to adaptation, with several other targets also related to adaptation. | First dedicated climate adaptation policy.                                                      | A dedicated national climate change strategy covering both adaptation and mitigation.                                               | Climate change is recognised as a key area of focus for environmental education.                                                |
| <b>Sectors Covered</b>                  | Multiple sectors across the national economy.                                                                   | Multiple sectors across the national economy.                                                                        | Six sectors.                                                                                    | Six key sectors in line with the Updated NDC.                                                                                       | Environmental education.                                                                                                        |
| <b>Specific Adaptation Measures</b>     | Macro-level strategic pathways, with the potential for adaptation integration.                                  | Clearer actions with goals and priorities that can be achieved through adaptation interventions.                     | Prioritized adaptation actions and a project profile.                                           | Detailed initiatives with objectives, responsible ministries, and actions for each sector.                                          | Raising awareness about climate-related issues and supporting education and training that can contribute to climate resilience. |
| <b>Means of Implementation</b>          | High-level guidance implemented through sectoral and local development plans and frameworks.                    | Implementation via sectoral programmes and priority projects under the PDN, with designated lead ministries.         | Implementation through prioritized actions, capacity building, and institutional strengthening. | "ENAC Action Plan" detailing mechanisms, timelines, and indicators.                                                                 | Engage in campaigning and communication, institutional arrangements, citizen participation, and localized implementation.       |
| <b>Budget &amp; Financing Mechanism</b> | No clear budget or funding mechanism stated.                                                                    | Establishment and operationalization of a national climate fund (priority 31.2.1).                                   | Estimated costs of top 15 prioritized projects totalizing approximately USD 62.5 million.       | No specific amounts provided; calls for financial resources from both national climate financing and international climate finance. | No specific amounts provided, emphasizes the optimization of available human and financial resources.                           |

| Dimension                                 | ELP                                                            | NDP/PDN                                                                       | NAPA                                                           | ENAC                                                                                                                           | ENEA                                                                                                                                                                             |
|-------------------------------------------|----------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Institutional Arrangements</b>         | Whole-of-government approach with cross-sectoral coordination. | Whole-of-government approach with cross-sectoral coordination.                | It proposes a national adaptation coordination mechanism.      | Clear multi-sectoral coordination framework, with responsibilities assigned to ministries.                                     | Proposes a national directorate for environmental education as key actor.                                                                                                        |
| <b>Data &amp; Monitoring (MRV) System</b> | No specific MRV mechanism included.                            | No specific MRV mechanism included.                                           | Priority 13 for climate monitoring and data management system. | To establish an MRV system with adaptation as one of four components.                                                          | An annual report from local administrations is planned with a final evaluation in 2050 based on indicators and surveys to assess behavioral change and environmental conditions. |
| <b>Implications for NAP</b>               | A high-level guiding framework for the NAP.                    | Entry points for integrating adaptation with overall sustainable development. | The foundation and reference of the NAP need to be updated.    | Directly guides the NAP, based on which the NAP process can refine more detailed roadmaps and extend them to the action level. | This is a supporting document as it refers to the soft component of the NAP.                                                                                                     |

### 3.3 Governance Framework

#### 3.3.1. National Level

At the national level, the lead government ministry responsible for the environment sector, including climate change, is the Ministry of Environment (MINAMB). It is responsible for the implementation of the National Strategy on Climate Change, for preparing and reporting on NDCs, submitting national communications to the UNFCCC Secretariat, and leading coordination for the elaboration and implementation of the NCCAP. A mechanism for the coordination and cooperation among Ministerial Departments and public institutions in the relevant sectors remains to be further explored.<sup>14</sup>

Within MINAMB, there are four National Directorates, namely the (1) the National Directorate for the Environment (DNA); (2) the National Directorate of Environmental Education (DNEA); (3) the National Directorate for Climate Action and Sustainable Development (DNACDS); and (4) the National Directorate of Environmental Technologies (DNTA). In addition, there are other relevant institutions under the Ministry of Environment, namely, the National Institute for Biodiversity and Conservation (INBAC), the National Institute for Environmental Management (INGA) the National Agency for Waste Management (ANR), Center for Tropical Ecology and Climate Change Center (CETAC)

However, the DNACDS is responsible for formulating, conducting, executing, and controlling policies related to climate change.

According to its 2nd NDC, Angola has established the National Commission on Climate Change and Biodiversity (CNACB), with a more specific mandate for climate change and more executive and political harmonization, composed of several entities such as the Ministry of Mineral Resources, Petroleum and Gas, Ministry of Transport, Ministry of Higher Education, Science, Technology and Innovation, Ministry of Health, Ministry of Fisheries and Marine Resources, Ministry of Agriculture and Forestry, under the coordination of the Ministerial Department responsible for the Environment. Building on the arrangements of CNACB outlined in Angola's NDC, the NAP will reinforce and operationalize its role as the central coordination mechanism for adaptation.

Table 6: National Commission on Climate Change and Biodiversity – Redefinition in NDC 3.0<sup>15</sup>

| National Commission on Climate Change and Biodiversity |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|--------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Assignments<br/>(proposed new assignments)</b>      | <ul style="list-style-type: none"><li>● Concert the Initiatives and harmonize policies for implementation of the national strategy on climate change and the strategy for the preservation of biodiversity;</li><li>● Create necessary conditions for the execution and implementation of the NDC;</li><li>● Coordinate and articulate the different sectors in the implementation of the Initiatives defined in this NDC;</li><li>● Create a national investment plan that integrates mitigation and adaptation initiatives foreseen in the NDC and is articulated with the future Angolan Fund for Climate Change (PAAC);</li></ul> |

<sup>14</sup> Republic of Angola, *Nationally Determined Contribution of Angola* (May 2021), 62.

<sup>15</sup> Republic of Angola, *Nationally Determined Contribution of Angola* (May 2021), 63.

|                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                    | <ul style="list-style-type: none"> <li>● Create centres of excellence to conduct studies of disasters and systematic observations of the climate;</li> <li>● Formulate proposals for national mitigation and adaptation policies for climate change.</li> <li>● Identify legislative needs on the matter;</li> <li>● Coordinate the integration of climate change policies in various sectors of the economy and at the provincial level;</li> <li>● Prepare an opinion on climate policy documents developed by the Ministerial Department responsible for the Environment for submission to UNFCCC;</li> <li>● Prepare a recommendation opinion on climate policy documents developed by the Ministerial Department responsible for the Environment for submission to the UNFCCC;</li> <li>● Develop guidelines for planning and preparing NDC progress assessment reports;</li> <li>● Promote public discussion on climate change;</li> <li>● Establish an NDC monitoring secretariat.</li> </ul> |
| <b>Composition</b> | <ul style="list-style-type: none"> <li>● <b>Executive Committee</b>, composed of the Minister of the relevant Ministerial Departments, provincial governments, and other public institutions to allow for regional and local inputs, with a focus on strategic coordination and decision-making;</li> <li>● <b>Technical Committee</b>, composed of technical offices' focal points of the relevant Ministerial Departments, responsible for technical implementation and intersectoral coordination.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Indicators</b>  | <ul style="list-style-type: none"> <li>● Elaboration of annual activity plans;</li> <li>● Creation of working groups to discuss the theme of climate change in various sectors;</li> <li>● Meetings of the executive committee held quarterly;</li> <li>● Meetings of the technical committee held monthly;</li> <li>● Periodic publication of documents within the scope of Angola's obligations under the UNFCCC (National Communication, iNDC, BUR)</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

### 3.3.1. Local/Local Level

Since 1<sup>st</sup> January 2025, Angola's administrative structure consists of 21 provinces (each led by a Governor appointed by the central government) and 326 municipalities. Traditionally, decision-making has been highly centralized, but a decentralization process is underway to empower provincial and local authorities. In the climate change context, provincial governments and local administrations are expected to play a key role in translating national policies into on-the-ground action.

However, local governance for climate adaptation in Angola still faces significant capacity and coordination challenges, including:

- **Lack of formal structures:** There is currently no formalized system of provincial or municipal climate change committees, despite a mention of linking provincial government with the CNACB. Climate considerations need to be further integrated into local planning.
- **A focus on disaster response over long-term resilience building:** Most local efforts related to climate adaptation have been oriented toward disaster risk management through Civil Protection units. However, only 8 out of 18 Provincial Civil Protection Commissions have developed preparedness, contingency, and recovery plans as of

2022<sup>16</sup>. Local-level actions are largely reactive (responding to floods, droughts, etc.) rather than proactively planning for long-term climate resilience.

- **Unclear mandates for local authorities:** The roles and responsibilities of provincial and municipal authorities in climate change adaptation are not clearly defined in policies. A World Bank climate governance review recommends to “Define the role and the responsibilities of local/provincial authorities in designing, implementing and financing national/local climate plans and strategies.”<sup>17</sup>
- **Resource and capacity constraints:** The 2011 NAPA already highlighted major constraints for NAPA’s implementation, with principal constraints on its implementation being particularly related to the lack of material and financial resources, as well as structural barriers, such as lack of technical capacity, limited human capital, and institutional coordination.<sup>18</sup>

Nevertheless, Angola’s willingness and commitment to strengthen local governance on climate adaptation are reflected in its ENAC and NDC 3.0, which provides a basis for the localization of the NAP process.

Table 7: Climate local level governance in ENAC and NDC 3.0

| Perspective                      | Implications for the local level adaptation governance                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Institutional (top-down)</b>  | <b>ENAC 2022-2035:</b> Provincial governments serve as a fundamental link between the central authorities and local communities, ensuring that ENAC objectives are localized. Through CNACB and its committees, they align national climate plans with local realities and community needs.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Institutional (bottom-up)</b> | <p><b>NDC 3.0<sup>19</sup>:</b> The importance of involving provincial governments in the national climate commission as part of the ongoing decentralization process, enabling them to contribute to national-level decision-making.</p> <p>Decentralized Engagement and Youth and Community Forums to equip young people and other groups with knowledge and tools to contribute meaningfully to climate solutions, ensuring their inclusion in local governance processes.</p> <p>The NDC includes <b>municipal regulations, adaptation measures</b>, and vulnerability mapping as part of its monitoring indicators. Local governments are expected to integrate climate adaptation into development planning and implement early warning systems and community-based resilience measures.</p> |
| <b>Capacity building</b>         | <b>ENAC 2022-2035:</b> “Capacity Building and Technology” pillar (Initiative C1) targets institutional strengthening by ensuring all public services receive at least one training session on climate change, and that ministerial officials are trained on climate change issues, thereby improving local-level adaptation governance capacity.                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

<sup>16</sup> World Bank Group. *Angola Country Climate and Development Report*. CCDR Series. Washington, DC: World Bank Group, 2022. 27.

<sup>17</sup> World Bank Group. *Angola Country Climate and Development Report*. CCDR Series. Washington, DC: World Bank Group, 2022. 27.

<sup>18</sup> Republic of Angola, *National Adaptation Programme of Action under the United Nations Framework Convention on Climate Change (UNFCCC)* (Luanda: Ministry of Environment, 2011), 65.

<sup>19</sup> Republic of Angola, *Angola NDC 3.0* (Luanda: Government of Angola, September 2025)

NAP implementation is expected to establish clear channels for two-way coordination. On the one hand, national level entities (e.g., the CNACB) provide guidance, funding and information to local bodies. On the other hand, local governments feed local vulnerabilities and priorities into national planning and decision-making processes.

### 4 Framework for the NAP

Angola’s NAP process was designed based on strong political momentum created by the ENAC 2022-2035. The below structure is the implementation framework of the NAP. At its core, the framework provides a foundation to ensure that climate adaptation efforts are effectively coordinated and implemented from the highest levels down to local communities through tiered governance and multi-entity coordination.

Currently, the CNACB, as Angola’s inter-ministerial body dedicated to coordinating national action on climate change and biodiversity, is mandated to guide and monitor the implementation of the ENAC 2022–2035. Based on this, it is recommended that a two-tier climate adaptation governance structure be built under the CNACB for better coordination, implementation, and monitoring of the NAP.

The two-tier climate adaptation governance structure in Figure 2 is proposed to consist of the following:

**National level:** the National Climate and Resilience Council as the core body, with the Interministerial Committee on Adaptation serving as an arm for cross-ministerial coordination, and the NAP Secretariat as the execution entity; and

- Sectoral and Local level:** Sector Working Groups that translate the NAP to the sectoral level and oversee implementation and sectoral adaptation plans, along with Provincial and Municipal Coordination Platforms for NAP implementation at the local level.



Figure 2: Proposed structure for the implementation of the Angola NAP.

The details of the roles of the entities in the proposed structure are listed in Table 8.

**Table 8: Roles and responsibilities of the entities within the proposed NAP structure**

| Level                 | Entity                                   | Role and Responsibilities                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-----------------------|------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| National              | National Climate & Resilience Council    | Co-chaired by the Presidency (or designee) and the CNACB, with the following responsibilities: <ul style="list-style-type: none"> <li>• Set the overall national climate adaptation direction, strategic targets, and priorities;</li> <li>• Provide high-level guidance on alignment between adaptation policies and other national policies;</li> <li>• Ensure that national adaptation efforts are coherent, adequately resourced, and effectively coordinated across the government; and</li> <li>• Oversee the implementation of adaptation measures outlined in ENAC 2022–2035, the adaptation component in the NDC, and the NAP.</li> </ul> |
| National              | Interministerial Committee on Adaptation | Guided by the National Climate & Resilience Council, it advises and supports the Council on coordination among ministries to ensure more coherent adaptation efforts. Responsibilities are to: <ul style="list-style-type: none"> <li>• Coordinate ministries in the implementation of adaptation measures outlined in ENAC 2022–2035, the adaptation component of the NDC, and the NAP across various ministries; and</li> <li>• Promote the integration of adaptation into various sectoral policies, budgets, and timelines.</li> </ul>                                                                                                         |
| National              | NAP Secretariat                          | The NAP Secretariat, which is led by and reports to the National Climate & Resilience Council, is fully responsible for implementing the adaptation measures outlined in ENAC 2022–2035, the adaptation component of the NDC, and the NAP.<br><br>The key Responsibilities are as follows: <ul style="list-style-type: none"> <li>• Manage the NAP work program, budget tagging, schedules, and cross-ministerial/provincial coordination.</li> <li>• Manage other units that play important roles in the implementation of the NAP.</li> </ul>                                                                                                    |
| Under NAP Secretariat | Finance & Partnerships Platform          | Hosted in the NAP Secretariat and led by the Ministry of Finance and the Ministry of Economy and Planning.<br><br>Key responsibilities include mobilising domestic budgets and international climate finance for adaptation efforts and managing adaptation project pipelines and fiduciary standards.                                                                                                                                                                                                                                                                                                                                             |
| Under NAP Secretariat | Data, Risk & Early-Warning Hub           | Hosted in the NAP Secretariat and anchored in hydromet and disaster agencies.<br><br>Their key responsibility is to standardize risk assessments, climate scenarios, open data, and early warning protocols.                                                                                                                                                                                                                                                                                                                                                                                                                                       |

|                       |                                                |                                                                                                                                                                                   |
|-----------------------|------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Under NAP Secretariat | Monitoring, Evaluation & Learning (MEL) System | Defines indicators, baselines, annual reviews, and biennial stock takes, and links to national statistics and reports to the Council.                                             |
| Under NAP Secretariat | Stakeholder & Social Inclusion Forum           | Structured engagement of civil society, the private sector, academia, traditional authorities, youth, women, and community groups. They serve as grievance and feedback channels. |
| Under NAP Secretariat | Legal & Policy Alignment Cell                  | It ensures ENAC/NAP integration into sector strategies, public investment rules, building codes/standards, environmental licensing, and the MTEF.                                 |
| Sectoral level        | Sector Working Groups                          | Guided by the National Climate & Resilience Council, it is responsible for carrying out adaptation planning across all sectors.                                                   |
| Local level           | Provincial & Municipal Coordination Platforms  | Chaired by governors/administrators, it translates national priorities into territorial plans and pipelines and feeds local risks/data upward.                                    |

## 5 Considerations of Guiding Principles (Best Practices) in Angola's NAP Implementation

This chapter outlines Angola's approaches to consider the most vulnerable people, identified in the Key Climate Risks, Vulnerabilities, and Adaptation Needs chapter in the implementation of Angola's NAP. The following groups of people are identified as most vulnerable and, on the frontline, facing climate change impacts, increasing their vulnerability to climate change impacts and hazards in Angola: (i) women, mostly pregnant women ; (ii) infants and children; (iii) youth; (iv) people with disabilities; (v) local communities; and (vi) smallholder crop farmers and fisheries. Thus, the implementation of Angola needs to recognize these groups, ensuring that the planning, implementation, and monitoring, evaluation, and learning of adaptation consider the priorities of these groups. Specific approaches to increase recognition, participation, and inclusivity for each group are proposed in the following sections.

### 5.1 Angola Gender-Responsive NAP Process

In general, gender dynamics shape who is most vulnerable to climate impacts, who has the resources for adaptation, and who participates in key decision-making that influences vulnerability levels and capacity to adapt to climate change. In Angola, as elsewhere, girls, boys, and women participate in highly climate-sensitive sectors, making them more vulnerable. Girls, boys, and women in Angola often shoulder unpaid care, livestock care, and water collection work.

They are key to local food systems, and may have less secure access to education, land, finance, and information. Overlooking these gaps risks maladaptation and weaker outcomes. International guidance for NAPs under the UNFCCC calls for gender-responsive planning—embedding analysis, participation,

budgeting, and monitoring— as it measurably improves effectiveness.<sup>20,21</sup> Given Angola's high climate vulnerability and relatively low readiness,<sup>22</sup> integrating gender across adaptation priorities is both a legal and practical imperative for resilience.

Limited access to education for girls, boys, and women significantly reduces their adaptive capacity, coupled with limited access to means of production. Recent gender statistics point to the specific vulnerabilities of girls and women in Angola. The adult female literacy rate in Angola is 53.4% for girls aged 15 and above (IIMS 2023-2024), with a disproportionate difference across urban (67.1%) and rural (34.2 %) areas,<sup>23</sup> which constrains access to climate information and services, significantly limiting their adaptive capacity. Adolescent fertility in Angola remains among the world's highest at ~123 births per 1,000 girls aged 15–19 (IIMS 2023-2024),<sup>24</sup> compounding health and economic risks in climate shocks. Many households rely on women's incomes and leadership: about 26% of households are female-headed (IIMS 2023-2024),<sup>25</sup>

Across the country, women carry the burden of unpaid domestic labor, including collecting water and fuel— tasks that become more arduous and dangerous during droughts and extreme weather events. In rural communities, where only a small fraction of households have access to clean cooking fuels or electricity, these responsibilities expose women and girls to health risks and environmental hazards. The lack of infrastructure and services compounds their vulnerability, especially during crises.

Despite Angola being a highly urbanized country with approximately a third of the country population living in the capital city of Luanda, approximately 3.7 million women still live in rural areas, out of which the 78% report that agriculture is their main source of livelihood and often in rainfed systems sensitive to drought.<sup>26</sup> <sup>27</sup> Recently, the strong impact of El Niño caused one of the worst droughts in over 40 years, leaving a large portion of the population, especially in rural areas, without sufficient food and water. As such, there is increasing exposure to the risk of gender-based violence for girls and women.<sup>28</sup> Together with Angola's ND-GAIN profile, these figures underscore gendered climate risk.

Climate change also deepens existing inequalities in decision-making. While some progress has been made, only a minority of women, particularly in rural areas, have autonomy over their health and reproductive choices. This limited agency affects their ability to respond to climate-related challenges, access healthcare, and participate in community-level adaptation efforts.

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<sup>20</sup> UNFCCC, *The Gender Action Plan*, <https://unfccc.int/topics/gender/workstreams/the-gender-action-plan>

<sup>21</sup> NAP Global Network, *Gender-Responsive National Adaptation Plan*, <https://napglobalnetwork.org/themes/gender/>

<sup>22</sup> Notre Dame Global Adaptation Initiative, *Angola, ND-GAIN Index, 2023*, <https://gain-new.crc.nd.edu/country/angola>

<sup>23</sup> Inquérito de Indicadores Múltiplos e de Saúde (IIMS) 2023-2024 [Publicacao\\_638818795475855073.pdf](Publicacao_638818795475855073.pdf)

<sup>24</sup> Inquérito de Indicadores Múltiplos e de Saúde (IIMS) 2023-2024 [Publicacao\\_638818795475855073.pdf](Publicacao_638818795475855073.pdf)

<sup>25</sup> Inquérito de Indicadores Múltiplos e de Saúde (IIMS) 2023-2024 [Publicacao\\_638818795475855073.pdf](Publicacao_638818795475855073.pdf)

<sup>26</sup> Food and Agriculture Organization of the United Nations (FAO), *National Gender Profile of Agriculture and Rural Livelihoods – Angola*, Country Gender Assessment Series (Luanda, Angola: FAO, 2023), 72, <https://doi.org/10.4060/cc7104en>

<sup>27</sup> Food and Agriculture Organization of the United Nations (FAO), *National Gender Profile of Agriculture and Rural Livelihoods – Angola*, Country Gender Assessment Series (Luanda, Angola: FAO, 2023), 72, <https://doi.org/10.4060/cc7104en>

<sup>28</sup> Angola's Humanitarian Action for Children of UNICEF, since 2024, is incorporated in the appeal of the [Eastern and Southern Africa Region Appeal | UNICEF](#)

The digital divide further isolates women from climate information and early warning systems. With less than 34% of women reporting internet use, many are excluded from platforms that could empower them with the knowledge and tools to protect their families and livelihoods.

Yet, women are not only vulnerable, but also central to the solution. Their roles in agriculture, natural resource management, and community leadership position them as key actors in climate adaptation. The PNAAC seeks to harness this potential by promoting inclusive governance, supporting women-led adaptation initiatives, and ensuring that climate policies reflect the realities of those most affected.

The design and implementation of adaptation must incorporate gender sensitivity at the core. The evidence provided in the Key Climate Risks, Vulnerabilities, and Adaptation Needs chapter provides a rich background of how vulnerable girls and women are to climate change. In this section, the NAP demonstrates how girls and women are incorporated in the adaptation planning, implementation, and monitoring. This includes ensuring that women have access to climate-resilient technologies, clean energy, and safe water; that girls can continue their education during climate disruptions; and that women's voices are heard in the planning and implementation of local adaptation strategies.

By integrating gender equality into climate adaptation, Angola can build a more resilient, inclusive, and just society in which every citizen, regardless of gender, can thrive in the face of a changing climate.

The NAP implementation for Angola applies the GESI approach to ensure the maximum participation of women and other vulnerable groups, increasing social inclusion in adaptation implementation to achieve sustainable development. Angola's gender-responsive NAP will support the maximum inclusion and consideration of women and girls by:

- Conduct and update a NAP-focused gender analysis, recognizing women as agents of change in adaptation;
- Recognising the needs of women and girls, considering the background and context provided in this section, and acknowledging that capacities to adapt differ based on gender, socioeconomic status, and other factors;
- Prioritize capacity building for girls and women, enhancing their roles in adaptation, and increasing their participation, including in key decision-making processes of the NAP implementation process;
- Introduce climate change and gender equality in vocational training and education curriculum in schools to enhance implementation of adaptation actions;
- Include Angola's government gender institutions in the NAP process;
- Integrate gender in the monitoring, evaluation, and learning system, including setting sex-disaggregated indicators, gender-responsive targets, and budget tags; and
- Guarantee women's meaningful participation in climate adaptation governance. Priority investments should focus on expanding climate-resilient WASH close to households; designing water points with GBV risk-mitigation; tailoring climate-smart agriculture extension, inputs, and climate information services to women farmers; strengthening women's land and tenure documentation; and creating dedicated finance (grants, micro-credit, insurance) for women-led enterprises, notwithstanding the role and engagement of girls and women in education and entrepreneurship approaches.

## 5.2 Consideration of Children in Angola's NAP Implementation

Children in Angola are highly vulnerable to the impacts of climate change. Extreme weather events destroy schools and key transport infrastructure required for children to access schools. Extreme heat affects

children's ability to learn, and exposure to higher-than-average temperatures is associated with fewer years of schooling (UNICEF, 2019).

According to the Children's Climate Risk Index (UNICEF, 2021), Angola ranks 10<sup>th</sup> globally in terms of "extremely high risk" for children. As children in Angola experience deprivation of several needs simultaneously, they are more vulnerable to the impact of climate change. Angola's Multidimensional Poverty Index shows that approximately 74.4%<sup>29</sup> children experience between three and seven deprivations simultaneously, with poverty being far more widespread among children under the age of 10. These conditions make children particularly susceptible to the health, nutrition, education, and livelihood impacts of climate-related shocks.

Rising temperatures, erratic rainfall, and increasingly frequent droughts and floods have severely disrupted agricultural productivity, leading to widespread food insecurity and malnutrition. Malnutrition impairs physical growth and cognitive development, reducing school performance and future economic potential. In rural areas, where families rely heavily on subsistence farming, children are often pulled out of school to help with household survival tasks such as collecting water and firewood, further jeopardizing their education and safety (Climate Landscape for Children, UNICEF, 2023).

The health impacts are equally alarming. Climate-sensitive diseases, such as malaria, cholera, and diarrhoea, are on the rise, exacerbated by poor sanitation and contaminated water sources—conditions worsened by flooding and drought. Children in rural and poor urban communities are disproportionately affected, with limited access to healthcare and vaccinations. Moreover, indoor air pollution from biomass fuels used for cooking and lighting contributes to respiratory illnesses, with children bearing the brunt due to prolonged exposure. The psychological toll of environmental disasters—loss of homes, livelihoods, and loved ones—adds another layer of trauma, especially for young children who lack the emotional tools to process such upheaval. Addressing these multifaceted challenges requires a coordinated, child-centered climate response that integrates health, education, energy, and social protection systems.

The Angola NAP implementation adopts a child-centered approach that protects children's rights, prioritizes their needs, and includes their meaningful participation in decision-making processes. The following approaches will be implemented to increase the consideration of children in the NAP implementation for Angola.

- Consideration of adaptation actions that invest in and enhance climate-resilient water, sanitation, and hygiene (WASH), health, education, child protection, and social protection systems services;
- Incorporate child-specific vulnerability and capacity analysis into national and local climate change assessments;
- Integration of children in the monitoring, evaluation, and learning system, including setting age-disaggregated indicators, child-centered targets, and budget tags.

### 5.3 Consideration of Youth in Angola NAP Implementation

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<sup>29</sup> Pobreza Multidimensional em Angola, 2020  
[ine.gov.ao/Arquivos/arquivosCarregados//Carregados/Publicacao\\_637494425092204878.pdf](http://ine.gov.ao/Arquivos/arquivosCarregados//Carregados/Publicacao_637494425092204878.pdf)

Angola has one of the youngest populations in Africa, with 61% (IIMS, 2023-2024) of the population under 25 years old. Approximately 47% of Angola's population is estimated to be between 0–14 years old (IIMS, 2023-2024), with a constant population growth of approximately 3% per year.

Their lives are shaped by challenges related to water and sanitation, nutrition, education, health, and access to essential services, issues that are exacerbated by environmental degradation and extreme weather events. In rural areas, where infrastructure is limited and livelihoods depend heavily on natural resources, young people face heightened risk. Droughts, floods, and heatwaves disrupt schooling, increase exposure to diseases, and threaten food and water security, placing immense pressure on families and communities.<sup>30</sup>

Nevertheless, Angola's youth are not only vulnerable but also powerful agents of change. By investing in youth-focused climate education, promoting inclusive participation in local adaptation planning, and supporting youth-led initiatives, Angola is laying the foundation for a more resilient future. Locally organized youth and climate forums are helping decentralize engagement, ensuring that young voices from across the provinces are heard and valued. These platforms empower young people with the knowledge, tools, and networks needed to contribute meaningfully to climate solutions.

When children and youth are equipped to understand and respond to climate risks, they become key contributors to community resilience. Their involvement strengthens early warning systems, enhances local innovation, and fosters intergenerational equity in disaster risk reduction. Through the PNAAC, Angola commits to nurturing this potential and ensuring that climate action is inclusive, forward-looking, and rooted in the lived experiences of its youngest citizens.

To fully promote and understand the participation of youths in Angola's NAP process, the following approaches are recommended:

- Youth engagement in the development and implementation of national climate change policies and projects, ensuring their participation in national climate action;
- Youth meaningful involvement and capacity-building to support the integrated resources mobilization efforts to sustain the NAP process;
- Create platforms and networks that amplify the voices of youth, including platforms to integrate their participation in policy development and showcase their knowledge and priorities in the NAP process implementation.
- Empowering youth with the knowledge, skills, and values necessary for meaningful participation in NAP implementation through educational programs and ensuring their representation in forums and events.
- Providing training for public sector officials to engage with children and youth effectively, identifying new economic pathways for their role in the just transition;
- Integration of children in the Monitoring, Evaluation and Learning system, including setting age-disaggregated indicators, child-centered targets, and budget tags.

### **5.3.1 Role of Education and Skills Development in Angola's NAP process**

Climate change significantly undermines educational access and outcomes for children and youth in Angola, particularly in rural and drought-affected regions. The CLAC report (UNICEF Angola, 2023) highlights that over 2.3 million children are out of school, with droughts and extreme weather events disrupting both attendance and infrastructure. In farming households, climate-induced income shocks often force families

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<sup>30</sup> Climate Landscape Analysis for Children in Angola, UNICEF, 2023.

to reduce spending on education or withdraw children from school to support agricultural labor. Girls are especially affected, frequently tasked with collecting firewood or water, which not only limits their school attendance but also exposes them to risks of violence.

Boys in rural areas are vulnerable because of their livestock farming responsibilities, as they continuously travel longer distances to feed and water livestock (FAO, 2014). Thus, limiting education opportunities. Moreover, 70% of children have had their education disrupted due to climate-related factors, such as school closures, non-attendance, or inability to concentrate (Philipp, 2021). The lack of access to electricity in many schools further compounds this issue, limiting the use of educational technologies and distance learning, especially during emergencies. These challenges threaten to deepen existing inequalities and hinder the long-term development potential of Angola's youth.

The long-term successful implementation of adaptation in Angola will depend largely on building the demographic dividend through skills, technical capacities, and values of its people, backed by effective systems. Education is therefore crucial—from pre-primary to higher educational levels (Universities), as well as training programs that build the technical skills needed for planning and implementation of climate adaptation that prioritize sustainable development. The youth will be one of Angola's most important assets in the transition to a climate-resilient and socially inclusive future economy that integrates adaptation at all levels of planning and implementation of development activities.

## 5.4 Considerations of Local Communities and other Vulnerable Groups in the Implementation of the Adaptation Plan in Angola

### 5.4.1 Considerations of People with Disabilities in the Implementation of the Adaptation Plan in Angola

Climate change in Angola poses heightened risks for people with disabilities, who often face compounded vulnerabilities due to limited mobility, access to services, and social exclusion. The CLAC report (UNICEF Angola, 2023) highlights that adaptation strategies must be inclusive, noting that **public health actions should prioritize vulnerable groups, such as children, the elderly, pregnant women, and people with disabilities**. These groups are especially at-risk during climate-related disasters, such as floods and droughts, which can disrupt access to healthcare, sanitation, and safe shelter.

Moreover, the lack of inclusive infrastructure and emergency response systems means that people with disabilities may be left behind during evacuations or unable to access critical services. Ensuring that climate resilience planning includes disability-sensitive measures—such as accessible health units, inclusive education, and targeted awareness campaigns—is essential for safeguarding their rights and well-being in the face of escalating climate threats.

Angola's NAP process should fully ensure consideration of people with disabilities (PWD) due to their high vulnerability to climate change impacts in the country. The Angola NAP process recognizes the important role of adaptation that considers the needs of PWD, including their role and full participation of PWD in adaptation decision-making processes at all levels of decision-making. To achieve this, the NAP process for Angola prioritizes the following.

- All information, communication, and materials related to the NAP process must be provided in accessible formats that people with disabilities can understand;
- Inclusive Participation and Representation in all activities of the NAP process;
- Targeted strategies for PWD in the implementation of adaptation actions that consider the unique challenges and needs of PWD, in areas such as social protection, employment, and access to resources and services.

## 5.4.2 Inclusion of Traditional Local knowledge in NAP Implementation for Angola

The planning and implementation of adaptation, at all levels of government (national and local) and sectoral, should consider the diversity of knowledge, including the equal consideration of traditional and local knowledge and practices. Also, the implementation of adaptation should be informed and guided by traditional and local knowledge systems.

Recognizing this, the implementation of the Angola NAP process must ensure that these groups are given special consideration. The following approaches will be applied to increase the participation of local communities in the planning and implementation of adaptation in Angola. To increase the consideration of traditional and local knowledge in Angola's NAP process, the following approaches will be applied:

- Offer training that bridges different knowledge systems, promoting mutual understanding and respect;
- Facilitate intercultural dialogue to enhance collaboration between scientific, traditional, and local knowledge holders
- Promote active participation of local communities through participatory approaches;
- Apply community-based adaptation and locally led adaptation as key entry points for implementing adaptation actions;
- Co-create adaptation solutions with local communities, incorporating their knowledge systems into decision-making processes;
- Establish deep, respectful, and equitable partnerships between local communities and adaptation actors;
- Consider traditional and local knowledge and practices at every stage of the NAP process—from initiation and data collection to implementation, monitoring, evaluation, and replanning;
- Acknowledge and strengthen local governance structures to support collective decision-making and ensure inclusive adaptation planning and implementation;
- Integrate traditional and local knowledge into the monitoring, evaluation, and learning (MEL) system of the NAP process; and
- Develop and apply disaggregated indicators to track the progress of adaptation actions informed by or implemented by local communities.

## 6 Key Climate Risks, Vulnerabilities and Adaptation Needs

This chapter presents an overview of Angola's current climate change-related vulnerabilities and key risks, as well as its projected future vulnerabilities, risks, and potential impacts and losses.

The chapter presents a summary of the data and information available on climate change risks in Angola based on the evidence available to date. This preliminary assessment outlines Angola's current understanding of climate risks, which will inform the adaptation measures undertaken in response.

### 6.1 Current Situation: Angola's Historical and Present Climate Trends

This section provides a concise overview of Angola's historical and current climate trends. For more detailed information, see Angola's Second National Communication to the UNFCCC.<sup>31</sup>

Angola is a southern African country with 1,650 km of Atlantic maritime coastline and land border of 4,837 km, bordering the Republic of Congo, the Democratic Republic of Congo, the Republic of Zambia, and Namibia.

Angola has a semiarid, narrow coastal region with average annual rainfall of 600 mm, with higher rainfall in the north and lower rainfall in the south. Its interior plateau is divided into three agro-ecological zones:

- A warm and humid northern zone characterized by heavy rainfall exceeding 1,500 mm per year and consistently high average temperatures above 22°C;
- A central zone with a tropical climate moderated by elevations ranging from 1,000 to 2,500 meters, receiving between 1,250 and 1,500 mm of rainfall annually and experiencing average temperatures of 18°C to 20°C;
- A semi-arid southwestern zone near the Kalahari Desert, where tropical continental air masses and the Benguela Cold Current contribute to relatively low temperatures during the hot season.<sup>32</sup>

Angola's seasonal temperatures do not range widely between its two seasons: a cooler, drier season *Cacimbo* (June-September) and the rainy season (October-May) which is warmer and more humid.

Angola has conducted several studies and assessments at the national and local<sup>33</sup> levels to identify climate impacts, risks, and vulnerabilities, which have been published in its Initial National Communication (2012)<sup>34</sup>, Second National Communication (2021)<sup>35</sup>, Nationally Determined Contributions (2025)<sup>36</sup>, and National Strategy on Climate Change 2022-2035.<sup>37</sup>

## Temperature Trends

Since 1951, Angola's average annual temperature has risen by approximately 0.2°C per decade, amounting to a total increase of 1.4°C since the mid-20th century. The country's climate zones range from arid to temperate to tropical. As part of the World Bank's *Angola Country Climate and Development Report* (2022), a climate assessment was carried out analyzing past climate trends and projecting future changes in temperature and rainfall up to 2060.<sup>38</sup> The results confirm that Angola has been warming since the mid-

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<sup>31</sup> Republic of Angola, *Second National Communication* (Luanda: Government of Angola, 2021).

<sup>32</sup> United States Agency for International Development (USAID), *Climate Risk Profile: Angola* (2018), <https://www.preventionweb.net/publication/climate-risk-profile-angola>

<sup>33</sup> E.g., John Mendelsohn, Paulo Calunga, Tuwilika Haludilu, Nasso Soares, and Beat Weber, *Vulnerability in the Cuvelai Basin* (Windhoek: RAISON, 2015).

<sup>34</sup> Republic of Angola, *Second National Communication under the United Nations Framework Convention on Climate Change* (Luanda: Ministry of Culture, Tourism and Environment, 2021).

<sup>35</sup> Republic of Angola, *Initial National Communication under the United Nations Framework Convention on Climate Change* (Luanda: Ministry of Environment, 2012)

<sup>36</sup> Republic of Angola, 2021: Nationally Determined Contributions of Angola. <https://unfccc.int/sites/default/files/NDC/2022-06/NDC%20Angola.pdf>

<sup>37</sup> Republic of Angola, *National Climate Change Strategy (ENAC) 2022–2035* (Luanda: Ministry of Environment, 2018), 35.

<sup>38</sup> The World Bank, *Angola Country Climate and Development Report* (Washington, DC: The World Bank Group, 2022), 13, <https://documents1.worldbank.org/curated/en/099150012022242096/pdf/P1769171f457c3010198d31b375aadd937.pdf>

1900s, with a notable acceleration in recent years. These findings are consistent with those of the IPCC<sup>39</sup>, which reports that mean annual temperatures in Southern Africa rose by 1.04–1.44°C between 1961 and 2015, alongside an increase in the number of hot days.

## Precipitation Trends

The World Bank climate assessment<sup>40</sup> noted significant variability in both the direction and intensity of precipitation changes. Southern Angola has been particularly affected, facing severe droughts over the past three decades. The country's rainy season typically spans from October to April, corresponding with the movement of the Inter-Tropical Convergence Zone (ITCZ) across the region. Both temperature and rainfall fluctuate from year to year and over longer periods, influenced by broad atmospheric systems and evolving conditions in the cool South Atlantic Ocean. In the 1980s and 1990s, some areas of southern Angola experienced unusually dry conditions, followed by wetter periods in the 2000s and 2010s, while other areas showed the reverse pattern.

## 6.2 Future National Climate Projections

### 6.2.1 Temperature Projections

Temperatures in Angola are expected to continue rising, especially under a high-emissions scenario, while future rainfall patterns remain highly uncertain. The World Bank<sup>41</sup> assessed two climate scenarios: a moderate emissions pathway (RCP4.5) and a high-emissions pathway (RCP8.5). Under both scenarios, models indicate that average annual temperatures across most of Angola will be 1–1.5°C higher in the 2020–2040 period compared to the 1981–2010 baseline. By 2040–2060, under RCP4.5, most of the country is expected to warm by 1.5–2°C. Under RCP8.5, temperatures are projected to rise by 2–2.5°C, with some southern areas reaching increases of 2.5–3°C, excluding coastal regions.

These changes have major implications for water resources, drought intensity, and localized extreme heat. Additional research referenced by the IPCC shows that even if global warming is limited to 1.5°C, individuals born in Angola in 2020 will face 7–8 times more heatwaves over their lifetime compared to those born in 1960. Under current climate pledges, which imply around 2.4°C of global warming, that number could exceed 10 times more.

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<sup>39</sup> Intergovernmental Panel on Climate Change, *Climate Change 2022: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* (Cambridge: Cambridge University Press, 2022), [https://www.ipcc.ch/report/ar6/wg2/downloads/report/IPCC\\_AR6\\_WGII\\_FrontMatter.pdf](https://www.ipcc.ch/report/ar6/wg2/downloads/report/IPCC_AR6_WGII_FrontMatter.pdf), doi:10.1017/9781009325844.

<sup>40</sup> World Bank Group, 2022: *Angola Country Climate and Development Report A*. Washington, DC 20433. <https://documents1.worldbank.org/curated/en/099150012022242096/pdf/P1769171f457c3010198d31b375aadd937.pdf>

<sup>41</sup> World Bank Group, 2022: *Angola Country Climate and Development Report A*. Washington, DC 20433. <https://documents1.worldbank.org/curated/en/099150012022242096/pdf/P1769171f457c3010198d31b375aadd937.pdf>

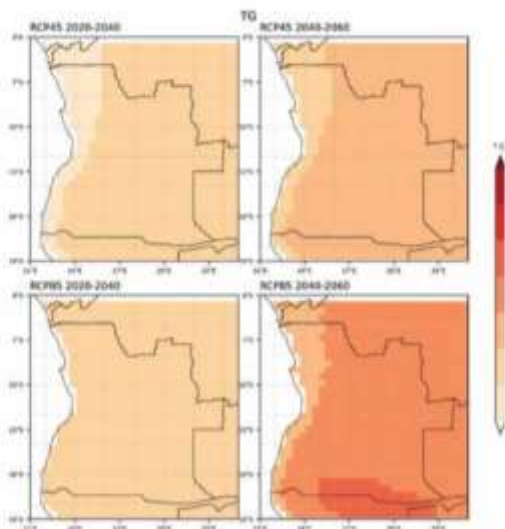


Figure 3: Projected change in mean annual temperature across Angola relative to the 1980–2010 average in 2040–2049 and 2050–2059 in a moderate- and high-emissions scenario (RCP4.5 and 8.5)<sup>42</sup>

### 6.2.1. Precipitation Projections

The World Bank analysis<sup>43</sup> of future rainfall projections found:

“Future rainfall projections vary greatly by province. Overall, there may be a shortening and intensification of the wet season, but with little overall effect on total annual rainfall, with these seasonal differences in rainfall likely stronger in the western part of the country. For some basins, such as Cuvelai, the models are highly uncertain on both the direction and magnitude of change. Most basins, however, are likely to have generally decreasing water availability, with the notable exception of the North Coast, where models show water availability is more likely to increase.

The severity of heavy precipitation events is projected to increase, though rainfall events will likely be less frequent, with longer dry periods in between. Future extreme storm risk (expressed as the maximum five-day precipitation index) is projected to be 5–10 percent higher in 2020–2049 than the 1981–2010 average, rising to 10–15 percent higher in some regions for the period 2050–2059 under RCP8.5 [Figure 4]. Dry extremes (expressed as the consecutive dry-day index) are also projected to increase consistently across the country. The increases of dry extremes are higher and statistically significant in the southern regions of Angola, particularly in the period 2050–2059 under RCP8.5.”

<sup>42</sup> World Bank Group, 2022: *Angola Country Climate and Development Report A*. Washington, DC 20433. <https://documents1.worldbank.org/curated/en/099150012022242096/pdf/P1769171f457c3010198d31b375aadd937.pdf>

<sup>43</sup> World Bank Group, 2022: *Angola Country Climate and Development Report*. Washington, DC 20433. <https://documents1.worldbank.org/curated/en/099150012022242096/pdf/P1769171f457c3010198d31b375aadd937.pdf>

A 2019 analysis<sup>44</sup> reported that between 1979 and 2018, an average of 7.5 percent of Angola’s population was impacted by droughts. However, in the latter half of this century, that proportion could increase to 13 percent—affecting approximately 8 million Angolans annually. Additionally, the regions affected by drought are projected to include the southern provinces of Huila, Cunene, and Namibe, as well as expanding further north and east.

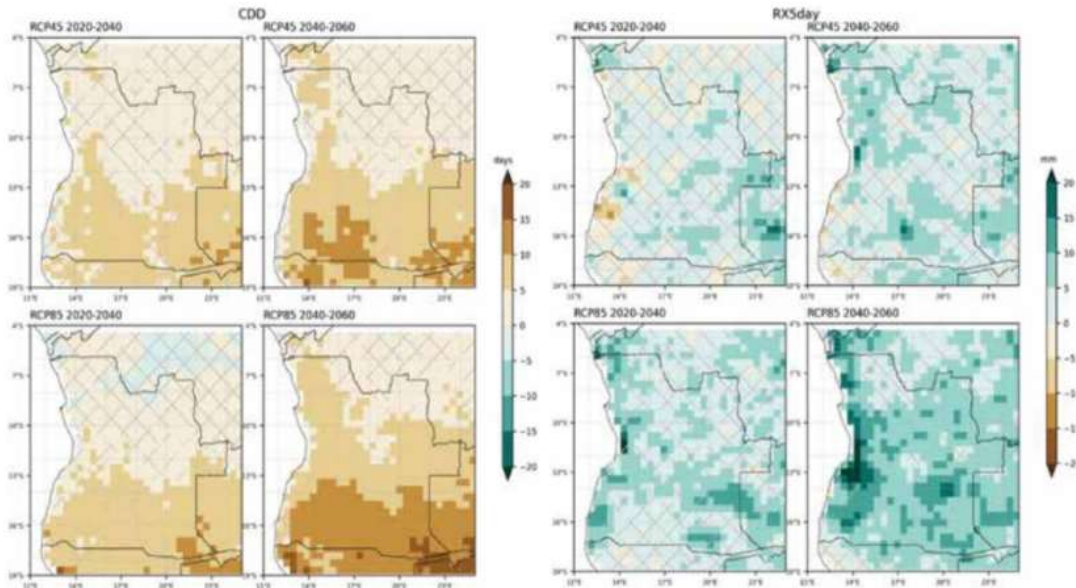


Figure 4: Projected future change in extremes in Angola: consecutive dry-day index (left) and maximum five-day precipitation (right)<sup>45</sup>.

### 6.2.1. Summary of Projections by Climate Variable

Angola’s 2019 adaptation plan for the Coastal Zone sector<sup>46</sup> and 2025 NDC<sup>47</sup> provide the following summary of projections of climate variables.

Table 9: Summary of projections by climate variable<sup>48</sup>

<sup>44</sup> Roberto Rudari et al., *Disaster Risk Profile – Angola* (Geneva: United Nations Office for Disaster Risk Reduction – Regional Office for Africa & CIMA Foundation, 2019), <https://www.undrr.org/publication/disaster-risk-profile-angola>

<sup>45</sup> World Bank Group, 2022: *Angola Country Climate and Development Report A*. Washington, DC 20433. <https://documents1.worldbank.org/curated/en/099150012022242096/pdf/P1769171f457c3010198d31b375aadd937.pdf>

<sup>46</sup> República de Angola, *Plano de Adaptação às Alterações Climáticas da Zona Costeira de Angola* (Luanda: República de Angola, Novembro 2019), [https://info.undp.org/docs/pdc/Documents/AGO/Get2C\\_ProdutoIV.1%20-%20Final%20Draft.pdf](https://info.undp.org/docs/pdc/Documents/AGO/Get2C_ProdutoIV.1%20-%20Final%20Draft.pdf)

<sup>47</sup> Republic of Angola, *Nationally Determined Contribution (NDC 3.0)* (Luanda: Republic of Angola, September 2025), [https://unfccc.int/sites/default/files/2025-09/Angola%20NDC\\_September2025\\_Upload.pdf](https://unfccc.int/sites/default/files/2025-09/Angola%20NDC_September2025_Upload.pdf).

<sup>48</sup> Excerpt from the Republic of Angola’s NDC. Adapted from:

Carvalho, S. C. P., Santos, F. D., & Pulquério, M. 2017: Climate change scenarios for Angola: an analysis of precipitation and temperature projections using four RCMs. *International Journal of Climatology*, 37(8), 3398-3412. [https://www.researchgate.net/publication/310836435\\_Climate\\_change\\_scenarios\\_for\\_Angola\\_an\\_analysis](https://www.researchgate.net/publication/310836435_Climate_change_scenarios_for_Angola_an_analysis)

| Climate variable               | Condition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Trend                                                                                                       |
|--------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| <b>Air temperature</b>         | The average global temperature of the earth's surface is likely to exceed, by the end of the 21st century, 1.5 °C with respect to temperatures registered in the 1850-1900 period.                                                                                                                                                                                                                                                                                                                                                       | Increase                                                                                                    |
| <b>Sea water temperature</b>   | Positive changes in the temperature of the water in the cold Benguela current may affect outcrop pulses in the planktonic system. There is shading of effects and causes with the condition of the ichthyofauna and the activities of commercial overfishing in the area, as well as secular variations typical of marine dynamics.                                                                                                                                                                                                      | Slight increase or stability in the behavior of the phenomenon, but with uncertain effects                  |
| <b>Sea current temperature</b> | A tropicalization of the equatorial heating zone of the cold Benguela current is expected by 2050. However, the heating of the Benguela current, as well as new phenomena such as El Niño de Benguela, respond to secular dynamics that cannot yet be statistically separated from each other possible consequences of global warming.                                                                                                                                                                                                   | Stability in the behavior of the phenomenon, but with sub-dimensioning of data to establish effects arising |
| <b>Precipitation</b>           | <p>A decrease in average annual rainfall in the south and north of the country and an increase in the central coast is expected. In monthly terms, a decrease is expected in the driest months, extending the dry season to the months of April and October.</p> <p>The maximum daily precipitation is expected to increase throughout the territory, this increase being more accentuated in the coastal zone. In the South, precipitation episodes will decrease by the end of the century but will be more intense in the future.</p> | Increase                                                                                                    |
| <b>Sea Level Rise (SLR)</b>    | Average sea level increase until the year 2100 is between 0.26m and 0.77m, considering the 67% confidence interval, between 17% and 84%. Already incorporating an increase in the global average temperature between 1.5 °C and 2.0 °C, the increase in sea level would be                                                                                                                                                                                                                                                               | Slight increase or stability in the behavior of the phenomenon, but with uncertain effects                  |

#### [s of precipitation and temperature projections using four RCMs CLIMATE CHANGE SCENARIOS FOR ANGOLA](#)

GeoGestão, 2019: Componente I — avaliação dos impactos biofísicos das alterações climáticas nos principais sectores da zona costeira de Angola, Projecto Orla, resposta às necessidades urgentes de adaptação costeira e às lacunas de capacidade em Angola.

GeoGestão, 2019: Component II — approximate economic assessment of climate change impacts and cost-benefit analysis of identified adaptation measures, Projecto Orla, response to urgent coastal adaptation needs and capacity gaps in Angola.

|                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                             |
|---------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|
|                                                   | between 0.35m and 0.93m for the same confidence interval.                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                             |
| <b>Wind direction</b>                             | No drastic changes expected. Local phenomena produced by urban corridors may have a specific impact, more linked to the effects of urbanization than global warming.                                                                                                                                                                                                                                                                                                                                             | Slight increase or stability in the behavior of the phenomenon, but with uncertain effects. |
| <b>Direction of sea currents</b>                  | No drastic changes anticipated in terms of direction. Variability can be recorded in terms of vertical adjustments resulting from changes in temperature.                                                                                                                                                                                                                                                                                                                                                        | Slight increase or stability in the behavior of the phenomenon, but with uncertain effects. |
| <b>Rainwater pH due to anthropogenic activity</b> | Linked to the emission into the atmosphere of compounds derived from fossil fuels or the possible mining of sulfur compounds in the open.                                                                                                                                                                                                                                                                                                                                                                        | Increase                                                                                    |
| <b>Rainwater pH by natural effects</b>            | No drastic changes predicted by natural conditions. Anthropogenic action would be primarily responsible.                                                                                                                                                                                                                                                                                                                                                                                                         | Slight increase or stability in the behavior of the phenomenon, but with uncertain effects  |
| <b>Occurrence and intensity of extreme events</b> | <p><b>Drought:</b> will tend to increase in frequency and intensity in multiple regions across the country</p> <p><b>Floods:</b> Expected to increase the frequency of floods as well as their intensity, however interspersed with more consolidated periods of drought.</p> <p><b>Heat waves:</b> Expected to increase the frequency</p> <p><b>Storm surges:</b> Expected to increase the frequency</p> <p><b>Wildfires:</b> As global temperatures rise, wildfires are getting more frequent and intense.</p> | Increase                                                                                    |
| <b>Ocean acidification</b>                        | The ocean has been playing an important role in helping slow down global climate change by removing the greenhouse gas carbon dioxide (CO <sub>2</sub> ) from the atmosphere. However, decades of ocean observations show that the CO <sub>2</sub> absorbed by the ocean is changing the chemistry of seawater. When seawater absorbs carbon dioxide, its acidity is increased.                                                                                                                                  | Increase                                                                                    |

In addition to the hazards listed above, further hazards and related impacts that Angola is projected to face include:

- Increased soil instability and landslide
- Increased susceptibility to desertification and soil erosion
- Increased frequency and intensity of rural fires
- Electricity supply instability
- Biodiversity loss
- Health risks and disease transmission
- Acidification of the sea and fresh water
- Erosion of riverbeds and consequent sediment accumulation in estuaries

## 6.3 Key Risks and Vulnerabilities Related to Hazards

### Key Impacts at National Level Related to Climate Hazards

The National Climate Change Strategy 2022-2035<sup>49</sup> identifies risks and vulnerabilities associated with the types of hazards summarized in the preceding section on Angola's people, ecosystems, and economy.

**Floods:** Due to the abundance of natural resources, communities in rural regions, often settle near riverbeds, benefiting from fishing and fertile soil for agriculture. However, these locations are particularly vulnerable during floods, which can destroy crops, damage property, and contribute to the spread of disease. Based on the country's identified risk zones (Figure 5), there is a higher population concentration near the Kwanza River basin, increasing the potential for significant damage and losses during extreme weather events. Residents along the Zambezi and Cunene rivers, as well as those in the provinces of Cunene, Moxico, Cuando, and Cubango, have reported more frequent and severe flooding in recent years. Major floods have especially hard hit the Cuanhama basins and the city of Ondjiva over the past decade.

The 2015 El Niño event impacted at least 1.4 million people across seven provinces, with 78 percent located in southern Angola's Cunene, Huila, and Namibe regions. In urban centers such as Luanda, Benguela, and Namibe, floods have caused extensive destruction of homes and businesses and long-term disruptions to transportation—largely due to urban expansion into flood-prone zones.

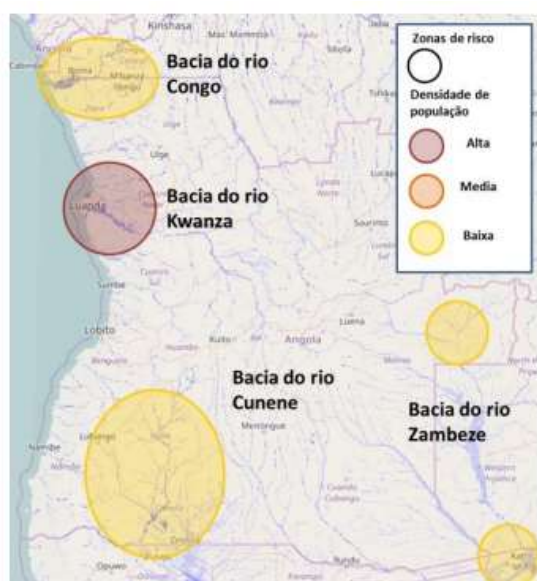


Figure 5: Flood risk zones in Angola<sup>50</sup>.

**Droughts:** Significant areas of Angola are classified as facing a high risk of drought (see Figure 6). The National Civil Protection Committee (CNPC) estimates that approximately 43 percent of those impacted by

<sup>49</sup> República de Angola, *Estratégia Nacional para as Alterações Climáticas (ENAC) 2022-2035* (Luanda: República de Angola, 2022),

<sup>50</sup> Republic of Angola, *National Climate Change Strategy (ENAC) 2022-2035* (Luanda: Ministry of Environment, 2018), 35.

drought could face food insecurity. In the Cunene region, surface water is saline, and drinkable water is believed to be located at depths of around 250 meters. Expected changes in temperature and rainfall patterns are likely to affect the frequency and severity of extreme droughts, especially in the southern, central, and western parts of the country, as illustrated in Figure 7.

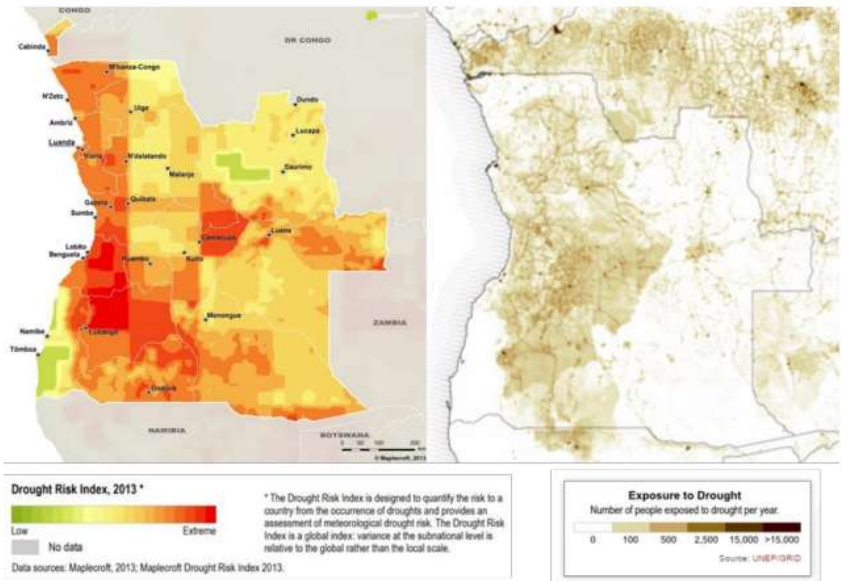


Figure 6: Drought risk zones in Angola<sup>51</sup>.

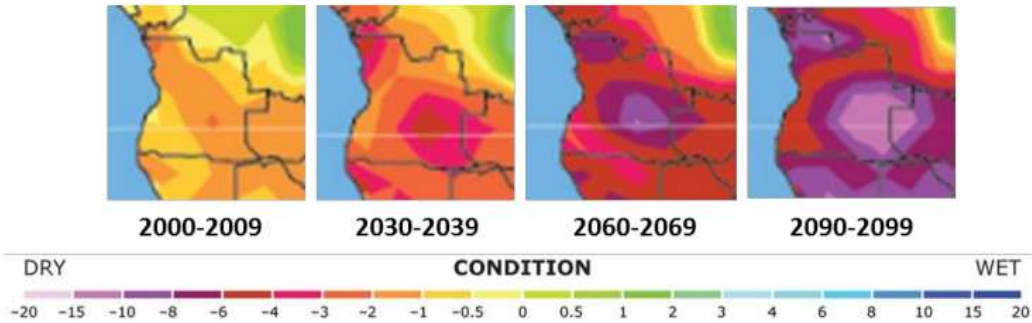


Figure 7: Projections of drought risk in Angola due to climate change<sup>52</sup>.

**Sea-level rise:** Sea-level rise (SLR) is projected to significantly affect coastal areas, which are home to over half of the country’s population, posing risks to housing, transportation networks, and industrial and

<sup>51</sup> Republic of Angola, *National Climate Change Strategy (ENAC) 2022–2035* (Luanda: Ministry of Environment, 2018), 35.

<sup>52</sup> Republic of Angola, *National Climate Change Strategy (ENAC) 2022–2035* (Luanda: Ministry of Environment, 2018), 35.

commercial infrastructure<sup>53</sup>. According to the IPCC Atlas, a moderate emissions scenario anticipates sea-level rise in western southern Africa of approximately 0.1 meters in the near term (2021–2040), 0.3 meters in the mid-term (2041–2060), and up to 0.6 meters by the end of the century (2081–2100). Reflecting trends observed over the past decade, flooding is expected to become more frequent and intense, particularly in coastal zones, during all seasons except for June to August.

**Heat waves, exacerbated by the urban heat island effect:** A study examining over 150 major African cities estimates that, by the end of this century, the number of people exposed to hazardous heat conditions could be 20 to 52 times greater than today<sup>54</sup>. Among the five cities most at risk, Luanda shows the greatest relative increase compared to historical levels. The 2011 African Green City Index reported that Luanda has under 1 square meter of green space per person—significantly lower than cities such as Dar es Salaam (64.1 m<sup>2</sup>), Nairobi (37.3 m<sup>2</sup>), and Addis Ababa (36.5 m<sup>2</sup>), and far below the World Health Organization’s recommended 9 m<sup>2</sup> per capita. The urban heat island effect, linked to higher energy demand for cooling, increased air pollution, and greater heat-related illness and mortality, is expected to intensify with ongoing climate change.

## 6.4 Impacts and Vulnerabilities by Gender, Social, and Geographic Factors

Gender and social inequalities influence the degree to which people are vulnerable to the impacts of climate change, and their capacity to adapt.<sup>55</sup> Angola’s adaptation planning process aims to be gender responsive and socially inclusive, considering how its people’s needs differ depending on gender as well as other factors such as age, location, race, wealth, ethnicity, and sexual orientation.

### 6.4.1 Children, Youth, and the Elderly

Children and young people in Angola are both highly exposed and highly vulnerable to the impacts of climate change, putting Angola at the 10<sup>th</sup> position at the “extremely high risk” according to the UNICEF’s Children’s Climate Risk Index<sup>56</sup>. Children’s vulnerability to climate change is heightened due to high rates of child poverty with about 40 percent of children living in households in extreme poverty<sup>57</sup>. With chronic

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<sup>53</sup> World Bank Group, 2022: *Angola Country Climate and Development Report*. Washington, DC 20433. <https://documents1.worldbank.org/curated/en/099150012022242096/pdf/P1769171f457c3010198d31b375aadd937.pdf>

<sup>54</sup> World Bank Group, 2022: *Angola Country Climate and Development Report*. Washington, DC 20433. <https://documents1.worldbank.org/curated/en/099150012022242096/pdf/P1769171f457c3010198d31b375aadd937.pdf>

<sup>55</sup> NAP Global Network and UNFCCC, *Toolkit for a Gender-Responsive Process to Formulate and Implement National Adaptation Plans (NAPs)*, A. Dazé and C. Church, lead authors (Winnipeg: International Institute for Sustainable Development, 2019), [www.napglobalnetwork.org](http://www.napglobalnetwork.org)

<sup>56</sup> UNICEF, *The Climate Crisis is a Child Rights Crisis: Introducing the Children’s Climate Risk Index* (New York: United Nations Children’s Fund [UNICEF], 2021), <https://www.unicef.org/media/105376/file/UNICEF-climate-crisis-child-rights-crisis.pdf>

<sup>57</sup> UNICEF. (n.d.). *Child Related SDG Progress Assessment - Angola*. Retrieved July 30, 2025, from <https://data.unicef.org/sdgs/country/ago/>

malnutrition already affecting 40 percent of children under 5<sup>58</sup>, children will also be particularly susceptible to increased food insecurity due to climate impacts on agriculture and subsequent crop losses. Climate change threatens the realization of children's rights and disrupts access to education. This is particularly relevant as 3.8 million children are already out-of-school in Angola<sup>59</sup>. Education is also a protective factor that can increase children and young people's adaptive capacity.

The inclusion and engagement of children and young people in adaptation planning is also critical to ensure that their unique needs and priorities are considered. Angola has made great steps on meaningful engagement of youth in climate actions by organizing in 2023 the first National Forum on Youth and Climate. As a result of it a "Youth and Climate Action Plan"<sup>60</sup> has been developed. The planned actions engage youth at the national and provincial levels in opportunities for learning, exchanging information about traditional knowledge and practices, and understanding the challenges while exploring solutions for climate impacts.

Elderly persons in Angola also face heightened risks from climate change due to health-related vulnerabilities, limited mobility, and access to information and emergency services.

## 6.4.2 Gender

Women, men, girls, boys, and gender-diverse groups experience the impacts of climate change differently due to unequal access to resources, decision-making power, and livelihoods. In Angola, 82 percent of women workers were concentrated in nonwage jobs as compared to 57 percent of male workers. Many women play a role as both the earner and the caretaker of the family, forcing them into unstable jobs such as street vendors.<sup>61</sup> The lack of economic opportunities and social protections makes women more vulnerable when facing climate hazards, disasters, and forced migration.

Gender inequality in Angola is also reflected by the prevalence of gender-based violence and limited access to sexual reproductive health services. The fertility rate in Angola is estimated to be 5.12 births per woman, and only 50% of births are attended by skilled health personnel.<sup>62</sup> 32% of Angolan women are estimated to have suffered physical violence since the age of 15.<sup>63</sup>

Climate-induced disasters such as infectious diseases have serious consequences on maternal-fetal and child health and increase the risks of gender-based violence.<sup>64</sup> In this context, safeguarding maternal and reproductive health, guaranteeing equitable access to health, strengthening the leadership of women and men in community-based resource governance, and ensuring that women (who are often primary users and custodians of forest, fuelwood, and non-timber resources) gain secure rights, equitable benefits, and decision-making power in conservation and restoration initiatives.

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<sup>58</sup> World Food Programme. (2024). *Angola Annual Country Report 2024*. [https://docs.wfp.org/api/documents/WFP-0000165340/download/?\\_ga=2.57588399.421447173.1753774239-1890567658.1753774239](https://docs.wfp.org/api/documents/WFP-0000165340/download/?_ga=2.57588399.421447173.1753774239-1890567658.1753774239)

<sup>59</sup> United Nations Children's Fund, *UNICEF Angola Annual Report 2024* (New York: UNICEF, February 2025)

<sup>60</sup> Ibid.

<sup>61</sup> World Bank. *Navigating Education, Motherhood, and Informal Labor: The Experiences of Young Women in Luanda*. Washington, DC: World Bank, 2023, <https://openknowledge.worldbank.org/entities/publication/277c07ed-81ac-4c3a-a085-1ead729d14af>

<sup>62</sup> United Nations Population Fund. (n.d.). *World population dashboard: Angola*. <https://www.unfpa.org/data/world-population/AO>

<sup>63</sup> UN Women, *Angola Country Profile*, <https://data.unwomen.org/country/angola>.

<sup>64</sup> C. McLeod, H. Barr, and K. Rall, "Does Climate Change Increase the Risk of Child Marriage: A Look at What We Know and What We Don't with Lessons from Bangladesh and Mozambique," *Columbia Journal of Gender and Law* 38 (2019): 96–146.

### 6.4.3 Urban Populations

Urban populations, especially the poorest households and those living on marginal land, are highly exposed to several climate hazards. Moreover, their well-being and livelihoods depend on urban infrastructure, supply chains, and public services that are at high risk from climate change impacts. Key climate vulnerabilities include but are not restricted to: 1) urban flooding impacting housing and infrastructure; 2) droughts impacting urban water supply; 3) heatwaves exacerbated by the urban heat island (UHI) effect, increasing energy costs from air conditioning use and air pollution, as well as heat-related illness and mortality; and 4) public health risks including rising incidence of diarrhoeal disease and malaria, already amongst Angola's leading causes of death.<sup>65 66</sup>

### 6.4.4 Persons with Disabilities

An estimated 2.5% of Angolans live with disabilities (56 percent were men and 44 percent were women).<sup>67</sup> Recognizing the heightened vulnerability that people living with disabilities face with regard to climate change impacts,<sup>68</sup> further study is needed to better understand these risks and vulnerabilities in Angola to design appropriate adaptation measures.

### 6.4.5 Local communities

Angola's local communities include the San, the Himba, and other groups, including the Kwisi, the Kwepe, the Kuvale, and the Zemba. Local communities face distinct vulnerabilities to climate change due to their vulnerability and the natural ecosystems for their livelihoods. Further study is needed to better understand climate change risks and vulnerabilities facing local communities in Angola to design appropriate adaptation measures.

## 6.5 Overview of climate change impacts and vulnerabilities by sector

Angola's NAP focuses on nine priority sectors: 1) Agriculture and Food Systems; 2) Fisheries; 3) Coastal Zones; 4) Forest, Ecosystem and Biodiversity; 5) Water resources; 6) Human Health; 7) Infrastructure; 8) Disaster Risk Reduction; and 9) Cross-cutting considerations. Further sectors shall be engaged in in future through Angola's iterative adaptation planning process.

The Pressure-State Impact Response (PEIR) methodology was applied in Angola to assess climate change impacts by sector to assist with the identification of sectoral adaptation priorities. This section includes information from the PEIR exercise pertaining to impacts by sector. Proposed 'responses' are not included

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<sup>65</sup> C. Caminade et al., "Impact of Climate Change on Global Malaria Distribution," *Proceedings of the National Academy of Sciences of the United States of America* 111, no. 9 (March 4, 2014): 3286–91, <https://doi.org/10.1073/pnas.1302089111>

<sup>66</sup> World Bank Group, *Angola Country Climate and Development Report*, CCDD Series (Washington, DC: World Bank, 2022), <https://hdl.handle.net/10986/38361>

<sup>67</sup> United Nations Office of the High Commissioner for Human Rights, "Experts of the Committee on the Rights of Persons with Disabilities Commend Angola on Moves to Develop Disability Legislation, Ask Questions on Accessibility and Inclusion in Decision-Making Processes," OHCHR, March 9, 2023, <https://www.ohchr.org/en/meeting-summaries/2023/03/experts-committee-rights-persons-disabilities-commend-angola-moves>

<sup>68</sup> Sébastien Jodoin et al., *Disability Rights in National Climate Policies: Status Report* (Center for Human Rights & Legal Pluralism and International Disability Alliance, November 2022).

below to avoid confusion with the adaptation measures and responses presented later in this document. For more information, see Angola's Second National Communication.<sup>69</sup>

Table 10: Overview of Pressure, State, and Impact by Sector Based on the PEIR Methodology.

| Sector                 | Pressure                                                             | State                                                                                                                                                                                        | Impact                                                                                                                                                                                           |
|------------------------|----------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Agriculture</b>     | Increase in air temperature.                                         | Change in vulnerability of temperature patterns and extremely hot days and nights; increase in water demand in agriculture.                                                                  | Increase in taxes of evaporation and decreased soil moisture; increased water scarcity.                                                                                                          |
|                        | Decrease in total rainfall.                                          | Decrease in water availability in agriculture, low soil fertility.                                                                                                                           | Possibility of decreased yields for some crops; increase in hunger and malnutrition/food insecurity.                                                                                             |
|                        | Increase in drought.                                                 | More impoverished soils; reduction of water availability in agriculture; reduction of the productive potential of soils.                                                                     | Total loss of crops; reduction of the yields of some crops; increase of the hunger and malnutrition/food insecurity; impact in human health and animals that become more vulnerable to diseases. |
|                        | Intensification of flooding.                                         | Increase of water availability; erosion and soil impoverishment; soil inundation.                                                                                                            | Increase of the inundations; reduction of some income; hunger increase, malnutrition/food insecurity.                                                                                            |
| <b>Fisheries</b>       | Wind and temperature regime; availability of water (inland fishing). | Changes in biodiversity and productivity; changes in habitats at sea and in continental fisheries could lead to changes in the availability and distribution of major fisheries resources.   | Increased hunger and malnutrition/food insecurity; impact on fish prices.                                                                                                                        |
|                        | Increase in average sea level.                                       | Changes in the availability and distribution of the main fisheries resources, in particular continental fisheries.                                                                           | Increased hunger and malnutrition/food insecurity; impact on fish prices.                                                                                                                        |
| <b>Water Resources</b> | Increase in air temperature.                                         | Risk of floods and droughts; precarious housing and peri-urban areas very dense disorderly population clusters in some peri-urban areas; deficient urban planning through various practices. | Loss of harvest; hunger; inundations; social and economic losses.                                                                                                                                |
| <b>Coastal Zones</b>   | Rise in average sea level.                                           | Loss/removal of coastal ecosystems with vegetation; increasing the frequency and intensity of extreme coastal drifting and erosion phenomena.                                                | Decrease in carbon absorption; material damage; exacerbation of extreme sea levels and coastal risks; impacts on habitat and biodiversity as well as on ecosystem functioning.                   |

<sup>69</sup> Republic of Angola, *Second National Communication* (Luanda: Government of Angola, 2021), <https://unfccc.int/sites/default/files/resource/ANGOLA%20SNC.pdf>.

|                                               |                                |                                                                                                                                     |                                                                                                                                            |
|-----------------------------------------------|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
|                                               | Decrease in total rainfall.    | Reduction of water availability; changes in hydrological regime; changes in the distribution and availability of fishery resources. | Changes in the structure of the estuaries; loss of coastal wetlands; increased vulnerability to saltwater intrusion.                       |
|                                               | Increased convective rainfall. | Acceleration of coastal erosion process; removal of vegetation cover.                                                               | Destruction of natural defenses; increased flood risk especially at high tide; increased risk of flooding; pollution of freshwater bodies. |
| <b>Forestry, Ecosystems, and Biodiversity</b> | Increase in air temperature.   | Increasing the frequency and intensity of forest fires; appearance of invasive species.                                             | Considerable biomass losses; carbon emissions; change in ecosystem structure and function.                                                 |
|                                               | Decrease in total rainfall.    | Alteration of forest ecosystems and of flora and fauna which serve as a source of protein and medicines for human populations.      | Increased hunger and malnutrition/food insecurity; change in ecosystem structure and function.                                             |
|                                               | Increase in drought.           | Deforestation; to obtain pasture and farmland.                                                                                      | Possibility of considerable biomass losses; possibility of increased desertification; impact on tourism.                                   |
|                                               | Intensification of flooding.   | Destruction of fragile forest ecosystems; emergence of invasive species.                                                            | Change in the structure and function of the ecosystem; material damage; change in forest composition.                                      |
|                                               | Increase in mean sea level     | Destruction of ecosystems such as mangroves and other coastal forests; soil salinization.                                           | Change in the structure and function of the ecosystem; material damage.                                                                    |
| <b>Health</b>                                 | Not available.                 | Not available.                                                                                                                      | Not available.                                                                                                                             |
| <b>Infrastructures</b>                        | Not available.                 | Not available.                                                                                                                      | Not available.                                                                                                                             |

### 6.5.1. Agriculture

The agricultural sector relies heavily on the climate and is therefore highly susceptible to the impacts of climate change<sup>70</sup>. At the same time, it plays a vital role in enhancing the population's overall nutritional well-being. In recent decades, extreme climate fluctuations have endangered rural food security, leading to greater crop losses caused by severe weather events.

The extended drought periods, particularly affecting the southern regions, have led to reduced water availability, severely impacting agriculture and livestock. Projected temperature increases are expected to accelerate evaporation, resulting in lower soil moisture and decreased yields for certain crops. Consequently,

<sup>70</sup> Republic of Angola, *Second National Communication* (Luanda: Government of Angola, 2021), <https://unfccc.int/sites/default/files/resource/ANGOLA%20SNC.pdf>.

these changes are likely to cause crop losses, heightened hunger and malnutrition, and greater vulnerability of both humans and animals to diseases.

Direct economic losses in Angola's agricultural sector due to climate change from droughts could increase from as much as USD100 million per year today to more than USD700 million per year nationwide by 2100 (a sevenfold rise)<sup>71</sup>. Climate change is likely to affect the agriculture sector's potential contribution to the country's economic growth and poverty reduction. The most significant economic losses will be concentrated in the central, eastern, and northern regions of the country, where negative climate impacts have been less severe in the past, but will likely range between USD45 million and USD100 million per year in multiple provinces. Total economic losses due to drought are driven by losses in agricultural production (comprising 75 percent of average annual loss).

Annually, over 35 percent of the country's total crop area is exposed to drought, and only a fraction of the country's arable land is irrigated. Recent modelling presented on the World Bank Climate Knowledge Portal shows all provinces are likely to see decreased early-season rainfall (September– November period) by the 2060s, and there is some likelihood that rainfall in March–May will also decrease. A shorter, more concentrated rainy season would negatively affect the growth cycles of most crops. An increase in the magnitude (high likelihood) and extent of droughts (medium likelihood) would likely have devastating impacts on agriculture.

The most negatively impacted crops will be maize, beans, and groundnuts, all critical crops for food security and nutrition in Angola. Cassava, millet, sorghum, and banana, which are more drought-tolerant crops, will be less impacted, and more climate-resilient crops like cassava will largely see an increase in suitability, especially in the central regions. Southern regions will generally become less suitable for crop production, with Namibe, Bie, Bengo and Moxico most affected.

In Angola today, land tenure and land management, resource tenure, agricultural development, and the integration of environmental sustainability are regulated and managed in a limited or inadequate way and need to be implemented/executed. Resource rights are essential to the promotion of sustainable land and resource management.

The fragile nature of soils and vegetation increases the risks of environmental degradation, due to population pressure and/or poor management of natural resources, such as overgrazing, deforestation for firewood production, and land clearing.

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<sup>71</sup> World Bank Group, 2022: *Angola Country Climate and Development Report*. Washington, DC 20433. <https://documents1.worldbank.org/curated/en/099150012022242096/pdf/P1769171f457c3010198d31b375aadd937.pdf>

### 6.5.1. Fisheries

The main vulnerabilities of the fisheries and aquaculture sector stem from the availability and distribution of key fishery resources, as well as limitations in technical and institutional capacity<sup>72</sup>. These factors are influenced by variations in temperature and wind patterns, rising sea levels, and declining freshwater levels affecting inland fisheries and aquaculture.

In the southern provinces of Benguela and Namibe, the coastal ecosystem relies on upwelling, which sustains a nutrient-rich marine environment. Alterations in wind patterns affect this process—a reduction in wind intensity diminishes nutrient supply, leading to fewer available fish resources. Meanwhile, the provinces of Luanda, Zaire, and Bengo may experience the effects of more frequent and intense hot coastal winds, which significantly impact marine biodiversity and overall fishing productivity.

Climate change is expected to impact fisheries in Angola, although research is limited, and models present significant levels of uncertainty<sup>73</sup>. The country's coastal fisheries lie in a historically productive zone within the Benguela Current Large Marine Ecosystem (BCLME), one of the most productive ecosystems in the world. Angola's National Development Plan 2018–2022 identifies fisheries and aquaculture as a sector to grow, aiming to remobilize 10 ships and achieve an average production of 303,000 tonnes of fish through industrial and semi-industrial fishing, 232,400 tonnes from artisanal fisheries, and 3,580 tonnes from aquaculture.

However, the combined effects of climate change on factors such as water temperature, current and nutrient circulation, and pH may substantially change the distribution and composition of fish stocks throughout the country, especially when combined with anthropogenic stressors (e.g., overfishing, habitat degradation). In a high GHG emission scenario (RCP8.5), Angola's maximum catch potential (MCP) is expected to decrease by 43.7 and 64.0 percent by 2050 and 2100, respectively.

### 6.5.1. Coastal Zones

Angola's coastline is highly vulnerable to climate change, not only due to natural and climatic factors but also as a result of human activities<sup>74</sup>. Assessing the vulnerability of the coastal zone to sea level rise and extreme events—such as droughts, floods, and abrupt temperature changes—requires considering multiple elements, including coastal dynamics and their driving forces, as well as socio-environmental conflicts and the impacts of human occupation and activities.

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<sup>72</sup> Republic of Angola, *Second National Communication* (Luanda: Government of Angola, 2021), <https://unfccc.int/sites/default/files/resource/ANGOLA%20SNC.pdf>.

<sup>73</sup> World Bank Group, 2022: *Angola Country Climate and Development Report*. Washington, DC 20433. <https://documents1.worldbank.org/curated/en/099150012022242096/pdf/P1769171f457c3010198d31b375aadd937.pdf>

<sup>74</sup> Republic of Angola, *Second National Communication* (Luanda: Government of Angola, 2021), <https://unfccc.int/sites/default/files/resource/ANGOLA%20SNC.pdf>.

The level of vulnerability in Angola's coastal areas is influenced not only by their physical and biological features but also by rapid and often unplanned urban expansion driven by rural migration. This has been accompanied by increased traffic, air pollution, and waste generation. As a result, the coastal zone has experienced significant degradation, with pressures continuing to intensify.

Sea-level rise is expected to have a significant impact on coastal settlements, where more than 50 percent of the country's population lives, impacting housing, roads, and industrial and commercial infrastructure<sup>75</sup>. The IPCC Atlas shows the middle-of-the-road scenario for sea-level rise in west southern Africa to be 0.1 meters in the short term (2021–2040), 0.3 meters in the medium term (2041–2060), and up to 0.6 meters in the long term (2081–2100). In line with recent events over the last decade, an increase in frequency and intensity of flooding is projected, especially along the coastal zone, for all seasons except June to August.

The project "Addressing Urgent Coastal Adaptation Needs and Capacity Gaps in Angola,"<sup>76</sup> funded by the Least Developed Countries Fund and implemented by UNDP and UNEP, has prepared the following analysis of sectoral vulnerabilities with respect to coastal zones.

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<sup>75</sup> World Bank Group, 2022: *Angola Country Climate and Development Report*. Washington, DC 20433. <https://documents1.worldbank.org/curated/en/099150012022242096/pdf/P1769171f457c3010198d31b375aadd937.pdf>

<sup>76</sup> Global Environment Facility (GEF), "Project 5230: Strengthening Climate Information and Early Warning Systems in Angola," *The GEF*, <https://www.thegef.org/projects-operations/projects/5230>.

Table 11: Vulnerabilities identified for each sector as identified via the project “Addressing Urgent Coastal Adaptation Needs and Capacity Gaps in Angola”. The degree of vulnerability is identified in the table according to a scale ranging from one to three “+” symbols, with one symbol representing the lowest degree of vulnerability, even if it exists.

| Impacts and Vulnerabilities                                                                   | Urban Planning | Infrastructure | Fisheries | Agriculture and food systems | Water and Sanitation | Tourism | Energy |
|-----------------------------------------------------------------------------------------------|----------------|----------------|-----------|------------------------------|----------------------|---------|--------|
| Rising sea levels                                                                             | +++            | +++            | +++       | +                            | +++                  | +       | +++    |
| Increased frequency and intensity of extreme phenomena causing coastal erosion and inundation | +++            | +++            | +++       |                              | +                    | +       |        |
| Altered circulation of sea currents                                                           |                | +++            | +++       |                              | +                    |         |        |
| Rising water temperatures and increased salinization                                          |                |                | +++       |                              | +                    |         |        |
| Increased soil instability and landslides                                                     | ++             | +++            |           | +++                          |                      |         | +      |
| Increased susceptibility to desertification and soil erosion                                  | +++            | +++            |           | +++                          |                      |         |        |
| Increased frequency and intensity of extreme precipitation events                             | +++            | +++            |           |                              | +++                  |         |        |
| Increased frequency and intensity of droughts and water shortages                             |                | +++            |           | +++                          | +++                  |         | +++    |
| Increased frequency and intensity of heat waves                                               | +++            | +++            |           |                              | +++                  | +       | +++    |
| Increased frequency and intensity of rural fires                                              |                |                |           | +++                          |                      |         |        |
| Degradation of the amount of assimilation and purification of watercourses                    |                |                |           | +++                          | +++                  |         |        |
| Instability in electricity supply                                                             |                |                |           |                              |                      |         | +++    |
| Health risks and disease transmission                                                         | +++            |                |           |                              | +++                  | +       |        |
| Alteration/loss of biodiversity                                                               |                |                | ++        | ++                           |                      | +++     |        |
| Acidification of sea or fresh water                                                           |                |                | +++       |                              | ++                   |         |        |
| Intrusion of seawater into coastal areas                                                      |                |                |           | ++                           | ++                   |         |        |
| Erosion of riverbeds and consequent accumulation of sediment in estuaries                     | ++             | ++             | ++        | +                            |                      |         |        |

### 6.5.1. Water resources

The following excerpt from Angola's Second National Communication<sup>77</sup> describes risks and vulnerabilities related to the Water Resources sector:

"Water is a strategic resource for Angola's integrated economic development. Climate change has significant impacts on the temporal and spatial distribution of water availability, water quality, and the risk of floods and droughts. In addition to these direct impacts, there are indirect effects resulting from socio-economic changes and activities that increase pressure on the water environment through an increase in water demand or the pollution burden afflicting water bodies. The impacts on water resources are reflected in the various water-using sectors, including in aquatic ecosystems, reinforcing the need for Integrated water resource management.

The predictions that the IPCC's fifth report makes for the African continent and the southern region indicate changes in some parameters, such as precipitation and, consequently, the availability of water resources. The impact of climate change on the water system will be felt in longer droughts, more intense floods and more frequent flooding.

To assess the sector's vulnerability to climate change, the Second National Communication uses the set of information contained in the National Water Plan (NWP, 2015). The NWP contains scenarios with global, regional, and local trends in water resources. Thus, in this vulnerability document, the water resources sub-sector is studied with a different level of detail than the other scenarios. On the other hand, the 2015 NWP was based on the methodologies of the 4th IPCC report, while the other sectors used the methodologies of the 5th IPCC report.

Scenario-setting provides a set of measures and actions that contribute to adaptation to climate change in a context of uncertainty and assessment risks. The establishment of socioeconomic forecast scenarios and the analysis of their influence on the regional water balance also allows the prediction of situations of competition and possible conflict generated by the pressure of uses. The sectors that are generally foreshadowed as those that compete most for water are irrigated agriculture and water-based energy, although in some situations a significant synergy between them can be identified.

The NWP carried out the water balance in about 22 Hydrographic Units, for the various planning horizons, considering the possible need for measures relating to the:

- Supply, essentially promoting works and support activities (studies and projects, construction management and supervision, operating consultancy, etc.).
- Demand, promoting legal/economic instruments and a rational use/optimization of processes.

The approach taken assumes that energy production (not only hydro) depends and is dependent on the level of development of the rest of the economy. Equal interdependence exists between agricultural production and population consumption or the level of activity of the agro-food industry, for example."

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<sup>77</sup> Republic of Angola, *Second National Communication* (Luanda: Government of Angola, 2021), <https://unfccc.int/sites/default/files/resource/ANGOLA%20SNC.pdf>.

The NWP prepared scenarios, which are presented in detail in Angola's Second National Communication, which also notes "There is a poor knowledge or poor availability of data to assess with the necessary precision the extent of the impact on water resources, natural systems, soil, forests or coastlines, there is a glaring lack of data and technical capacity available in monitoring the climate system to provide timely weather forecasting, early warning to enable long-term projections."

### 6.5.1. Forestry, Ecosystems and Biodiversity Sector

Forests play a vital role in providing environmental goods and services, including rainfall regulation, soil fertility maintenance, erosion control, water conservation, flood mitigation, food provision, climate regulation, recycling of harmful gases, carbon sequestration for climate change mitigation, and the preservation of biodiversity<sup>78</sup>. They also serve as a key source of livelihood for much of Angola's population, offering timber and non-timber forest products, medicinal plants, household fuelwood, and habitats for wildlife and other forest species that support the country's tourism industry.

Approximately 38% of Angola's population lives in rural areas, relying heavily on forest resources for subsistence and income. According to the national energy matrix, wood and charcoal dominate energy consumption, accounting for 56.8% of total energy use, compared to 41.7% for kerosene, 1.45% for electricity, and just 0.1% for natural gas.

However, forests face increasing threats from deforestation caused mainly by the conversion of forest land for agriculture, infrastructure, and human settlements—activities responsible for around 80% of forest loss. Additional pressures include biofuel production, fuelwood collection, mineral and timber extraction, climate change, and the spread of pests and diseases.

Angola's National biodiversity strategy and action plan, 2019–2025<sup>79</sup> highlights some risks related to biodiversity loss and climate change in addition to anthropogenic factors, and sets out actions for conservation, preservation, protection, and restoration of biodiversity in Angola.

### 6.5.1. Infrastructure

The following excerpt from Angola's Second National Communication<sup>80</sup> describes risks and vulnerabilities related to the infrastructure sector:

"The urban population in Africa is projected to triple by 2050. African countries have some of the highest urbanization rates in the world. Many of the evolving cities are surrounded by informal settlements and poverty, where housing and basic services are inadequate. Luanda is one such example, where much of the population

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<sup>78</sup> Republic of Angola, *Second National Communication* (Luanda: Government of Angola, 2021), <https://unfccc.int/sites/default/files/resource/ANGOLA%20SNC.pdf>.

<sup>79</sup> Republic of Angola, *National Biodiversity Strategy and Action Plan: 2019–2025* (Luanda: Government of Angola, 2019), <https://www.cbd.int/doc/world/ao/ao-nbsap-v2-en.pdf>.

<sup>80</sup> Republic of Angola, *Second National Communication* (Luanda: Government of Angola, 2021), <https://unfccc.int/sites/default/files/resource/ANGOLA%20SNC.pdf>.

continues to live in informal settlements on the periphery where basic services such as electricity, water, and roads are not sufficient and, in many cases, non-existent for the people living there.

Climate change is among many factors driving rural-urban migration. This means that changes in climate can affect rural and urban settlements. Most of the migrations caused by changes in the environment take place within each country. Small and medium-sized cities have limited capacity to cope with current or future climate risks. Although cities are generally better served than rural areas, for example, with piped water, sanitation, schools, and medical care, poor infrastructure can reduce life expectancy in the face of climate change. Many cities in sub-Saharan Africa not only have inadequate piped water and sewage but also have very limited capacity to invest in improving these services.

The lives of people living in areas characterized by extreme population density, uncontrolled growth, high levels of poverty, and limited access to employment and socioeconomic services are considered most vulnerable to the physical impacts of climate change.

Those living in informal housing areas are regarded as one of the most vulnerable populations in the world. They are often areas vulnerable to water calamities such as floods and extreme storms, especially when they are in flood plains and the water infrastructure is inadequate. In some cases, infrastructure built to cope with weather conditions associated with water will not be adequate for the intensity and instability of future phenomena. The events related to extreme weather events that have been experienced in Angola where housing and several other public infrastructures have been devastated, are an example of the climate changes that are already taking place and are tending to increase.

Rising sea levels due to climate change will push back coastal limits, while forcing people to migrate and destroying infrastructure, fauna and flora, and very important habitats (such as mangroves and coral reefs) and threatening human health, infrastructure, fisheries, biodiversity, and tourism industries. A quarter of Africa's population lives 100 km from the coast, and urban areas account for half of the population living in low-lying coastal areas. Most of Africa's largest cities (such as Luanda, Lagos, Kinshasa, Cairo with several million inhabitants each) are located along coasts that are vulnerable to rising sea levels, coastal erosion, and extreme weather events.

In Angola, in terms of the energy sector, we see a great effort in the construction of infrastructure such as hydroelectric dams in the Middle Kwanza region, such as the hydroelectric plants in Cambambe, Capanda, Lauca and the use under construction of Caculo Cabaça. There has been an increase in power and stability in this supply. Like the country's dependence on oil, the energy sector is currently highly dependent on the Middle Kwanza region. This fact makes the sector vulnerable to the trends of increasing climate variability that the various models have shown for the region and the country. It should be noted that in August 2012, due to water scarcity, it was not possible to supply energy through these dams. This demonstrates what can be expected in the future if the climate projections come true.

Climate change will have an impact on the distribution and transmission of energy. Transformers will cool down more slowly: heat in transmission cables can be maintained if there is less opportunity for it to cool down. This will affect transmission efficiency. Extreme weather events can create damage to the most likely transmission lines. With the rise in sea level and the advance of the sea in low relief areas, there will be an effect on the power cables.

Floods and rising sea levels will have an impact on the surface infrastructure, and there may be erosion of the supports, at the base of the supports increasing corrosion due to salt water.

Higher temperatures may increase the degradation of building materials and structures. The impact of heat will include the expansion of rail tracks and the more frequent melting of asphalt. Other materials can be more easily damaged with higher temperatures and/or flooding.

It is likely that the design and planning of certain infrastructures today have been done based on 20th century parameters which will be different in the future. Rainfall variability can cause river flow variability. Bridges and other overflow paths have been planned without considering an increase in maximum river flows. The capacity may not be sufficient to flow with the result that riverside areas are flooded or even infrastructure destroyed (which is apparently the case in Cunene Province in recent years).

Resources that could be used to expand existing transport networks may have to be diverted to strengthen and adapt infrastructure to the climate. An increase in extreme weather events can also influence the mode of transport, for example, when storms become more frequent, ships or aircraft may become less safe.”

#### 6.5.1. Human Health

The following excerpt from Angola’s Second National Communication<sup>81</sup> describes risks and vulnerabilities related to the health sector:

“In terms of human health, climate change tends to lead to an increase in the number of deaths related to prolonged periods of high temperatures, an increase in diseases transmitted by water, food or other vectors, and a worsening of the health problems associated with air pollution.

Rising temperatures and wetter conditions can have an impact on human health through a change in the geographical distribution of diseases. Vector-borne diseases are sensitive to climatic factors. The IPCC projects that a 5-8% increase in arid and semi-arid lands in Africa could increase transmission and favor the expansion of the meningitis area.

Dengue is transmitted by the bite of the contaminated female *Aedes aegypti* mosquito. The expansion of the urban environment, with poor sanitary infrastructure, is conducive to increasing the density of the vector population. If torrential rain and flooding are more frequent in the future, they may create more suitable conditions for Dengue fever, although there are several other factors.

Malaria is an acute or chronic infectious disease caused by protozoan parasites of the genus *Plasmodium*, transmitted by the bite of the *Anopheles* mosquito. The presence of the malaria mosquito depends on temperature, humidity, water, and wind. There is a possibility that malaria could spread to areas of Africa where it is rare for climatic reasons. Higher temperatures may extend the range and seasonality of disease transmission caused by a vector, especially malaria.

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<sup>81</sup> Republic of Angola, *Second National Communication* (Luanda: Government of Angola, 2021), <https://unfccc.int/sites/default/files/resource/ANGOLA%20SNC.pdf>.

In Luanda, with heavy rains and flooding in 2008, there was an increase in disease associated with contaminated water (cholera, gastrointestinal diseases, and malaria). One consequence of climate change may be an increase in the number of extreme events that generally cause a peak in the incidence of diseases associated with the decline in personal hygiene, as well as the lack of drinking water.

High temperatures and humid conditions, even for short periods, can influence food quality. Frequent flooding can create risks of disease linked to poor sanitation. Variability in precipitation, or heavy rainfall, which implies changes in river basin parameters and flooding, soil erosion and sedimentation will have implications for infrastructure and transport that can be damaged by abnormal flooding.

Cholera is a disease caused by *Vibrio cholerae*, a bacterium that rapidly multiplies in the human intestine, producing a potent toxin that causes intense diarrhea. It only affects humans, and its transmission is directly from fecal waste from patients by oral ingestion, mainly in contaminated water.

The IPCC Fourth Report concluded with certainty that human health in Africa could be negatively affected by climate change instability (IPCC, 2007). Changing temperature and rainfall patterns will alter the ecology of some disease vectors, thus altering the manifestation of certain diseases. Much research in this field has focused on malaria, but there are also risks of changes in the manifestation of dengue fever, meningitis and cholera. Some of the direct effects of climate change on health are floods, droughts, and heat stress. Some of the indirect effects are the spread and/or increase in the incidence of infectious and vector-borne diseases, water-borne pathogens, water and air quality, and food availability and quality. The actual future impacts depend heavily on local environmental conditions, the socio- economic situation of the area, and existing adaptation measures to reduce threats.

Vulnerability is the ability of a community or communities to adapt to health threats depending on their overall health status. In this respect, factors such as the prevalence of cardiovascular disease, HIV and TB, malnutrition or atrophy especially in children, level of education and awareness, economic status, general demographic profile, migration patterns and levels, level of development and maintenance of infrastructure, access to and availability of skilled medical personnel and facilities, and population density are considered.

Between 2008 and 2010, Angola was the target of storms resulting from rainfall changes that could reflect climate change, with unusually heavy rains that motivated more than two hundred thousand environmental refugees and seven dozen deaths in addition to the death of livestock and the loss of biodiversity due to the accumulation of water resulting from abnormal rainfall. The consequences of the rains that fell in this period in the provinces of Cunene and Cuando Cubango<sup>82</sup> were also due to anarchic human settlements, poor water management, lack of urban planning, and other factors, which characterize the state of vulnerability to which the populations are exposed.

The phenomenon of high urban temperatures is called the urban heat island. Urban heat islands cause discomfort in cities with a tropical and warm climate. Changes in air humidity, rainfall, and wind are also associated with the presence of urban heat islands. Heat islands aggravate heat waves (heat waves) with consequences such as sleep disturbance or health impacts.

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<sup>82</sup> Due to the Administrative political division in 2025, Cuando cubango has resulted in the creation of two different provinces, namely, Cuando and Cubango.

If the climate warms, tropospheric ozone and airborne allergen levels may increase, contributing to the worsening of asthma and other respiratory diseases, potential risk of vector and rodent borne diseases.

The contamination of soils by urban solid waste affects especially cities, due to the irregularity of household waste collection and cleaning of public places, and consequently, the proliferation of disease vectors (insects, rodents, and others). The final disposal of waste done spontaneously, in the open air and in inappropriate places, can also cause the contamination of surface and groundwater.”

#### 6.5.1. Further sectors

In addition to the seven priority sectors of this NAP whose risks and vulnerabilities are described above, further [vulnerability analysis should be done for the energy and the education sectors.](#)

- **Energy:** Angola has one of the highest hydropower potentials in Africa, estimated at 18,200 MW, and hydropower has historically been the country’s primary source of electricity. By 2020, nearly 90 percent of Angola’s electricity was generated from hydropower, up from about 70 percent in 2019, with the remainder coming from oil products and gas. However, hydropower generation is highly dependent on upstream flow conditions, which are becoming increasingly unpredictable due to climate change.
- Projections suggest that southern and southeastern Angola will experience drier conditions, potentially reducing hydropower output in rivers such as the Kunene, which borders Namibia. While some river basins may benefit from increased runoff, this could also lead to more intense precipitation events, resulting in flooding and accelerated soil erosion. Such erosion carries sediment into reservoirs, reducing their storage capacity and further limiting energy production. These changes may lead to a decline in annual hydropower output, possible increases in electricity costs, and amplified flood risks that could negatively impact communities, infrastructure, and agriculture.
- **Education.** Acknowledging that children’s education is disrupted by climate change, this is also a vital sector to build adaptive capacity of children and young people, with flow on benefits for their families and communities. Angola has adopted its National Education Plan (2017-2030), which can strengthen its integration of climate change considerations in Education, and future iterations of the NAP may engage Climate Education as a priority sector to address the human capital challenges and vulnerabilities of children and youth.

## 6.6 Next steps

This chapter has presented critical information on key risks, hazards, and vulnerabilities based on the available data and information. As Angola prepares future updates of its NAP through its iterative adaptation planning process, it will seek to address the following priorities.

- Update the information based on new data and information (from continuous national climate change impacts, vulnerability and impacts assessments and other research such as IPCC).
- Strengthen human and institutional capacity for research, data collection, and information gathering to build the evidence base for adaptation decision-making.
- Collect and harmonize data and information, addressing gaps.

- Undertake, at the national level, impact, vulnerability, and risk assessment, including to better understand vulnerabilities according to gender, social, and geographic factors.
- Use a multistakeholder process to identify key risks and vulnerabilities to be addressed further.
- Establish common methodologies for risk and vulnerability assessments by sector and local governments (provinces and municipalities), in line with the framing of vulnerability and risk based on the IPCC AR6, including the application of a gender lens to climate risk assessments.

The Republic of Angola recognizes the dimensional target of the global goal on adaptation related to “Impact, vulnerability and risk assessment and early warning systems” calling on Parties to establish multi-hazard early warning systems, enhance climate information services for risk reduction, and work towards systematic observation to support improved climate-related data, information and services by 2027. Additional technical and financial support will be required to realise these activities.

## 7 Priority Adaptation Options and Actions

For the nine priority sectors and areas, 44 adaptation options with 102 adaptation actions are prioritized for implementation by Angola through 2035. These adaptation actions do not represent the only actions that will be undertaken; they simply represent the actions identified as the most urgent by the stakeholders.

Adaptation options and actions were identified through national stakeholder consultations and subjected to a prioritization process. Priority adaptation actions are crucial for achieving the sector targets presented in Chapter 2, Table 1.

The basis for the identification and prioritization of adaptation options and actions for Angola was underpinned by two important approaches for developing a progressive NAP:<sup>83</sup> (i) managing key climate risks, impacts, and vulnerabilities for Angola identified in Chapter 6 and (ii) managing adaptation benefits that promote sustainable development.

Table 12: Priority adaptation options and actions for key sectors and areas for Angola.

| Adaptation options                                                           | Adaptation actions                                                                                                                                                                                                                                                     |
|------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Agriculture and Food Security</b>                                         |                                                                                                                                                                                                                                                                        |
| Crops and livestock diversification                                          | <ul style="list-style-type: none"> <li>• Promote local varieties adapted to Angola's various regions and climate conditions,</li> <li>• Introduction of new crops that suit the new climate conditions and ensure equal access for different social groups.</li> </ul> |
| Sustainable and climate-resilient soil and water management                  | <ul style="list-style-type: none"> <li>• Implement agroforestry practices for climate adaptation,</li> <li>• Promote conservation agriculture and integrated water resource management (IWRM) to diverse social groups.</li> </ul>                                     |
| Agricultural technology development and implementation, including irrigation | <ul style="list-style-type: none"> <li>• Expansion of water-saving irrigation and efficient technology, such as drip irrigation,</li> </ul>                                                                                                                            |

<sup>83</sup> Adapted from: UNFCCC, *Updated Technical Guidelines for the Process to Formulate and Implement National Adaptation Plans* (Bonn: UNFCCC, Least Developed Countries Expert Group, 29 August 2025), <https://unfccc.int/documents/649321>

| Adaptation options                                                                                                     | Adaptation actions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                        | <ul style="list-style-type: none"> <li>● Rehabilitate irrigation infrastructure, including upgrading the technology and retrofitting it with climate-resilient materials,</li> <li>● Develop or adapt innovative technologies that guarantee sustainable use and increased efficiency of water use in agricultural production systems, including efficient use of rainwater.</li> </ul>                                                                                                                                                                              |
| Advance knowledge on climate-resilient agriculture production and food systems management                              | <ul style="list-style-type: none"> <li>● Conservation and sustainable use of genetic resources and plant and animal breeding;</li> <li>● Develop and implement an Agricultural Risk and Vulnerability Monitoring and Simulation System.</li> </ul>                                                                                                                                                                                                                                                                                                                   |
| Risk insurance for the agriculture sector                                                                              | <ul style="list-style-type: none"> <li>● Promote weather index insurance products as a wider portfolio of risk management services offered to farmers, prioritizing smallholder farmers.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                  |
| Training and institutional capacity building                                                                           | <ul style="list-style-type: none"> <li>● Train staff and qualify technicians and producers to adopt approaches, systems, and technologies that promote climate adaptation,</li> <li>● Train smallholder and rural farmers, including women and youth, to adopt farming systems that promote climate-resilient farming.</li> </ul>                                                                                                                                                                                                                                    |
| Climate proof food sector to climate impacts                                                                           | <ul style="list-style-type: none"> <li>● Improve food storage and distribution to consider climate change impacts,</li> <li>● Creation of seed banks,</li> <li>● Promote the use of biological fertilizers.</li> </ul>                                                                                                                                                                                                                                                                                                                                               |
| <b>Fisheries</b>                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Climate-resilient (climate-informed fisheries technologies) and sustainable fisheries production, including harvesting | <ul style="list-style-type: none"> <li>● Develop and implement support programs for conservation and sustainable use of marine resources,</li> <li>● Integrate scientific knowledge and fishers' local knowledge in decision-making for management,</li> <li>● Implement six fisheries management plans for the six coastal municipalities,</li> <li>● Setting up and operationalizing a monitoring system with ocean boats.</li> </ul>                                                                                                                              |
| Advance data and knowledge on sustainable and climate-smart fisheries                                                  | <ul style="list-style-type: none"> <li>● Promote research on climate resilience and sustainability within the Benguela Current Large Marine Ecosystem (BCLME),</li> <li>● Support research on climate change impacts on fishing productivity and coastal economies to inform or update risk and vulnerability data,</li> <li>● Strengthen data collection on fish stocks, environmental conditions, and climate change impacts to inform management decisions.</li> </ul>                                                                                            |
| Ecosystem-based adaptation                                                                                             | <ul style="list-style-type: none"> <li>● Restore and protect critical degraded habitats, such as mangroves, to promote biodiversity,</li> <li>● Establish Marine Protected Areas covering more than 10% of Angola's exclusive economic zone.</li> </ul>                                                                                                                                                                                                                                                                                                              |
| Training and institutional capacity building                                                                           | <ul style="list-style-type: none"> <li>● Improve technical capacity to develop and implement climate modelling projects for the different fisheries production systems,</li> <li>● Train staff and qualify technicians and fishermen to adopt systems and technologies that help the fisheries sector adapt to climate change,</li> <li>● Training programs for fishermen, including women and youth, in the fields of artisanal and sustainable fishing,</li> <li>● Enhancing institutional capacity to monitor and implement better management systems.</li> </ul> |
| <b>Water Resources</b>                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

| Adaptation options                                                | Adaptation actions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Sustainable and climate risk data informed river basin management | <ul style="list-style-type: none"> <li>● Construction of catchment retention and infiltration basins in flood-sensitive zones to receive rainwater from drainage network channels;</li> <li>● Establish robust and integrated river basin monitoring systems (including periodic surveys of river basins and groundwater) and rainfall forecasts,</li> <li>● Increase the number of meteorological and hydrometric stations to improve precipitation monitoring in major river basins.</li> </ul>                                                                                         |
| Sustainable and climate-resilient water resources management      | <ul style="list-style-type: none"> <li>● Develop and implement an Integrated Water Resource Management (IWRM) action plan in pilot provinces to feed the development of a national IWRM strategy,</li> <li>● Invest in water storage, including groundwater and watershed storage, through nature-based solutions</li> </ul>                                                                                                                                                                                                                                                              |
| Provide reliable drinking water sanitation and hygiene for all    | <ul style="list-style-type: none"> <li>● Develop drinking water collection, treatment, and distribution systems, prioritizing the most vulnerable areas, including wastewater management within an overarching circular economy approach,</li> <li>● Increase access to potable water through rehabilitation and installation of boreholes and water wells in areas most affected by climate-induced water scarcity and ensure proper treatment and reuse of wastewater.</li> </ul>                                                                                                       |
| Climate-resilient sanitation development and management           | <ul style="list-style-type: none"> <li>● Improve by retrofitting existing wastewater collection and treatment systems to climate-resilient materials and building new systems that are climate-resilient in deprived areas, focusing on urban areas with a high population concentration,</li> <li>● Build and reinforce flood defenses near wastewater treatment and waste storage systems,</li> <li>● Build, rehabilitate, and expand sanitation systems, focusing on the construction of low-cost systems, such as septic tanks and community dry latrines, in rural areas.</li> </ul> |
| Water resources information and monitoring system                 | <ul style="list-style-type: none"> <li>● Develop or rehabilitate water resource information and monitoring systems,</li> <li>● Integration of existing information and monitoring systems to develop an IWRM information management system.</li> </ul>                                                                                                                                                                                                                                                                                                                                    |
| Water sector infrastructure development                           | <ul style="list-style-type: none"> <li>● Build new dams and rehabilitate existing dams with high storage capacities to regularize inflows to satisfy multiple users.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                           |
| Ecosystem-based adaptation (EbA) measures                         | <ul style="list-style-type: none"> <li>● Protect and restore wetlands and floodplains to improve water storage, filtration, and flood control to reduce flood risks.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                           |
| Training and institutional capacity building                      | <ul style="list-style-type: none"> <li>● Strengthen the regulatory and institutional framework of the water sector and strengthen the capacities towards Integrated Water Resource Management,</li> <li>● Training on IWRM and climate adaptation, technical capacity and skills for implementing and operating climate-resilient water technology.</li> </ul>                                                                                                                                                                                                                            |

| Coastal Zones                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|--------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Protection of coastal and riverside areas                                      | <ul style="list-style-type: none"> <li>● Develop and implement flood and erosion risk maps as decision-making tools for the main coastal units on a municipal scale.</li> <li>● Adopt the use of vegetated coastal ecosystems.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                |
| Increase the coastal zone defense capacity                                     | <ul style="list-style-type: none"> <li>● Build structures to protect coastal communities and key infrastructure from mean sea level rise and coastal flooding, including upgrading existing infrastructure,</li> <li>● Implement a monitoring system of the evolution of coastal space and the coastal system capable of guaranteeing the systematic acquisition, organization and archiving of basic data, with an effective user interface (Coastal Resource Management System application).</li> </ul>                                                                                                                                                |
| Climate risk informed coastal zones planning and development                   | <ul style="list-style-type: none"> <li>● Reduce the occupation of land located in areas at high risk of flooding in coastal zones,</li> <li>● Climate risk-informed occupation of land located in areas at high risk of flooding in coastal zones (new occupation) – inspection and enforcement of zoning regulations,</li> <li>● Strengthen surveillance to prevent the occupation of land located in high flood-risk zones in coastal areas,</li> <li>● Develop and implement an Integrated Coastal Zone Management (ICZM) plan.</li> </ul>                                                                                                            |
| Risk insurance for the coastal zone sector                                     | <ul style="list-style-type: none"> <li>● Promote climate risk insurance for coastal zone communities, including for key economic activities.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Advance knowledge of risk assessment, planning and adaptation of coastal zones | <ul style="list-style-type: none"> <li>● Promote research on regular assessment of the impacts of climate change (focusing on modifications, sedimentation, salinization levels and coastal erosion) in coastal zones.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Forests, Ecosystems and Biodiversity                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Sustainable management of biodiversity and ecosystems                          | <ul style="list-style-type: none"> <li>● Improve the management of current conservation areas and continue creating new ones,</li> <li>● Establish and implement conservation plans for different climate patterns,</li> <li>● Strengthen existing mechanisms for identifying and responding in a timely manner to changes in biodiversity caused by climate change,</li> <li>● Protection of the springs of the main rivers and lakes,</li> <li>● Protection of wetlands, peatlands and riparian vegetation,</li> <li>● Integration of sustainable biodiversity and ecosystem management into territorial planning in at least 10 provinces,</li> </ul> |
| Protection of forests, ecosystems and biodiversity                             | <ul style="list-style-type: none"> <li>● Develop and implement plans to monitor the evolution of forest areas, ecosystems, and biodiversity and their conservation status, on a national and regional scale,</li> <li>● Implement actions for the sustainable management and preservation of forest perimeters throughout the national territory and recover degraded areas to contain desertification and reduce climate vulnerability.</li> </ul>                                                                                                                                                                                                      |
| Fire management measures                                                       | <ul style="list-style-type: none"> <li>● Develop and implement forest fire prevention actions,</li> <li>● Implement early burning program to prevent or reduce the risk of fire;</li> <li>● Reduce end-of-dry-season fires in the five most affected provinces and regions,</li> <li>● Develop and implement fire management programs in municipal master plans.</li> </ul>                                                                                                                                                                                                                                                                              |

| Human health                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|---------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Advance monitoring and prevention of climate related diseases                                                       | <ul style="list-style-type: none"> <li>● Develop and implement surveillance systems for monitoring climate-related diseases and vectors.</li> <li>● Map disease risks affecting the most exposed communities to inform decision-making,</li> <li>● Improve the prevention and response capacity of the national health system.</li> </ul>                                                                                                                                                                         |
| Reduce prevalence of malaria                                                                                        | <ul style="list-style-type: none"> <li>● Improve diagnostic tests and increase health service access, particularly to children (infants) and the most vulnerable (pregnant) population,</li> <li>● Expand access to malaria vaccines to cover all population,</li> </ul>                                                                                                                                                                                                                                          |
| Climate proofing of health facilities                                                                               | <ul style="list-style-type: none"> <li>● Develop and implement a Health National Adaptation Plan.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                      |
| Training and institutional capacity building                                                                        | <ul style="list-style-type: none"> <li>● Public information campaigns on climate change, human health, and hygiene for the prevention of climate-induced diseases (prioritizing malaria, cholera);</li> <li>● Train the Ministry of Health's workforce on climate change and health.</li> </ul>                                                                                                                                                                                                                   |
| Infrastructure                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Increase resilience of urban infrastructure to climate impacts and hazards                                          | <ul style="list-style-type: none"> <li>● Rehabilitate main drainage installations, adjusting them to urban infrastructure standards, including retrofitting the drainage system to be climate-resilient,</li> <li>● Develop and implement municipal climate change adaptation plans for eight municipalities that integrate NbS and EbA measures (green/ blue infrastructure).</li> </ul>                                                                                                                         |
| Protect urban settlements from floods                                                                               | <ul style="list-style-type: none"> <li>● Map human settlements at risk of flooding and erosion.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                        |
| Integration of climate information in planning and construction of critical infrastructure and in urban development | <ul style="list-style-type: none"> <li>● Consideration of climate risk and information in the design of new or rehabilitation of existing key infrastructure, such as roads and urban infrastructure,</li> <li>● Implement building codes and designs, including retrofitting existing buildings to make them climate-resilient,</li> <li>● Develop and implement national and local guidelines for climate-resilient infrastructure and human settlement development, including informal settlements.</li> </ul> |
| Training and institutional capacity building                                                                        | <ul style="list-style-type: none"> <li>● Develop and implement training programs for climate-resilient construction and infrastructure in both public and private sectors,</li> <li>● Strengthen the technical skills of public services to assess and manage risks in the urban planning sector.</li> </ul>                                                                                                                                                                                                      |

| Disaster Risk Preparedness and Management                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Drought risk management – to significantly reduce the impacts of droughts                                                                                      | <ul style="list-style-type: none"> <li>● Implement water collection and storage systems in drought-prone areas to guarantee the continuity of human and livestock supply, including freshwater for economy and biodiversity,</li> <li>● Set up drought monitoring system to identify the evolution of meteorological drought situations in risk areas,</li> <li>● Develop and implement drought impact prevention systems in drought-high-risk areas.</li> </ul>                                                                                  |
| Flood risk management – to reduce the impacts of flooding                                                                                                      | <ul style="list-style-type: none"> <li>● Implement a national flood awareness program in high-risk regions,</li> <li>● Build flood protection barriers along the main rivers (vegetation or physical barriers) in flood-prone areas,</li> <li>● Design and implement water drainage systems in high-risk areas based on climate risk assessments,</li> <li>● Develop and implement emergency preparedness plans and flood risk reduction strategies, including strategies for resolving governance issues.</li> </ul>                             |
| Sea level rise management to reduce the impacts on coastal zones, infrastructure and fisheries                                                                 | <ul style="list-style-type: none"> <li>● Implement ICZM plans incorporating considerations for sea-level rise into land use planning, infrastructure development, and resource management.</li> </ul>                                                                                                                                                                                                                                                                                                                                             |
| Training and institutional capacity building                                                                                                                   | <ul style="list-style-type: none"> <li>● Develop and implement population awareness programs on flood risks in the high-risk regions of Cunene, Benguela, Luanda, and Namibe,</li> <li>● Develop and implement provincial preparedness, contingency, and recovery plans that incorporate climate-related hazards (current and predicted).</li> </ul>                                                                                                                                                                                              |
| Cross cutting actions                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Multi-hazard early warning system for all – that is fit for purpose for adaptation of priority sectors, including key adaptation information for these sectors | <ul style="list-style-type: none"> <li>● Establish and implement multi-hazard early warning systems for all,</li> <li>● Develop or strengthen early action/ response systems, including provision/ integration of other relevant adaptation information, such as extension services in the agricultural sector, evacuation and other response actions in the coastal zone sector,</li> <li>● Expand new ground-based weather monitoring stations, including the rehabilitation of existing non-functional weather monitoring stations.</li> </ul> |
| Mainstreaming adaptation in sectoral development plans, policies, legal and legislative framework                                                              | <ul style="list-style-type: none"> <li>● Promote the integration and mainstreaming of adaptation in sectoral planning and development plans, including the implementation of climate budget tagging,</li> <li>● Promote the integration of adaptation into relevant planning and development processes by local authorities.</li> </ul>                                                                                                                                                                                                           |
| Implement inclusive adaptation monitoring system                                                                                                               | <ul style="list-style-type: none"> <li>● Develop and operationalize a MEL system for Angola NAP,</li> <li>● Support the integration of adaptation into relevant MEL systems of development or sectoral plans,</li> <li>● Building the required institutional capacity to fully implement the MEL system for adaptation.</li> </ul>                                                                                                                                                                                                                |
| Capacity building to process climate information including adaptation data                                                                                     | <ul style="list-style-type: none"> <li>● Strengthen the capacity of national institutions to access international climate adaptation finance and implement viable adaptation projects.</li> </ul>                                                                                                                                                                                                                                                                                                                                                 |
| Expand social protection measures                                                                                                                              | <ul style="list-style-type: none"> <li>● Increase access to financial services through new or expansion of existing social protection, such as Kwenda, to support the most vulnerable communities and households, prioritizing female-headed households, and expanding such protection measures both vertically and horizontally to help protect household welfare in the event of climate shocks.</li> </ul>                                                                                                                                     |

## 8 Financial Resources Required and Financing Priority Actions

This section outlines the financial resources required for implementing the adaptation actions in Section 7 and the overall NAP for Angola. This section also includes other crucial components of the means of implementation, mainly technology and capacity-building needs required to effectively implement Angola's NAP.

### 8.1 Cost Estimates for Financing the Implementation of Priority Adaptation Actions

To fully implement the priority adaptation actions in the priority sectors outlined in this NAP and facilitate the overall implementation of the NAP, Table 14 provides details of the financial resources required. The underlying assumptions of these cost estimates are defined in the tolerable residual risk for each sector, based on current vulnerability levels, exposure, and national development priorities to achieve the targets outlined for each sector in Section 2. The cost estimates presented in Table 14 are not exhaustive. The cost estimates depend on the availability of data. Comprehensive costing of adaptation actions should be established in the climate adaptation investment plan.

Priority adaptation actions were categorised into three funding and implementation segments: period 1 to period 3 (see Table 14). The details of each funding and implementation period are provided below.

- **Period 1 (2026–2027):** These are high-priority actions (P1) that are mostly implemented to facilitate an enabling environment or capacity building required to fully implement the NAP, such as setting up a MEL system. These are mostly implemented during the first segment of the NAP. These are mostly long-term priority actions, for example, establishing a MEL system or developing an IWRM plan that responds to climate risk and impacts or capacity building activities. These are normally a one-off investment or require minimum resources to maintain.
- **Period 2 (2028–2030):** These are high priority actions (P2) that mostly address the provision of basic services, for example, potable water for all with climate-resilient water infrastructure. These are implemented between 2028-2030 or through the NAP period.
- **Period 3 (2028–2035):** These are high-priority actions (P3) that require substantial investments in infrastructure and technology with long-term benefits. These are implemented mostly between 2028-2035. These include investments in climate-resilient health, water, agriculture, and food infrastructure and technology, including in coastal zones.

### 8.2 Sources of Finance to Support Angola NAP Implementation

The costs of financing the implementation of priority adaptation actions in Table 14, technology needs in Table 15, and capacity needs in Table 16 require huge capital investments. Therefore, it is important to have multiple funding sources to support its implementation. Table 13 lists the potential sources of financial resources for Angola to implement the NAP. Most priority adaptation actions will have to be publicly financed, mostly through international public finance and domestic public resources, because they are below-market activities.<sup>84</sup> Table 14 provides details of the activities that each source can finance.

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<sup>84</sup> Below-market finance can take the form of below-market borrowings — where governments provide support through debt financing — or below-market equity — where governments provide equity finance on terms that are inconsistent with market principles (OECD 2021).

Table 13: Potential funding sources for the implementation of Angola's NAP<sup>85</sup>

| Sources Type                                        | Classification of the Finance Sources | Details                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Available Financial Instruments                                                                                                                         |
|-----------------------------------------------------|---------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| International public finance                        | Below market                          | <p>This consists of international public finance from a variety of sources, mainly the following.</p> <ul style="list-style-type: none"> <li>• Multilateral Climate Funds – Green Climate Fund (GCF), Global Environment Facility (GEF), Adaptation Fund country programme, Least (AF), Developed Countries Fund (LDCF), etc.</li> <li>• Bilateral development cooperation</li> <li>• Multilateral Development Banks (World Bank, AfDB, ADB etc.)</li> <li>• Philanthropy</li> </ul> | <ul style="list-style-type: none"> <li>• Grants</li> <li>• Concessional loans</li> <li>• Debt including loans and bonds</li> <li>• Equity</li> </ul>    |
|                                                     | Mixed (Quasi- or blended returns)     | <ul style="list-style-type: none"> <li>• Development Finance Institutions</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                         |
| Domestic finance (public finance)                   | Below market                          | <p>This consists of national resources, either mobilized through public resources or public investments for adaptation. These are:</p> <ul style="list-style-type: none"> <li>• National Environmental Fund (FNA)</li> <li>• Angolan Agricultural Development Support Fund (FADA)</li> <li>• Sovereign Fund of Angola (FSDEA)</li> </ul>                                                                                                                                             | <ul style="list-style-type: none"> <li>• Project finance</li> <li>• Climate budget tagging</li> </ul>                                                   |
|                                                     |                                       | <p>This includes activities that could be funded through household-level or individual adaptation investments, such as household air conditioning.</p>                                                                                                                                                                                                                                                                                                                               | <ul style="list-style-type: none"> <li>• Household expenditure</li> </ul>                                                                               |
| Private sector finance (national and international) | Market rate                           | <p>This consists of finance from international and national private sector entities. The potential sources of this can include financial/ institutional investors, the corporate sector, and commercial banks.</p>                                                                                                                                                                                                                                                                   | <ul style="list-style-type: none"> <li>• Direct investments</li> <li>• Debt (loans &amp; bonds)</li> <li>• Equity</li> <li>• Blended finance</li> </ul> |

### 8.3 Financing Structure for Implementation of Priority Adaptation Actions

Considering that the implementation of most priority adaptation actions in the NAP offers minimal financial market returns, it is important to structure an appropriate financing model for Angola's NAP to ensure its sustainability. An evaluation criterion was applied to consider the potential financing structure.<sup>86</sup> The details of the three criteria are described below.

**Category A (publicly funded): Adaptation actions with projects with no or below-market-rate returns.** These activities will be significantly financed through international public finance, mainly through grants and concessional loans or through domestic public resources, where appropriate. The projects for implementation of priority actions

<sup>85</sup> The classification of the finance sources are adopted from Arame Tall et al., *Enabling Private Investment in Climate Adaptation and Resilience: Current Status, Barriers to Investment and Blueprint for Action* (Washington, DC: World Bank, 2 March 2021), <https://hdl.handle.net/10986/35203>

<sup>86</sup> Adjusted from the OECD, *Climate Adaptation Investment Framework*, Green Finance and Investment (Paris: OECD Publishing, 2024), <https://doi.org/10.1787/8686fc27-en>

include those being undertaken predominantly for equity reasons (such as supporting vulnerable communities), as well as those that have the characteristics of a public good (such as capacity building). Potential funding includes (a) multilateral climate funds; (b) bilateral and multilateral development cooperation; (c) philanthropy; and (d) domestic public finance. The funding for implementation of these activities will primarily come from multilateral climate funds, such as the GCF, GEF, LDCF, and Adaptation Fund. Other sources include bilateral agreements, MDBs, including the International Finance Corporation (IFC), the World Bank, and the Multilateral Investment Guarantee Agency (MIGA).

**Category B: Adaptation actions with potential projects that can generate revenue streams.** These activities will be potentially funded through international public finance from MDBs, including the International Finance Corporation (IFC), World Bank, and Multilateral Investment Guarantee Agency (MIGA). This category covers projects that are expected to create revenues, but the expected risk and return are not commensurate with the market rates. These projects could include the deployment of nature-based solutions or the development and deployment of innovative technologies. Financing sources include (a) development finance institutions, (b) national development banks, and (c) impact investors.

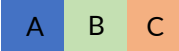
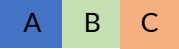
**Category C: Adaptation actions with potential projects that have market-rate returns.** These are NAP projects where the level of risk and projected returns are commensurate with the market requirements. These could include actions such as climate-resilient infrastructure development and investments to increase the efficiency of resource use, such as drip irrigation and climate-risk insurance, such as parametric insurance in agriculture, coastal zones, infrastructure, and fisheries sectors. The financing sources for these activities include (a) commercial banks, (b) financial/ institutional investors, and (c) corporate investors.

Thus, each proposed adaptation action was assigned to the relevant funding category. Some actions can be funded through categories A, B, and C (see Table 14).

## 8.4 Climate Adaptation Investment Plan for Angola

For a sustainable financing strategy to effectively implement the Angola NAP, a thorough and comprehensive implementation climate adaptation investment plan is required. Thus, this NAP recommends the establishment of a climate adaptation investment plan that will detail how all the activities in the NAP are financed through a sustainable model. The Angola climate adaptation investment plan (CAIP) was developed under the Angola GCF readiness programme, creating an enabling environment for adaptation implementation. The CAIP for Angola will be crucial for developing bankable adaptation projects from the priority adaptation actions presented in this NAP. The CAIP will translate high-level adaptation strategies into concrete actions, prioritize investments based on cost and risk, attract public and private funding, and build overall climate resilience.

Table 14: Cost estimates for implementing priority adaptation actions, including mapping potential financing sources.<sup>87</sup> The table includes potential financial instruments available to access funding and potential delivery partners for Angola.<sup>88</sup>

| Sector                        | Priority Adaptation Actions                                                                   | Cost Estimate for implementation (US\$) m                         | Time Horizon (Implementation Period) | Scale                                        | Activity type   | Financing structure                                                                   | Potential Funding Sources                                                                                                   | Financial Instrument                                                                                | Potential Delivery Partners <sup>89</sup>                                                                                                                                                                                                                                                                                                                                       |
|-------------------------------|-----------------------------------------------------------------------------------------------|-------------------------------------------------------------------|--------------------------------------|----------------------------------------------|-----------------|---------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Agriculture and Food Security | Promote local varieties adapted to Angola's various regions and climate conditions,           | Cost estimate in Angola climate adaptation investment plan (CAIP) | P1 through to P3                     | National prioritizing the southern provinces | Soft action     |    | <b>Multilateral Climate Funds</b> – GCF, GEF, LDCF, Adaptation Fund etc.                                                    | Grants, Equity, Debt (including Concessional & non-concessional loans, GSSS bonds), Blended finance | UNDP country and regional office; World Food Programme (WFP), International Fund for Agricultural Development (IFAD); Japan International Cooperation Agency (JICA), Consortium of International Agricultural Research Centers (CGIAR), Conservation International Foundation (CI), UNEP; AfDB country and regional office, Nature Conservancy (TNC), World Wildlife Fund, Inc. |
|                               | Implement agroforestry practices for climate adaptation                                       | Cost estimate in CIAP                                             | P3                                   | National                                     | Physical action |    | <b>Bilateral development cooperation,</b><br><br><b>Multilateral Development Institutions</b> (World Bank, AfDB, ADB etc.). |                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                 |
|                               | Conservation and sustainable use of genetic resources and plant and animal breeding           | Cost estimate in CIAP                                             | P2 through to P3                     | National prioritizing the southern provinces | Soft action     |    |                                                                                                                             |                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                 |
|                               | Develop and implement an Agricultural Risk and Vulnerability Monitoring and Simulation System | Cost estimate in CIAP                                             | P1 through to P3                     | National                                     | Soft action     |  | <b>Philanthropy,</b><br><br><b>Development Finance Institutions, Domestic</b> (FADA, FSDEA),                                |                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                 |

<sup>87</sup> These are potential classifications and not final, the climate adaptation investment plan of this NAP will finalise these details.

<sup>88</sup> Project deliveries partners provided here were identified through reviewing accredited entities of the main climate funds (GCF, GEF and Adaptation Fund) and other MDBs, by sectors. For the potential delivery partners, priority was given to those accredited entities with presence in the country through the country office or regional office.

<sup>89</sup> Potential delivery partner for accessing and delivering the relevant projects. The lists are informed through reviewing accredited entities of the main climate funds and other MDBs by sectors.

| Sector | Priority Adaptation Actions                                                                                                      | Cost Estimate for implementation (US\$) m | Time Horizon (Implementation Period) | Scale    | Activity type            | Financing structure | Potential Funding Sources                                | Financial Instrument | Potential Delivery Partners <sup>89</sup>                                                                  |
|--------|----------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|--------------------------------------|----------|--------------------------|---------------------|----------------------------------------------------------|----------------------|------------------------------------------------------------------------------------------------------------|
|        | Promote conservation agriculture and integrated water resource management (IWRM) to diverse social groups                        | Cost estimate in CIAP                     | P2 through to P3                     | National | Soft and Physical action | A                   | Adaptation for Smallholder Agriculture Programme (ASAP). |                      | (WWF), IFC, World Bank regional and country office; FAO; Ministry of Agriculture and Fisheries (MINAGRIP). |
|        | Improve food storage and distribution to consider climate change impacts                                                         | Cost estimate in CIAP                     | P1 through to P3                     | National | Soft and Physical action | A                   |                                                          |                      |                                                                                                            |
|        | Creation of seed banks,                                                                                                          | Cost estimate in CIAP                     | P2 – P3                              | National | Physical action          | A                   |                                                          |                      |                                                                                                            |
|        | Promote the use of biological fertilizers                                                                                        | Cost estimate in CIAP                     | P2 – P3                              | National | Physical action          | A B                 |                                                          |                      |                                                                                                            |
|        | Train staff and qualify technicians and producers to adopt approaches, systems, and technologies that promote climate adaptation | Cost estimate in CIAP                     | P1 – P2                              | National | Soft action              | A                   |                                                          |                      |                                                                                                            |

| Sector | Priority Adaptation Actions                                                                                                                    | Cost Estimate for implementation (US\$) m | Time Horizon (Implementation Period) | Scale                                        | Activity type            | Financing structure | Potential Funding Sources                                                                                                                                              | Financial Instrument | Potential Delivery Partners <sup>89</sup> |
|--------|------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|--------------------------------------|----------------------------------------------|--------------------------|---------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------------------|
|        | Train smallholder and rural farmers, including women and youth, to adopt farming systems that promote climate-resilient farming                | Cost estimate in CIAP                     | P1 – P2                              | National prioritising the southern provinces | Soft and Physical action | A                   |                                                                                                                                                                        |                      |                                           |
|        | Expansion of water-saving irrigation and efficient technology, such as drip irrigation                                                         | Cost estimate in CIAP                     | P2 – P3                              | National                                     | Physical action          | A B C               | <b>Multilateral Climate Funds</b> – GCF, GEF, LDCF, AF etc.<br><br><b>Financial/institutional investors, commercial banks etc.</b><br><br><b>Household investments</b> |                      |                                           |
|        | Promote weather index insurance products as a wider portfolio of risk management services offered to farmers, prioritising smallholder farmers | Cost estimate in CIAP                     | P1 through to P3                     | National                                     | Soft action              | B C                 |                                                                                                                                                                        |                      |                                           |
|        | Rehabilitate irrigation                                                                                                                        | Cost estimate in CIAP Cost                | P2 – P3                              | National                                     | Physical action          | B A C               |                                                                                                                                                                        |                      |                                           |

| Sector    | Priority Adaptation Actions                                                                                                                                                                | Cost Estimate for implementation (US\$) m | Time Horizon (Implementation Period) | Scale                      | Activity type            | Financing structure                                                                                                                                                         | Potential Funding Sources                                                                                    | Financial Instrument                                  | Potential Delivery Partners <sup>89</sup>                                                                                         |
|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|--------------------------------------|----------------------------|--------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
|           | infrastructure, including upgrading the technology and retrofitting it with climate-resilient material                                                                                     | estimate in CIAP                          |                                      |                            |                          |                                                                                                                                                                             |                                                                                                              |                                                       |                                                                                                                                   |
|           | Develop or adapt innovative technologies that guarantee sustainable use and increased efficiency of water use in agricultural production systems, including the efficient use of rainwater | Cost estimate in CIAP                     | P2 – P3                              | National                   | Soft and Physical action |       |                                                                                                              |                                                       |                                                                                                                                   |
| Fisheries | Develop and implement support programs for conservation and sustainable use of marine resources                                                                                            | Cost estimate in CIAP                     | P1 through to P3                     | Provinces in coastal areas | Soft and Physical action |   | <b>Multilateral Climate Funds</b> – GCF, GEF, LDCF, AF etc.<br><br><b>Bilateral development cooperation,</b> | Grants, Equity, Debt (including Concessional and non- | UNDP country and regional office; UNICEF Regional and country office; UNEP regional office; Japan International Cooperation IFAD, |

| Sector | Priority Adaptation Actions                                                                                          | Cost Estimate for implementation (US\$) m | Time Horizon (Implementation Period) | Scale                      | Activity type            | Financing structure | Potential Funding Sources                                                                                                                                                     | Financial Instrument                                    | Potential Delivery Partners <sup>89</sup>                                                                                                 |
|--------|----------------------------------------------------------------------------------------------------------------------|-------------------------------------------|--------------------------------------|----------------------------|--------------------------|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
|        | Integrate scientific knowledge and fishers' local knowledge in decision-making for management                        | Cost estimate in CIAP                     | P1 through to P3                     | Provinces in coastal areas | Soft and action          | A                   | <b>Multilateral Development Institutions</b> (World Bank, AfDB, ADB etc.),<br><br><b>Philanthropy, Development Finance Institutions,</b><br><br><b>Domestic</b> (FADA, FSDEA) | concessional loans, GSSS bonds),<br><br>Blended finance | AfDB country and regional office, TNC, World Bank regional and country office; FAO; MINAGRIP, Ministry of Fisheries and Marine Resources. |
|        | Implement six fisheries management plans for the six coastal municipalities                                          | Cost estimate in CIAP                     | P1 through to P3                     | Provinces in coastal areas | Soft action              | A                   |                                                                                                                                                                               |                                                         |                                                                                                                                           |
|        | Set up and operationalize a monitoring system with ocean boats                                                       | Cost estimate in CIAP                     | P1 through to P3                     | Provinces in coastal areas | Soft and physical action | A                   |                                                                                                                                                                               |                                                         |                                                                                                                                           |
|        | Promote research on climate resilience and sustainability within the Benguela Current Large Marine Ecosystem (BCLME) | Cost estimate in CIAP                     | P1 through to P3                     | Provinces in coastal areas | Soft and action          | A                   |                                                                                                                                                                               |                                                         |                                                                                                                                           |

| Sector | Priority Adaptation Actions                                                                                                              | Cost Estimate for implementation (US\$) m | Time Horizon (Implementation Period) | Scale                      | Activity type            | Financing structure | Potential Funding Sources | Financial Instrument | Potential Delivery Partners <sup>89</sup> |
|--------|------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|--------------------------------------|----------------------------|--------------------------|---------------------|---------------------------|----------------------|-------------------------------------------|
|        | Support research on climate change impacts on fishing productivity and coastal economies to inform or update risk and vulnerability data | Cost estimate in CIAP                     | P1 through to P3                     | Provinces in coastal areas | Soft action              | A                   |                           |                      |                                           |
|        | Strengthen data collection on fish stocks, environmental conditions, and climate change impacts to inform management decisions           | Cost estimate in CIAP                     | P2 – P3                              | Provinces in coastal areas | Soft and Physical action | A                   |                           |                      |                                           |
|        | Restore and protect critical degraded habitats, such as mangroves to promote biodiversity                                                | Cost estimate in CIAP                     | P2 – P3                              | Provinces in coastal areas | Soft and Physical action | A                   |                           |                      |                                           |
|        | Establish Marine Protected                                                                                                               | Cost estimate in CIAP                     | P1                                   | Provinces in coastal areas | Soft and Physical action | A                   |                           |                      |                                           |

| Sector | Priority Adaptation Actions                                                                                                                | Cost Estimate for implementation (US\$) m | Time Horizon (Implementation Period) | Scale                      | Activity type | Financing structure | Potential Funding Sources | Financial Instrument | Potential Delivery Partners <sup>89</sup> |
|--------|--------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|--------------------------------------|----------------------------|---------------|---------------------|---------------------------|----------------------|-------------------------------------------|
|        | Areas covering more than 10% of Angola's exclusive economic zone                                                                           |                                           |                                      |                            |               |                     |                           |                      |                                           |
|        | Improve technical capacity to develop and implement climate modelling projects for the different fisheries production systems              | Cost estimate in CIAP                     | P1 – P2                              | National                   | Soft action   | A                   |                           |                      |                                           |
|        | Train staff and qualify technicians and fishermen to adopt systems and technologies that help the fisheries sector adapt to climate change | Cost estimate in CIAP                     | P1 – P2                              | National                   | Soft action   | A                   |                           |                      |                                           |
|        | Training programs for fishermen, including                                                                                                 | Cost estimate in CIAP                     | P1 – P2                              | Provinces in coastal areas | Soft action   | A                   |                           |                      |                                           |

| Sector          | Priority Adaptation Actions                                                                                                              | Cost Estimate for implementation (US\$) m | Time Horizon (Implementation Period) | Scale                                           | Activity type            | Financing structure | Potential Funding Sources                                                                                                                                                                                           | Financial Instrument                                                                                  | Potential Delivery Partners <sup>89</sup>                                                                                                                                                                                                                            |
|-----------------|------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|--------------------------------------|-------------------------------------------------|--------------------------|---------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                 | women and youth in the fields of artisanal and sustainable fishing                                                                       |                                           |                                      |                                                 |                          |                     |                                                                                                                                                                                                                     |                                                                                                       |                                                                                                                                                                                                                                                                      |
|                 | Enhance institutional capacity to monitor and implement better management systems                                                        | Cost estimate in CIAP                     | P1 – P2                              | National                                        | Soft and Physical action | A                   |                                                                                                                                                                                                                     |                                                                                                       |                                                                                                                                                                                                                                                                      |
| Water Resources | Construction of catchment retention and infiltration basins in flood-sensitive zones to receive rainwater from drainage network channels | Cost estimate in CIAP                     | P2 – P3                              | National but prioritising flood exposed regions | Physical action          | A                   | <b>Multilateral Climate Funds</b> – GCF, GEF, LDCF, AF etc.<br><br><b>Bilateral development cooperation,</b><br><br><b>Multilateral Development Institutions</b> (World Bank, AfDB, ADB etc.),<br><br>Philanthropy, | Grants, Equity, Debt (including Concessional and non-concessional loans, GSSS bonds), Blended finance | UNDP country and regional office; UNICEF Regional and country office; UNEP regional office; JICA; AfDB country and regional office, Development Bank of Southern Africa (DBSA), World Wildlife Fund, Inc. (WWF), TNC, World Bank regional and country office; MINEA. |
|                 | Establish robust and integrated river basin monitoring systems (including periodic surveys                                               | Cost estimate in CIAP                     | P1 – P2                              | National                                        | Soft and Physical action | A                   |                                                                                                                                                                                                                     |                                                                                                       |                                                                                                                                                                                                                                                                      |

| Sector | Priority Adaptation Actions                                                                                                                             | Cost Estimate for implementation (US\$) m | Time Horizon (Implementation Period) | Scale    | Activity type            | Financing structure | Potential Funding Sources                          | Financial Instrument | Potential Delivery Partners <sup>89</sup> |
|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|--------------------------------------|----------|--------------------------|---------------------|----------------------------------------------------|----------------------|-------------------------------------------|
|        | of river basins and groundwater) and rainfall forecasts                                                                                                 |                                           |                                      |          |                          |                     | Development Finance Institutions, Domestic (FSDEA) |                      |                                           |
|        | Increase the number of meteorological and hydrometric stations to improve precipitation monitoring in major river basins                                | Cost estimate in CIAP                     | P1 – P2                              | National | Physical action          | A                   |                                                    |                      |                                           |
|        | Develop and implement an Integrated Water Resource Management (IWRM) action plan in pilot provinces to feed the development of a national IWRM strategy | Cost estimate in CIAP                     | P1 through to P3                     | National | Soft action              | A                   |                                                    |                      |                                           |
|        | Invest in water storage, including groundwater                                                                                                          | Cost estimate in CIAP                     | P2 – P3                              | National | Soft and Physical action | A                   |                                                    |                      |                                           |

| Sector | Priority Adaptation Actions                                                                                                                                                                     | Cost Estimate for implementation (US\$) m | Time Horizon (Implementation Period) | Scale    | Activity type   | Financing structure                 | Potential Funding Sources | Financial Instrument | Potential Delivery Partners <sup>89</sup> |
|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|--------------------------------------|----------|-----------------|-------------------------------------|---------------------------|----------------------|-------------------------------------------|
|        | and watershed storage, through nature-based solutions                                                                                                                                           |                                           |                                      |          |                 |                                     |                           |                      |                                           |
|        | Develop drinking water collection, treatment, and distribution systems, prioritizing the most vulnerable areas, including wastewater management within an overarching circular economy approach | Cost estimate in CIAP                     | P1 through to P3                     | National | Physical action | <div><div>A</div><div>B</div></div> |                           |                      |                                           |
|        | Increase access to potable water through rehabilitation and installation of boreholes and water wells in areas most affected by climate-induced water                                           | Cost estimate in CIAP                     | P1 through to P3                     | National | Physical action |                                     |                           |                      |                                           |

| Sector | Priority Adaptation Actions                                                                                                                                                                                                                     | Cost Estimate for implementation (US\$) m | Time Horizon (Implementation Period) | Scale                                           | Activity type   | Financing structure | Potential Funding Sources | Financial Instrument | Potential Delivery Partners <sup>89</sup> |
|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|--------------------------------------|-------------------------------------------------|-----------------|---------------------|---------------------------|----------------------|-------------------------------------------|
|        | scarcity, and ensure proper treatment and reuse of wastewater                                                                                                                                                                                   |                                           |                                      |                                                 |                 |                     |                           |                      |                                           |
|        | Improve by retrofitting existing wastewater collection and treatment systems to climate-resilient materials and building new systems that are climate-resilient in deprived areas, focusing on urban areas with a high population concentration | Cost estimate in CIAP                     | P2 – P3                              | National                                        | Physical action | A                   |                           |                      |                                           |
|        | Build and reinforce flood defenses near wastewater treatment and waste storage systems                                                                                                                                                          | Cost estimate in CIAP                     | P2 – P3                              | National but prioritizing flood exposed regions | Physical action | A B                 |                           |                      |                                           |

| Sector | Priority Adaptation Actions                                                                                                                                          | Cost Estimate for implementation (US\$) m | Time Horizon (Implementation Period) | Scale    | Activity type            | Financing structure | Potential Funding Sources | Financial Instrument | Potential Delivery Partners <sup>89</sup> |
|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|--------------------------------------|----------|--------------------------|---------------------|---------------------------|----------------------|-------------------------------------------|
|        | Build, rehabilitate, and expand sanitation systems, focusing on the construction of low-cost systems, such as septic tanks and community dry latrines in rural areas | Cost estimate in CIAP                     | P1 through to P3                     | National | Physical action          | A                   |                           |                      |                                           |
|        | Integration of existing information and monitoring systems to develop an IWRM information management system                                                          | Cost estimate in CIAP                     | P1 through to P3                     | National | Soft action              | A                   |                           |                      |                                           |
|        | Develop or rehabilitate water resource information and monitoring systems                                                                                            | Cost estimate in CIAP                     | P1 – P2                              | National | Soft and Physical action | A                   |                           |                      |                                           |
|        | Protect and restore wetlands and                                                                                                                                     | Cost estimate in CIAP                     | P2 – P3                              | National | Soft and                 | A                   |                           |                      |                                           |

| Sector | Priority Adaptation Actions                                                                                                                          | Cost Estimate for implementation (US\$) m | Time Horizon (Implementation Period) | Scale    | Activity type   | Financing structure | Potential Funding Sources | Financial Instrument | Potential Delivery Partners <sup>89</sup> |
|--------|------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|--------------------------------------|----------|-----------------|---------------------|---------------------------|----------------------|-------------------------------------------|
|        | floodplains to improve water storage, filtration, and flood control to reduce flood risks                                                            |                                           |                                      |          | Physical action |                     |                           |                      |                                           |
|        | Strengthen the regulatory and institutional framework of the water sector and strengthen the capacities towards Integrated Water Resource Management | Cost estimate in CIAP                     | P1                                   | National | Soft action     | A                   |                           |                      |                                           |
|        | Training on IWRM and climate adaptation, technical capacity and skills for implementing and operating climate-resilient water technology             | Cost estimate in CIAP                     | P1                                   | National | Soft action     | A                   |                           |                      |                                           |
|        | Build new dams and rehabilitate                                                                                                                      | Cost estimate in CIAP                     | P2 – P3                              | National | Physical action | B C                 |                           |                      |                                           |

| Sector        | Priority Adaptation Actions                                                                                                | Cost Estimate for implementation (US\$) m | Time Horizon (Implementation Period) | Scale                                                 | Activity type   | Financing structure | Potential Funding Sources                                                                                                                                                                  | Financial Instrument                                                                                  | Potential Delivery Partners <sup>89</sup>                                                                                                                                                                                                 |
|---------------|----------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|--------------------------------------|-------------------------------------------------------|-----------------|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|               | existing dams with high storage capacities to regularize inflows to satisfy multiple users                                 |                                           |                                      |                                                       |                 |                     |                                                                                                                                                                                            |                                                                                                       |                                                                                                                                                                                                                                           |
| Coastal Zones | Develop and implement flood and erosion risk maps as decision-making tools for the main coastal units on a municipal scale | Cost estimate in CIAP                     | P1 through to P3                     | Provinces prone to flood mostly the coastal provinces | Soft action     | A                   | <b>Multilateral Climate Funds</b> – GCF, GEF, LDCF, AF etc.<br><b>Bilateral development cooperation,</b><br><br><b>Multilateral Development Institutions</b> (World Bank, AfDB, ADB etc.). | Grants, Equity, Debt (including Concessional and non-concessional loans, GSSS bonds), Blended finance | UNDP country and regional office; UNICEF Regional and country office; UNEP regional office; UN-Habitat; Japan JICA, AfDB country and regional office, World Bank regional and country office; Ministry of Fisheries and Marine Resources. |
|               | Adopt the use of vegetated coastal ecosystems                                                                              | Cost estimate in CIAP                     | P2 – P3                              | Provinces in coastal provinces                        | Physical action | A                   |                                                                                                                                                                                            |                                                                                                       |                                                                                                                                                                                                                                           |
|               | Build structures to protect coastal communities and key infrastructure from mean sea level rise and coastal                | Cost estimate in CIAP                     | P2 – P3                              | Provinces in coastal provinces                        | Physical action | A B                 | <b>Philanthropy,</b><br><br><b>Development Finance Institutions,</b><br><br><b>Domestic</b> (FSDEA),                                                                                       |                                                                                                       |                                                                                                                                                                                                                                           |

| Sector | Priority Adaptation Actions                                                                                                                                                                                                                                           | Cost Estimate for implementation (US\$) m | Time Horizon (Implementation Period) | Scale                          | Activity type   | Financing structure | Potential Funding Sources                                                                 | Financial Instrument | Potential Delivery Partners <sup>89</sup> |
|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|--------------------------------------|--------------------------------|-----------------|---------------------|-------------------------------------------------------------------------------------------|----------------------|-------------------------------------------|
|        | flooding, including upgrading existing infrastructure                                                                                                                                                                                                                 |                                           |                                      |                                |                 |                     | Financial/<br>institutional investors, commercial banks etc.<br><br>Household investments |                      |                                           |
|        | Implement a monitoring system of the evolution of coastal space and the coastal system capable of guaranteeing the systematic acquisition, organization and archiving of basic data, with an effective user interface (Coastal Resource Management System application | Cost estimate in CIAP                     | P1 through to P3                     | Provinces in coastal provinces | Soft action     | A                   |                                                                                           |                      |                                           |
|        | Reduce the occupation of land located in areas at high risk of flooding in coastal zones                                                                                                                                                                              | Cost estimate in CIAP                     | P1 through to P3                     | Provinces in coastal provinces | Physical action | A                   |                                                                                           |                      |                                           |

| Sector | Priority Adaptation Actions                                                                                                                                             | Cost Estimate for implementation (US\$) m | Time Horizon (Implementation Period) | Scale                                                  | Activity type            | Financing structure | Potential Funding Sources | Financial Instrument | Potential Delivery Partners <sup>89</sup> |
|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|--------------------------------------|--------------------------------------------------------|--------------------------|---------------------|---------------------------|----------------------|-------------------------------------------|
|        | Climate risk-informed occupation of land located in areas at high risk of flooding in coastal zones (new occupation) – inspection and enforcement of zoning regulations | Cost estimate in CIAP                     | P1 through to P3                     | Provinces in coastal provinces                         | Soft action              | A                   |                           |                      |                                           |
|        | Strengthen surveillance to prevent the occupation of land located in high flood-risk zones in coastal areas                                                             | Cost estimate in CIAP                     | P1 through to P3                     | National but prioritize provinces in coastal provinces | Soft and Physical action | A                   |                           |                      |                                           |
|        | Develop and implement an Integrated Coastal Zone Management (ICZM) plan                                                                                                 | Cost estimate in CIAP                     | P1 through to P3                     | National                                               | Soft and Physical action | A                   |                           |                      |                                           |
|        | Promote climate risk insurance for coastal zone communities,                                                                                                            | Cost estimate in CIAP                     | P1 through to P3                     | Coastal zones                                          | Soft action              | B C                 |                           |                      |                                           |

| Sector                               | Priority Adaptation Actions                                                                                                                                                  | Cost Estimate for implementation (US\$) m | Time Horizon (Implementation Period) | Scale    | Activity type | Financing structure | Potential Funding Sources                                                                                                                                                     | Financial Instrument                                                                                 | Potential Delivery Partners <sup>89</sup>                                                                                                                                                                                  |
|--------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|--------------------------------------|----------|---------------|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                      | including for key economic activities                                                                                                                                        |                                           |                                      |          |               |                     |                                                                                                                                                                               |                                                                                                      |                                                                                                                                                                                                                            |
|                                      | Promote research on regular assessment of the impacts of climate change (focusing on modifications, sedimentation, salinization levels and coastal erosion) in coastal zones | Cost estimate in CIAP                     | P1 through to P3                     | National | Soft action   | A                   |                                                                                                                                                                               |                                                                                                      |                                                                                                                                                                                                                            |
| Forests, Ecosystems and Biodiversity | Improve the management of current conservation areas and continue creating new ones                                                                                          | Cost estimate in CIAP                     | P1 through to P3                     | National | Soft action   | A                   | <b>Multilateral Climate Funds</b> – GCF, GEF, LDCF, AF etc.<br><br><b>Bilateral development cooperation,</b><br><br><b>Multilateral Development Institutions</b> (World Bank, | Grants, Equity, Debt (including Concessional and non-concessional loans, GSSS bonds) Blended finance | UNDP country and regional office; UNICEF Regional and country office; UNEP; Conservation International Foundation (CI), International Union for Conservation of Nature (IUCN), Development Bank of Southern Africa (DBSA), |
|                                      | Establish and implement conservation plans for different climate patterns                                                                                                    | Cost estimate in CIAP                     | P1 through to P3                     | National | Soft action   | A                   |                                                                                                                                                                               |                                                                                                      |                                                                                                                                                                                                                            |

| Sector | Priority Adaptation Actions                                                                                                          | Cost Estimate for implementation (US\$) m | Time Horizon (Implementation Period) | Scale                                  | Activity type            | Financing structure | Potential Funding Sources                                                                                   | Financial Instrument | Potential Delivery Partners <sup>89</sup>                                                                                                 |
|--------|--------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|--------------------------------------|----------------------------------------|--------------------------|---------------------|-------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
|        | Strengthen existing mechanisms for identifying and responding in a timely manner to changes in biodiversity caused by climate change | Cost estimate in CIAP                     | P1 through to P3                     | National                               | Soft action              | A                   | AfDB, ADB etc.).<br><br>Philanthropy,<br><br>Development Finance Institutions,<br><br>Domestic – FSDEA, FNA |                      | AfDB country and regional office, International Finance Corporation (IFC), TNC, IFAD, WWF, World Bank regional and country office, MINEA. |
|        | Protection of the springs of the main rivers and lakes                                                                               | Cost estimate in CIAP                     | P2 – P3                              | National                               | Soft and Physical action | A                   |                                                                                                             |                      |                                                                                                                                           |
|        | Protection of wetlands, peatlands and riparian vegetation                                                                            | Cost estimate in CIAP                     | P2 – P3                              | National                               | Soft and Physical action | A                   |                                                                                                             |                      |                                                                                                                                           |
|        | Integration of sustainable biodiversity and ecosystem management into territorial planning in at least 10 provinces                  | Cost estimate in CIAP                     | P2 – P3                              | National                               | Soft action              | A                   |                                                                                                             |                      |                                                                                                                                           |
|        | Develop and implement plans to monitor the                                                                                           | Cost estimate in CIAP                     | P1 through to P3                     | Provinces that experience forest fires | Soft and Physical action | A                   |                                                                                                             |                      |                                                                                                                                           |

| Sector | Priority Adaptation Actions                                                                                                                                                                                     | Cost Estimate for implementation (US\$) m | Time Horizon (Implementation Period) | Scale                                | Activity type            | Financing structure | Potential Funding Sources | Financial Instrument | Potential Delivery Partners <sup>89</sup> |
|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|--------------------------------------|--------------------------------------|--------------------------|---------------------|---------------------------|----------------------|-------------------------------------------|
|        | evolution of forest areas, ecosystems and biodiversity and their conservation status, on a national and regional scale                                                                                          |                                           |                                      |                                      |                          |                     |                           |                      |                                           |
|        | Implement actions for the sustainable management and preservation of forest perimeters throughout the national territory and recover degraded areas to contain desertification and reduce climate vulnerability | Cost estimate in CIAP                     | P2 – P3                              | National                             | Soft and Physical action | A                   |                           |                      |                                           |
|        | Develop and implement forest fire prevention actions                                                                                                                                                            | Cost estimate in CIAP                     | P1 through to P3                     | National but focus on provinces that | Soft and Physical action | A                   |                           |                      |                                           |

| Sector       | Priority Adaptation Actions                                                                    | Cost Estimate for implementation (US\$) m | Time Horizon (Implementation Period) | Scale                                                        | Activity type            | Financing structure | Potential Funding Sources                                   | Financial Instrument                                                     | Potential Delivery Partners <sup>89</sup>                                                                |
|--------------|------------------------------------------------------------------------------------------------|-------------------------------------------|--------------------------------------|--------------------------------------------------------------|--------------------------|---------------------|-------------------------------------------------------------|--------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|
|              |                                                                                                |                                           |                                      | experience forest fires                                      |                          |                     |                                                             |                                                                          |                                                                                                          |
|              | Implement early burning program to prevent or reduce the risk of fire                          | Cost estimate in CIAP                     | P1 through to P3                     | National but focus on provinces that experience forest fires | Physical action          | A                   |                                                             |                                                                          |                                                                                                          |
|              | Reduce end of dry season fires in the five most affected provinces and regions                 | Cost estimate in CIAP                     | P1 through to P3                     | National but focus on provinces that experience forest fires | Soft action              | A                   |                                                             |                                                                          |                                                                                                          |
|              | Develop and implement fire management programs in municipal master plans                       | Cost estimate in CIAP                     | P1 through to P3                     | National but focus on provinces that experience forest fires | Soft and Physical action | A                   |                                                             |                                                                          |                                                                                                          |
| Human health | Develop and implement surveillance systems for monitoring climate-related diseases and vectors | Cost estimate in CIAP                     | P1 through to P3                     | National                                                     | Soft and Physical action | A                   | <b>Multilateral Climate Funds</b> – GCF, GEF, LDCF, AF etc. | Grants, Equity, Debt (including Concessional and non-concessional loans, | UNDP country and regional office; UNICEF Regional and country office; WHO, UNEP; World Bank regional and |

| Sector | Priority Adaptation Actions                                                                                                                                                             | Cost Estimate for implementation (US\$) m | Time Horizon (Implementation Period) | Scale    | Activity type            | Financing structure | Potential Funding Sources                                                                                                                                                                                                              | Financial Instrument           | Potential Delivery Partners <sup>89</sup> |
|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|--------------------------------------|----------|--------------------------|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-------------------------------------------|
|        | Map disease risks affecting the most exposed communities to inform decision-making                                                                                                      | Cost estimate in CIAP                     | P1 – P2                              | National | Soft action              | A                   | <b>Bilateral development cooperation,</b><br><br><b>Multilateral Development Institutions</b> (World Bank, AfDB, ADB etc.).<br><br><b>Philanthropy,</b><br><br><b>Development Finance Institutions,</b><br><br><b>Domestic – FSDEA</b> | GSSS bonds)<br>Blended finance | country office; MINSA                     |
|        | Improve the prevention and response capacity of the national health system                                                                                                              | Cost estimate in CIAP                     | P2 – P3                              | National | Soft action              | A                   |                                                                                                                                                                                                                                        |                                |                                           |
|        | Improve diagnostic tests and increasing health service access, particularly to children (infants), the elderly, people with disabilities, and the most vulnerable (pregnant) population | Cost estimate in CIAP                     | P1 through to P3                     | National | Soft and Physical action | A                   |                                                                                                                                                                                                                                        |                                |                                           |
|        | Expand access to malaria vaccines to                                                                                                                                                    | Cost estimate in CIAP                     | P1 through to P3                     | National | Physical action          | A                   |                                                                                                                                                                                                                                        |                                |                                           |

| Sector          | Priority Adaptation Actions                                                                                                                             | Cost Estimate for implementation (US\$) m | Time Horizon (Implementation Period) | Scale    | Activity type            | Financing structure | Potential Funding Sources                                   | Financial Instrument                                  | Potential Delivery Partners <sup>89</sup>                                                  |
|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|--------------------------------------|----------|--------------------------|---------------------|-------------------------------------------------------------|-------------------------------------------------------|--------------------------------------------------------------------------------------------|
|                 | cover all population                                                                                                                                    |                                           |                                      |          |                          |                     |                                                             |                                                       |                                                                                            |
|                 | Develop and implement a Health National Adaptation Plan                                                                                                 | Cost estimate in CIAP                     | P1 through to P3                     | National | Soft and Physical action | A                   |                                                             |                                                       |                                                                                            |
|                 | Public information campaigns on climate change, human health and hygiene for the prevention of climate-induced diseases (prioritizing malaria, cholera) | Cost estimate in CIAP                     | P1 through to P3                     | National | Soft action              | A                   |                                                             |                                                       |                                                                                            |
|                 | Train the Ministry of Health's workforce on climate change and health                                                                                   | Cost estimate in CIAP                     | P1 through to P3                     | National | Soft action              | A                   |                                                             |                                                       |                                                                                            |
| Infrastructures | Rehabilitate main drainage installations, adjusting them to urban infrastructure                                                                        | Cost estimate in CIAP                     | P2 – P3                              | National | Physical action          | A B                 | <b>Multilateral Climate Funds</b> – GCF, GEF, LDCF, AF etc. | Grants, Equity, Debt (including Concessional and non- | UNDP country and regional office; UNICEF Regional and country office; UNEP; Africa Finance |

| Sector | Priority Adaptation Actions                                                                                                                               | Cost Estimate for implementation (US\$) m | Time Horizon (Implementation Period) | Scale                                        | Activity type            | Financing structure | Potential Funding Sources                                                                                                                                                                                                               | Financial Instrument                               | Potential Delivery Partners <sup>89</sup>                                                                |
|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|--------------------------------------|----------------------------------------------|--------------------------|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|----------------------------------------------------------------------------------------------------------|
|        | standards, including retrofitting the drainage system to be climate-resilient                                                                             |                                           |                                      |                                              |                          |                     | <b>Bilateral development cooperation,</b><br><br><b>Multilateral Development Institutions</b> (World Bank, AfDB, ADB etc.).<br><br><b>Philanthropy,</b><br><br><b>Development Finance Institutions,</b><br><br><b>Domestic – FSDEA;</b> | concessional loans, GSSS bonds)<br>Blended finance | Corporation (AFC), AfDB country and regional office, IFC, World Bank regional and country office; MINEA. |
|        | Develop and implement municipal climate change adaptation plans for eight municipalities that integrate NbS and EbA measures (green/ blue infrastructure) | Cost estimate in CIAP                     | P1 through to P3                     | Provinces with the eight cities              | Soft and Physical action | A                   |                                                                                                                                                                                                                                         |                                                    |                                                                                                          |
|        | Map human settlements at risk of flooding and erosion                                                                                                     | Cost estimate in CIAP                     | P1                                   | National but prioritize flood risk provinces | Soft action              | A                   |                                                                                                                                                                                                                                         |                                                    |                                                                                                          |
|        | Consideration of climate risk and information in the design of new or rehabilitation of existing key infrastructure,                                      | Cost estimate in CIAP                     | P1 through to P3                     | National                                     | Soft action              | A                   |                                                                                                                                                                                                                                         |                                                    |                                                                                                          |

| Sector | Priority Adaptation Actions                                                                                                                                   | Cost Estimate for implementation (US\$) m | Time Horizon (Implementation Period) | Scale    | Activity type | Financing structure                                                                   | Potential Funding Sources | Financial Instrument | Potential Delivery Partners <sup>89</sup> |
|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|--------------------------------------|----------|---------------|---------------------------------------------------------------------------------------|---------------------------|----------------------|-------------------------------------------|
|        | such as roads and urban infrastructure                                                                                                                        |                                           |                                      |          |               |                                                                                       |                           |                      |                                           |
|        | Implement building codes and designs, including retrofitting existing buildings to make them climate-resilient                                                | Cost estimate in CIAP                     | P1 through to P3                     | National | Soft action   |    |                           |                      |                                           |
|        | Develop and implement national and local guidelines for climate-resilient infrastructure and human settlement development, including for informal settlements | Cost estimate in CIAP                     | P1 through to P3                     | National | Soft action   |    |                           |                      |                                           |
|        | Develop and implement training programs for climate-resilient construction and                                                                                | Cost estimate in CIAP                     | P1 – P2                              | National | Soft action   |  |                           |                      |                                           |

| Sector                                    | Priority Adaptation Actions                                                                                                                                                        | Cost Estimate for implementation (US\$) m | Time Horizon (Implementation Period) | Scale              | Activity type            | Financing structure | Potential Funding Sources                                                                                                                                                                      | Financial Instrument                                                                                 | Potential Delivery Partners <sup>89</sup>                                                                                                                                                                                  |
|-------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|--------------------------------------|--------------------|--------------------------|---------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                           | infrastructure in both public and private sectors                                                                                                                                  |                                           |                                      |                    |                          |                     |                                                                                                                                                                                                |                                                                                                      |                                                                                                                                                                                                                            |
|                                           | Strengthen the technical skills of public services to assess and manage risks in the urban planning sector.                                                                        | Cost estimate in CIAP                     | P1                                   | Urban municipality | Soft action              | A                   |                                                                                                                                                                                                |                                                                                                      |                                                                                                                                                                                                                            |
| Disaster Preparedness and Risk Management | Implement water collection and storage systems in drought-prone areas to guarantee the continuity of human and livestock supply, including freshwater for economy and biodiversity | Cost estimate in CIAP                     | P2 – P3                              | National           | Physical action          | A                   | <b>Multilateral Climate Funds</b> – GCF, GEF, LDCF, AF etc.<br><br><b>Bilateral development cooperation.</b><br><br><b>Multilateral Development Institutions</b> (World Bank, AfDB, ADB etc.), | Grants, Equity, Debt (including Concessional and non-concessional loans, GSSS bonds) Blended finance | UNDP country and regional office; UNICEF Regional and country office; UNEP; Japan International Cooperation Agency (JICA), Development Bank of Southern Africa (DBSA), WFP, World Bank regional and country office; MINEA. |
|                                           | Set up drought monitoring systems to identify the evolution of                                                                                                                     | Cost estimate in CIAP                     | P2 – P3                              | National           | Soft and Physical action | A                   | Philanthropy,                                                                                                                                                                                  |                                                                                                      |                                                                                                                                                                                                                            |

| Sector | Priority Adaptation Actions                                                                                  | Cost Estimate for implementation (US\$) m | Time Horizon (Implementation Period) | Scale    | Activity type            | Financing structure | Potential Funding Sources                          | Financial Instrument | Potential Delivery Partners <sup>89</sup> |
|--------|--------------------------------------------------------------------------------------------------------------|-------------------------------------------|--------------------------------------|----------|--------------------------|---------------------|----------------------------------------------------|----------------------|-------------------------------------------|
|        | meteorological drought situations in risk areas                                                              |                                           |                                      |          |                          |                     | Development Finance Institutions, Domestic – FSDEA |                      |                                           |
|        | Develop and implement drought impact prevention systems in drought high-risk areas                           | Cost estimate in CIAP                     | P2 – P3                              | National | Soft and Physical action | A                   |                                                    |                      |                                           |
|        | Implement a national flood awareness program in high-risk regions                                            | Cost estimate in CIAP                     | P2 – P3                              | National | Physical action          | A                   |                                                    |                      |                                           |
|        | Build flood protection barriers along the main rivers (vegetation or physical barriers) in flood-prone areas | Cost estimate in CIAP                     | P2 – P3                              | National | Physical action          | A                   |                                                    |                      |                                           |
|        | Design and implement water drainage systems in high-risk areas-based climate                                 | Cost estimate in CIAP                     | P2 – P3                              | National | Physical action          | A                   |                                                    |                      |                                           |

| Sector | Priority Adaptation Actions                                                                                                                      | Cost Estimate for implementation (US\$) m | Time Horizon (Implementation Period) | Scale                                        | Activity type            | Financing structure | Potential Funding Sources | Financial Instrument | Potential Delivery Partners <sup>89</sup> |
|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|--------------------------------------|----------------------------------------------|--------------------------|---------------------|---------------------------|----------------------|-------------------------------------------|
|        | risk assessments                                                                                                                                 |                                           |                                      |                                              |                          |                     |                           |                      |                                           |
|        | Develop and implement emergency preparedness plans and flood risk reduction strategies, including strategies for resolving governance issues     | Cost estimate in CIAP                     | P2 – P3                              | National but prioritize flood risk provinces | Soft and Physical action | A                   |                           |                      |                                           |
|        | Implement ICZM plans incorporating considerations for sea-level rise into land use planning, infrastructure development, and resource management | Cost estimate in CIAP                     | P1                                   | National but prioritize provinces            | Soft and Physical action | A                   |                           |                      |                                           |
|        | Develop and implement population awareness programs on flood risks in the high-risk                                                              | Cost estimate in CIAP                     | P1 through to P3                     | National                                     | Soft and Physical action | A                   |                           |                      |                                           |

| Sector                | Priority Adaptation Actions                                                                                                                     | Cost Estimate for implementation (US\$) m | Time Horizon (Implementation Period) | Scale    | Activity type            | Financing structure | Potential Funding Sources                                                                                                                                                     | Financial Instrument                                                                 | Potential Delivery Partners <sup>89</sup>                                                                                                                 |
|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|--------------------------------------|----------|--------------------------|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
|                       | regions of Cunene, Benguela, Luanda and Namibe                                                                                                  |                                           |                                      |          |                          |                     |                                                                                                                                                                               |                                                                                      |                                                                                                                                                           |
|                       | Develop and implement provincial preparedness, contingency, and recovery plans that incorporate climate-related hazards (current and predicted) | Cost estimate in CIAP                     | P1 through to P3                     | National | Soft and Physical action | A                   |                                                                                                                                                                               |                                                                                      |                                                                                                                                                           |
| Cross cutting actions | Establish and implement multi-hazard early warning systems for all                                                                              | Cost estimate in CIAP                     | P1                                   | National | Soft and Physical action | A B                 | <b>Multilateral Climate Funds</b> – GCF, GEF, LDCF, AF etc.<br><br><b>Bilateral development cooperation.</b><br><br><b>Multilateral Development Institutions</b> (World Bank, | Grants, Equity, Debt (including Concessional and non-concessional loans, GSSS bonds) | Meteorology Institute of Angola; WMO; UNDP country and regional office; UNICEF Regional and country office; UNEP; World Bank regional and country office; |
|                       | Develop or strengthen early action/ response systems, including provision/ integration of other relevant adaptation                             | Cost estimate in CIAP                     | P2 – P3                              | National | Soft and Physical action | A                   |                                                                                                                                                                               |                                                                                      |                                                                                                                                                           |

| Sector | Priority Adaptation Actions                                                                                                              | Cost Estimate for implementation (US\$) m | Time Horizon (Implementation Period) | Scale    | Activity type   | Financing structure | Potential Funding Sources                                                                                 | Financial Instrument | Potential Delivery Partners <sup>89</sup> |
|--------|------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|--------------------------------------|----------|-----------------|---------------------|-----------------------------------------------------------------------------------------------------------|----------------------|-------------------------------------------|
|        | information, such as extension services in the agricultural sector, evacuation and other response actions in the coastal zone sector     |                                           |                                      |          |                 |                     | AfDB, ADB etc.<br><br><b>Philanthropy</b><br><br>Development Finance Institutions<br><br>Domestic – FSDEA |                      |                                           |
|        | Expand new ground-based weather monitoring stations, including the rehabilitation of existing non-functional weather monitoring stations | Cost estimate in CIAP                     | P2 – P3                              | National | Physical action | A                   |                                                                                                           |                      |                                           |
|        | Promote the integration and mainstreaming of adaptation in sectoral planning and development plans, including the                        | Cost estimate in CIAP                     | P1 through to P3                     | National | Soft action     | A                   |                                                                                                           |                      |                                           |

| Sector | Priority Adaptation Actions                                                                                 | Cost Estimate for implementation (US\$) m | Time Horizon (Implementation Period) | Scale    | Activity type | Financing structure | Potential Funding Sources | Financial Instrument | Potential Delivery Partners <sup>89</sup> |
|--------|-------------------------------------------------------------------------------------------------------------|-------------------------------------------|--------------------------------------|----------|---------------|---------------------|---------------------------|----------------------|-------------------------------------------|
|        | implementation of climate budget tagging                                                                    |                                           |                                      |          |               |                     |                           |                      |                                           |
|        | Promote the integration of adaptation into relevant planning and development processes by local authorities | Cost estimate in CIAP                     | P1 through to P3                     | National | Soft action   | A                   |                           |                      |                                           |
|        | <b>Develop and operationalize a MEL system for Angola NAP</b>                                               | Cost estimate in CIAP                     | P1                                   | National | Soft action   | A                   |                           |                      |                                           |
|        | Support the integration of adaptation into relevant MEL systems of development or sectoral plans            | Cost estimate in CIAP                     | P1 through to P3                     | National | Soft action   | A                   |                           |                      |                                           |
|        | Build required institutional capacity to fully implement the MEL system for adaptation                      | Cost estimate in CIAP                     | P1 through to P3                     | National | Soft action   | A                   |                           |                      |                                           |
|        | Strengthen the capacity of national institutions to                                                         | Cost estimate in CIAP                     | P1 through to P3                     | National | Soft action   | A                   |                           |                      |                                           |

| Sector | Priority Adaptation Actions                                                                                                                                                                                                                                                                       | Cost Estimate for implementation (US\$) m | Time Horizon (Implementation Period) | Scale    | Activity type | Financing structure | Potential Funding Sources | Financial Instrument | Potential Delivery Partners <sup>89</sup> |
|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|--------------------------------------|----------|---------------|---------------------|---------------------------|----------------------|-------------------------------------------|
|        | access international climate adaptation finance and implement viable adaptation projects                                                                                                                                                                                                          |                                           |                                      |          |               |                     |                           |                      |                                           |
|        | Increase access to financial services through new or expansion of existing social protection, such as Kwenda to support the most vulnerable communities and households, prioritising female-headed houses and expanding such protection measures both vertically and horizontally to help protect | Cost estimate in CIAP                     | P1 through to P3                     | National | Soft action   | A                   | Domestic – FSDEA          | Grants               |                                           |

| Sector | Priority Adaptation Actions                      | Cost Estimate for implementation (US\$) m | Time Horizon (Implementation Period) | Scale | Activity type | Financing structure | Potential Funding Sources | Financial Instrument | Potential Delivery Partners <sup>89</sup> |
|--------|--------------------------------------------------|-------------------------------------------|--------------------------------------|-------|---------------|---------------------|---------------------------|----------------------|-------------------------------------------|
|        | household welfare in the event of climate shocks |                                           |                                      |       |               |                     |                           |                      |                                           |

### Key

| Time Horizon (Implementation Period) | Description                                                                                                                                                                                                                                                                                       |
|--------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| P1: Period 1 (2026–2027)             | These are priority actions (P1) implemented in a short period of time (1–3 years). These are mostly implemented to facilitate an enabling environment or capacity building required to fully implement the NAP. These are normally a one-off investment or require minimum resources to maintain. |
| P2: Period 2 (2028–2030)             | These are priority actions (P2) that are implemented over the medium to long term (4–10 years). These are actions mostly addressing the provision of basic services. These are implemented between 2028-2030 or through the NAP period.                                                           |
| P3 Period 3 (2028–2035)              | These are priority actions (P3) that are implemented over the medium to long term (4-10 years). These actions require substantial investments in infrastructure and technology with long-term benefits.                                                                                           |

| Scale              | Description                                                                             |
|--------------------|-----------------------------------------------------------------------------------------|
| National           | These are actions that have national relevance and are implemented on a national scale. |
| Provincial         | These are actions implemented focusing on selected provinces.                           |
| Urban municipality | These are actions mostly implemented in cities or built-up environments.                |
| District           | These are actions implemented at the district level.                                    |

| Activity type    | Description                                                                                                                                                               |
|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Physical actions | These are tangible, built changes to systems and infrastructure activities.                                                                                               |
| Soft actions     | These are non-structural measures that include changing behaviour, developing policies, improving natural systems, and making adaptive decisions to reduce vulnerability. |

## 8.5 Other Support Needs Required for Implementation of Angola NAP

In addition to the finance required to support the implementation of priority adaptation actions, technology and capacity needs are critical. These are crucial for the effective implementation of the NAP process for Angola. This section outlines the key technology and capacity needs required.

### 8.5.1. Adaptation Technology Needs

Angola has not yet conducted a full technology needs assessment for adaptation, nor for mitigation, a gap identified in the ENAC. Therefore, the NAP presents an opportunity for Angola to conduct a technology needs assessment that can comprehensively assess the level of technology needs required to successfully implement adaptation in the country. Thus, as part of the GCF Readiness Programme, a technology needs assessment for adaptation can be commissioned. The technology needs were identified through stakeholder consultation and expert solicitation, as well as from other key national documents, such as the NDC, ENAC, and Angola's Second National Communication (SNC) etc. Aligning with the Paris Agreement, article 10 requires that other technology needs be transferred from different regions, from developed and developing regions through international cooperation. There is potential for technology development and transfer for Angola's NAP to utilize existing frameworks in the UNFCCC, including the Technology Mechanism. The technology needs expressed in Table 15 are additional to the specific technologies described in adaptation actions in Table 12. The list here is just the key needs and is not exhaustive.

Table 15: Some of the known technology needs identified through a review of national documents relevant for the implementation of adaptation actions proposed in this NAP.

| Sector                        | Key technology needs                                | Adaptation options/<br>actions supported by the<br>technology                                                       | Source<br>where<br>need was<br>identified | Technolog<br>y transfer<br>required | Cost of<br>technolog<br>y |
|-------------------------------|-----------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|-------------------------------------------|-------------------------------------|---------------------------|
| Agriculture and food security | Technology for using different crops                | Introduction of new crops that suit the new climate conditions and ensure equal access for different social groups. | Angola SNC                                | Yes                                 | Cost Estimate in CAIP     |
| Agriculture and food security | Technology for increasing added value of production | Climate proof food security actions                                                                                 | Angola SNC                                | Yes                                 | Cost Estimate in CAIP     |
|                               | Technology to ensure food safety and quality        | Climate proof food security actions                                                                                 | Angola SNC                                | Yes                                 | Cost Estimate in CAIP     |
|                               | Development of new plant varieties                  | Introduction of new crops that suit the new climate conditions and ensure equal access for different social groups. | Angola SNC                                | Yes                                 | Cost Estimate in CAIP     |
|                               | Advanced seed varieties on a large scale            | Promote local varieties adapted to Angola's various regions and climate conditions                                  | Angola SNC                                | Yes                                 | Cost Estimate in CAIP     |

|                 |                                                                          |                                                                                                                                                                                                                                                                                      |            |     |                       |
|-----------------|--------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-----|-----------------------|
|                 | Drip irrigation                                                          | Expansion of water-saving irrigation and efficient technology, such as drip irrigation.<br>Rehabilitating irrigation infrastructure, including upgrading the technology and retrofitting it with climate-resilient materials,                                                        | Angola SNC | Yes | Cost Estimate in CAIP |
|                 | Water saving measures and new irrigation and rational water use schemes; | Develop or adapt innovative technologies that guarantee sustainable use and increased efficiency of water use in agricultural production systems, including the efficient use of rainwater.                                                                                          | Angola SNC | Yes | Cost Estimate in CAIP |
|                 | Technology for terrain topography changes to improve water capture       | Develop or adapt innovative technologies that guarantee sustainable use and increased efficiency of water use in agricultural production systems, including the efficient use of rainwater.                                                                                          | Angola SNC | Yes | Cost Estimate in CAIP |
| Fisheries       | Aquaculture techniques                                                   | Adaptation actions for climate-resilient (climate-informed fisheries technologies) and sustainable fisheries production, including harvesting.                                                                                                                                       | Angola SNC | Yes | Cost Estimate in CAIP |
| Water Resources | Water saving measures and new irrigation and rational water use schemes; | Invest in water storage, including groundwater and watershed storage, through nature-based solutions.<br>Building, rehabilitating and expanding sanitation systems, focusing on the construction of low-cost systems, such as septic tanks and community dry latrines in rural areas | Angola SNC | Yes | Cost Estimate in CAIP |
|                 | Technology related to sanitation and waste control                       | Adaptation actions for climate-resilient sanitation development and management.<br>Adaptation actions for providing reliable drinking water sanitation and hygiene for all                                                                                                           | Angola SNC | Yes | Cost Estimate in CAIP |

|                |                                                                                    |                                                                                                                                                                                                                                                                                                                                                        |            |     |                       |
|----------------|------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-----|-----------------------|
|                | Technology for improving water and wastewater treatment                            | Adaptation actions for providing reliable drinking water sanitation and hygiene for all                                                                                                                                                                                                                                                                | Angola SNC | Yes | Cost Estimate in CAIP |
|                | Technology for preventing water-borne diseases                                     | Adaptation actions for climate-resilient sanitation development and management                                                                                                                                                                                                                                                                         | Angola SNC |     | Cost Estimate in CAIP |
|                | Technology for monitoring hydrological phenomena                                   | Establish robust and integrated river basin monitoring systems (including periodic surveys of river basins and groundwater) and rainfall forecasts, Increase the number of meteorological and hydrometric stations to improve precipitation monitoring in major river basins. Adaptation actions for water resources information and monitoring system | Angola SNC | Yes | Cost Estimate in CAIP |
| Forestry       | Increase of controlled planted forest, with fast growing species and multiple use. | Adaptation actions for control of planted forest                                                                                                                                                                                                                                                                                                       | Angola SNC | Yes | Cost Estimate in CAIP |
|                | Technology for reducing and control fire                                           | Adaptation actions for fire management measures                                                                                                                                                                                                                                                                                                        | Angola SNC | Yes | Cost Estimate in CAIP |
| Infrastructure | Cooling technology                                                                 | Adaptation actions for cooling                                                                                                                                                                                                                                                                                                                         | -          | Yes | -                     |
|                | Technology (physical barriers) to protect flooding facilities                      | Adaptation actions for flooding protection                                                                                                                                                                                                                                                                                                             | Angola SNC | Yes | Cost Estimate in CAIP |
| Coastal zones  | Technology for physical barriers to protect flooding facilities                    | Build structures to protect coastal communities and key infrastructure for controlling mean sea level rise.                                                                                                                                                                                                                                            | Angola SNC | Yes | Cost Estimate in CAIP |
| Health         | Technology for control of vectors                                                  | Develop and implement [strengthen] surveillance systems for monitoring climate-related diseases and vectors. Map disease risks affecting the most exposed communities to inform decision-making,                                                                                                                                                       | Angola SNC | Yes | Cost Estimate in CAIP |
|                | Vaccines for vector disease control                                                | Improve diagnostic tests and increasing health service access, particularly to children (infants) and the most                                                                                                                                                                                                                                         | Angola SNC | Yes | Cost Estimate in CAIP |

|                                                      |                                                                                                                                                                |                                                                                                 |            |     |                       |
|------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|------------|-----|-----------------------|
|                                                      |                                                                                                                                                                | vulnerable (pregnant) population,<br>Expand access to malaria vaccines to cover all population, |            |     |                       |
| Disaster Risk Preparedness and Management<br><br>AND | Technology for weather and climate information forecasting, and the increase and diversification of coverage network development scenarios and climate models. | Establish and implement multi-hazard early warning systems for all                              | Angola SNC | Yes | Cost Estimate in CAIP |
| Cross cutting considerations                         | Improved technology for climate forecasting and recovery of lost data through satellites                                                                       | Establish and implement multi-hazard early warning systems for all                              | Angola SNC | Yes | Cost Estimate in CAIP |
|                                                      | National Satellite for increasing the level of certainty in climate prediction                                                                                 | Establish and implement multi-hazard early warning systems for all                              | Angola SNC | Yes | Cost Estimate in CAIP |
| All priority sector                                  | Establishing a robust and integrated national data collection and management system to support evidence-based decision-making                                  | Establish and implement multi-hazard early warning systems for all                              | NDC 3.0    | Yes | Cost Estimate in CAIP |

### 8.5.1. Adaptation Capacity Needs for Effective Implementation

Angola has not yet conducted a full capacity needs assessment for climate adaptation (CNA). However, national documents express these needs, such as ENAC 2022–2035, NDC 3.0, and Angola's SNC. Therefore, the NAP process presents an opportunity for Angola to conduct a capacity-building needs assessment that thoroughly understands capacity needs, gaps, and the levels of capacity building required to fully implement adaptation in the country. The process of increasing Angola's capacity to implement adaptation can utilise existing mechanisms within the UNFCCC, such as the capacity-building mechanism. The capacity needs expressed in this section are additional to the specific technology described in adaptation actions in Table 12 and are not exhaustive.

**Table 16: Some of the known capacity building needs, identified through various national documents, that are relevant for the implementation of the adaptation actions proposed in this NAP.**

| <b>Sector</b>  | <b>Key capacity needs</b>                                                                                                                                             | <b>Adaptation options/<br/>actions capacity building<br/>is required for</b> | <b>Source<br/>where<br/>need was<br/>identified</b> | <b>Cost of<br/>achieving the<br/>capacity needs<br/>required</b> |
|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|-----------------------------------------------------|------------------------------------------------------------------|
| Cross-sectoral | Train the technical staff of the central, provincial, and local administrations in climate policy                                                                     | Cross-cut adaptation actions in the NAP.                                     | ENAC                                                | Cost Estimate in CAIP                                            |
|                | Training of Angolan human resources, both at the business and state levels                                                                                            | Cross-cut adaptation actions in the NAP.                                     | ENAC                                                | Cost Estimate in CAIP                                            |
|                | An efficient governance structure                                                                                                                                     | Cross-cut adaptation actions in the NAP.                                     | ENAC                                                | Cost Estimate in CAIP s                                          |
|                | Strengthen the capacity of the climate change focal point.                                                                                                            | Cross-cut adaptation actions in the NAP.                                     | ENAC                                                | Cost Estimate in CAIP                                            |
|                | Teacher training on climate change adaptation                                                                                                                         | Cross-cut adaptation actions in the NAP.                                     | ENAC                                                | Cost Estimate in CAIP                                            |
|                | Introduction of climate change content into Angola's formal compulsory school curriculum                                                                              | Cross-cut adaptation actions in the NAP.                                     | ENAC                                                | Cost Estimate in CAIP                                            |
|                | Creation of higher education courses that address the issue of sustainability and climate change                                                                      | Cross-cut adaptation actions in the NAP.                                     | ENAC                                                | Cost Estimate in CAIP                                            |
|                | University capacity to drive climate change research                                                                                                                  | Cross-cut adaptation actions in the NAP.                                     | ENAC                                                | Cost Estimate in CAIP                                            |
|                | Strengthening knowledge across sectors – both public and private – on emerging, efficient, low-carbon technologies;                                                   | Cross-cut adaptation actions in the NAP.                                     | NDC                                                 | Cost Estimate in CAIP                                            |
|                | Expanding the pool of qualified human resources capable of designing, implementing, and monitoring adaptation initiatives;                                            | Cross-cut adaptation actions in the NAP.                                     | NDC                                                 | Cost Estimate in CAIP                                            |
|                | Enhancing access to and understanding of climate finance mechanisms to enable public institutions and private stakeholders to mobilize and utilize funds effectively; | Cross-cut adaptation actions in the NAP.                                     | NDC                                                 | Cost Estimate in CAIP                                            |

## 8.6 International Finance for Climate Adaptation Received

Angola has received international funding for climate adaptation through multiple sources and channels. However, Angola has not received significant international financing for climate adaptation relative to its needs. International public finance that Angola has received to date has been mainly through multilateral climate finance and bilateral agreements to support the implementation of various climate adaptation activities. Table 17 provides details of the international finance received by Angola for climate adaptation.

Table 17: Selected examples of international finance for climate adaptation received or accessed by Angola.<sup>90</sup>

| Source             | Sector                                               | Adaptation activities                                                                                                       | Funding details                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|--------------------|------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Green Climate Fund | Agriculture and food; water.                         | Empowering Women Groups to Build Resilience to Climate Impacts in the Province of Cunene in South West Angola (CREW Angola) | A grant of \$10m was received for the implementation of the project between 2025–2030. The implementing partner is Sahara and Sahel Observatory.                                                                                                                                                                                                                                                                                                                                                                        |
| GEF Trust Fund     | Coastal Zones                                        | Addressing Urgent Coastal Adaptation Needs and Capacity Gaps in Angola                                                      | A total of \$6,18m in grant was received for the implementation of the project. The implementing partner was UNEP.                                                                                                                                                                                                                                                                                                                                                                                                      |
|                    |                                                      | Promoting climate adaptation and resilience through innovation and entrepreneurship for green jobs in Angola                | By the end of 2016, 2 projects had been approved in Angola (1 for mitigation and 1 for adaptation) with a total amount granted of over 7 million dollars and channelled through the following DFIs: UNDP and FAO. The overall co-financing value of these projects totalled around 36 million dollars.<br><br>A total of \$8,974,312 in grant was received for implementation of the project and the cofinancing was \$39,654,580. The implementing partner was the United Nations Industrial Development Organization. |
| Adaptation Fund    | Disaster risk reduction; Agriculture and Food; Water | Resilience building as climate change adaptation in drought-struck South-western African communities (Angola, Namibia)      | A total of approximately \$5,970,519 <sup>91</sup> in grant was received by Angola.                                                                                                                                                                                                                                                                                                                                                                                                                                     |

<sup>90</sup> This only covers finance received tagged as climate adaptation funding. This excludes projects or programs for multiple countries in which the allocation for Angola is not clearly specified.

<sup>91</sup> The total project is \$ 11,941,038 for implementation in Angola and Namibia. The amount is split into two because each activity of the project is implemented in both countries.

|                                 |                                                                  |                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|---------------------------------|------------------------------------------------------------------|---------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| African Development Bank (AfDB) | Water, Sanitation, Coastal Resilience, Public Finance Management | Coastal Towns Inclusive Sanitation Project                                            | Two loan agreements worth \$124.4 million with the Government of Angola to improve access to climate-resilient and sustainable sanitation services in four coastal towns serving a combined population of 1.4 million.                                                                                                                                                                                                               |
|                                 |                                                                  | Institutional and Sustainability Support to Urban Water Supply and Sanitation Project | A decade-long project closing in 2025 tackling critical challenges related to institutional reform, infrastructure development, and improved service delivery across a broad geographic area in Angola. Through its comprehensive approach, the project not only provided access to clean water for an additional 472,000 people but also enhanced service delivery systems that positively impacted nearly 1.5 million individuals. |
|                                 |                                                                  | Budget Support to the Government of Angola                                            | Two-year budget support operation of about \$160 million for 2024, with a second tranche scheduled for 2026. Conditionality includes Angola's development of its National Adaptation Plan (NAP).                                                                                                                                                                                                                                     |
| Least Developed Countries Fund  | -                                                                | -                                                                                     | By the end of 2016, 4 adaptation projects had been approved in Angola, with a total amount granted of over 25 million dollars and channeled through the following DFIs: the AfDB, UNDP, and FAO. The overall co-financing value of these projects totaled around 90 million dollars.                                                                                                                                                 |

International public finance has also been received, including from development agencies through bilateral agreements, from IFAD, European Development Fund (EDF), French Global Environment Facility (FFEM), German cooperation through the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), UNDP, UNEP, and the World Bank.

## 8.7 Adaptation Finance Gap for Angola

Compared to the financial resources required to implement the Angola NAP, the available domestic public resources and international finance received by Angola fall short of addressing the needs, indicating an adaptation finance gap. Other key sectors prioritized in this NAP are yet to receive international funding for the implementation of adaptation activities. This highlights the need to broaden the finance base by mobilizing resources from multiple and diverse sources to close the adaptation finance gap. Thus, a pragmatic investment plan for the adaptation sector is required, to address practical steps to close the adaptation finance gap.

## 8.8 Private Sector Participation in Financing the Angola NAP Implementation

The participation of the private sector in adaptation is critical for providing a broad base of adaptation investments required to close adaptation finance gap identified in this NAP. To increase private sector investment in the adaptation sector, Angola aims to implement the following measures:

**Improvements in standardized metrics for project impact:** Angola will invest in improved adaptation costing. This would allow the private sector to clearly estimate the investment costs required and assess the risk, which is critical for building an investment case for adaptation projects in the country.

**Provide adequate climate risk data:** Angola will increase access to climate data and risk information and other localized climate information in the country and ensure its public availability to assist the private sector make informed decisions on adaptation investments. Increased access to reliable climate data and information helps the private sector identify risks and opportunities, fostering confidence in adaptation investments. This is because data and knowledge gaps make it difficult to identify, develop, and prepare potential climate adaptation projects for public and private investors (OECD, 2023).

**Create enabling policies in Angola:** Angola will implement clear and supportive legislation, policies, and regulatory frameworks, such as land-use policies and building codes that incentivize adaptation, allowing for sufficient incentives for the private sector to invest in adaptation across the key sectors identified in this NAP. High investment risk in developing countries limits investment attractiveness for private sector participation in adaptation (CPI, 2024). With the establishment of correct and supportive policies in place, this has the potential to be reduced. To create an enabling policy environment that will attract private sector investments in adaptation, Angola will implement the following measures.

- (i) Invest in “last mile” solutions to expand access to climate data, such as online platforms;
- (ii) Integrate climate adaptation into project preparation facilities;
- (iii) Enhance coordination mechanisms through a country platform linked to national priorities.

**Address high upfront costs required for adaptation:** This can be achieved by offering blended finance, credit enhancement, and other targeted risk reduction or revenue-boosting measures that are important for de-risking mechanisms for the private sector in Angola. This can also be achieved through the implementation of financial incentives, such as tax breaks and public funds that de-risk adaptation investments. Transaction costs can be high relative to the size of the project, particularly where innovative technologies are being used, or the investment involves multiple beneficiaries (OECD, 2024). Thus, government measures to address transactional costs will be prioritized.

**Foster public-private partnerships:** Angola will implement blended finance mechanisms that combine public and private capital and de-risking instruments to reduce investor concerns. The co-designing of solutions will be prioritized to ensure alignment with national climate priorities and leverage public sector support.

**Foster collaboration:** By creating business sector panels and knowledge-sharing platforms in Angola, this offers the learning opportunities required to attract more private sector participation in the adaptation sector.

**Deploy public and blended finance instruments strategically to mobilize private finance for adaptation.** There is a need for international providers to better understand and link private investors' preferences, notably for secure revenue streams, with specific characteristics of adaptation projects. Measures for Angola here include scaling up approaches, such as risk sharing, using intermediaries to address financiers' unfamiliarity with adaptation, and revising mitigation-related bankable projects to heighten their contribution to adaptation.

It is important to note that for Angola to implement all of the above measures, which are mainly improving enabling environment for private sector participation, this will require significant public resources invested, for example, capital is required to install infrastructure and systems that increases access to climate data and risk information for private sector use or provide huge public resources (international and domestic) in implementing PPP models.

## 8.9 Creating Enabling Environment for Effective Implementation of the NAP

To ensure the full implementation of Angola's NAP, Table 18 maps the key policy and institutional reforms required to increase public and private investments in the adaptation sector. These recommendations are key to informing the development of Angola's climate adaptation investment plan that operationalizes the NAP implementation.

**Table 18: Key policy recommendations for creating an enabling environment that supports the effective implementation of the Angola NAP.**

| Strategic Area                                                        | Key policy recommendations and good practices (to operationalize NAP implementation)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-----------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Strategic planning and policy coherence for adaptation implementation | <ul style="list-style-type: none"> <li>● Ensure close engagement in planning by central planning and sectoral ministries;</li> <li>● Prioritizing assessment of economic consequences of climate change and needs for finance – building on the information on the costing of adaptation activities CAIP and the NDC 3.0;</li> <li>● Develop and implement a robust and feasible Climate Adaptation Investment Plan for Angola;</li> <li>● Tracking progress in mobilizing investment for adaptation.</li> </ul>                                                                                                                                                                           |
| Regulatory alignment                                                  | <ul style="list-style-type: none"> <li>● Ensure that the regulatory framework for investment is transparent, predictable, and fair to give confidence mostly to the private sector in the adaptation sector;</li> <li>● Ensure that economic regulation of infrastructure networks is conducive to investment in adaptation.</li> </ul>                                                                                                                                                                                                                                                                                                                                                    |
| Insurance and risk transfer                                           | <ul style="list-style-type: none"> <li>● Ensure that the policy framework for insurance is conducive to investment in risk reduction through pricing, terms, and conditions;</li> <li>● Ensure that insurance encourages investment in risk reduction and efforts to "build back better" following a loss;</li> <li>● Explore opportunities to encourage resilient recovery following extreme events through regulation or subsidies;</li> <li>● Support the uptake of insurance for climate-related risks, including through the deployment of innovative approaches, such as parametric insurance.</li> </ul>                                                                            |
| Public finance and Investment                                         | <ul style="list-style-type: none"> <li>● Integrate adaptation (the benefits of climate adaptation and resilience) into government processes, such as climate budget tagging, procurement, and project appraisal;</li> <li>● Implement public procurement policies that account for benefits over the lifecycle of the investment;</li> <li>● Ensure that climate risks are clearly identified and managed when undertaking public-private partnerships (PPPs);</li> <li>● Explore targeted support mechanisms for private investment, such as tax incentives;</li> <li>● Implement a strategy for managing the financial consequences to the public sector of climate extremes.</li> </ul> |
| Sustainable finance                                                   | <ul style="list-style-type: none"> <li>● Support the uptake of financial instruments for investment in adaptation by examining regulatory frameworks and, where appropriate, through the issuance of these instruments by the public sector;</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                    |

|                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-----------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                               | <ul style="list-style-type: none"> <li>● Support the uptake of credible and consistent standards, labels, and taxonomies for identifying adaptation investments, whether through regulatory or voluntary approaches;</li> <li>● Examine financial regulation and supervision to ensure that physical climate risks are appropriately considered within the financial sector.</li> </ul>                                                                                                                                                                                                              |
| Support and incentives for private investment | <ul style="list-style-type: none"> <li>● Consider the development of targeted incentives for private investments in adaptation that deliver social benefits;</li> <li>● Expand support for project development for adaptation investments, for example, through project preparation facilities;</li> <li>● Examine the intellectual property framework to identify any potential barriers to investment in adaptation innovation;</li> <li>● Enhance support for innovation related to climate adaptation, such as technology centers, business incubators, and applied research centers.</li> </ul> |

## 8.10 Domestic Resource Mobilization for Adaptation

The ENAC 2022–2035 identifies funding sources available for climate adaptation from domestic public resources in Angola. Although these available sources may offer low volumes compared to the required resources, they provide important resources required to support adaptation by the country. The domestic public funding sources relevant for the implementation of Angola's NAP include the following.

**National Environment Fund:** The FNA was created in January 2011 and is administratively supervised by the Ministerial Department responsible for the Environment. Its objectives are: (i) Financial support for environmental management, promotion, and conservation; (ii) Contribute to the promotion of activities related to the rational management of environmental protection areas, rehabilitation, or recovery of degraded areas; (iii) Support the realization of technical-scientific activities for the introduction of clean technologies; (iv) Support civil society activity. The FNA can provide resources for funding many adaptation actions across sectors in conservation, particularly forestry, ecosystems, and biodiversity.

**Angolan Agricultural Development Support Fund:** Created under Executive Decree 40/87, FADA was reactivated in October 2016 under the Ministry of Finance as a "specialized financial institution" to support the country's agricultural development policy. The fund is intended to be an instrument for boosting agriculture, one of the priority sectors for diversifying, the national economy. The government intends to develop the sector by promoting the local, regional and national economy and by being a driving force for the fulfilment of SDG 2: Eradicate hunger, achieve food security, improve nutrition, and promote sustainable agriculture. This fund is important for supporting the implementation of priority adaptation actions in the agriculture and food sector identified in this NAP.

**Sovereign Fund of Angola:** Established in 2008 to promote growth, prosperity, and socio-economic development in Angola. In 2011, the Fund was legally ratified and officially established as Angola's Sovereign Wealth Fund, with an initial endowment of 5 billion dollars. Its aim is to promote Angola's social and economic development by generating wealth for the Angolan people. The fund is key for financing adaptation actions, such as expanding social protection measures identified in Section 7. Monitoring, Evaluation, and Learning Framework for Angola NAP

## 9 Integration of Angola NAP into National Development Plans and Synergies with Other Multilateral Processes

### 9.1 Barriers to Integration of Adaptation in Planning in Angola

To effectively implement the NAP that achieves sustainable development, full integration and mainstreaming of adaptation in national development planning processes is critical for Angola. However, integration and mainstreaming of adaptation activities in Angola's national development process are limited by:<sup>92</sup>

- (i) Absence or unavailability of basic scientific information with appropriate details (spatial and/or temporal);
- (ii) Absence or unavailability of diagnostic and characterization exercises that include modelling/projections and their implementation in risk mapping and vulnerability analysis;
- (iii) Disarticulation of the update and/or review processes;
- (iv) Procedural delays and high costs associated with updating and/or reviewing processes;
- (v) Gaps in the level of technical knowledge in the entities responsible for preparing and approving projects, plans, and programs;
- (vi) Gaps in the processes of early involvement of key players and in the development of communication and public mobilization strategies aimed at various social and economic agents, with consequent resistance to changing behaviors;
- (vii) Budgetary constraints leading to the dilution of priorities over time;
- (viii) Limited budgets from the State to create an enabling environment for resource mobilization to encourage private sector investment; and
- (ix) Lack of binding administrative tools that allow intervention in certain areas.

### 9.2 Integration of the National Adaptation Plan in the National Development Plans

This section outlines how adaptation will be embedded into existing policy frameworks and planning processes at the national, sectoral, and local levels to achieve long-term development goals, addressing some of the barriers on adaptation integration above that are identified in Angola's NDC 2.0. A 'development-first approach' will be adopted, ensuring that adaptation in Angola strengthens existing development objectives, making them more resilient to climate impacts, and aligning them with long-term national development strategies. A hybrid model of simultaneous national and sector-specific consideration of adaptation integration in national development plans will be adopted.

The integration and mainstreaming of Angola's NAP will take place at two levels.

- **Vertical integration at the national and local (provincial and local municipality) planning level** Vertical integration allows the creation of strategic linkages between national and local governance levels for planning, implementation, and monitoring; and
- **Horizontal integration at the sector or cross-sectoral planning level:** Horizontal integration involves mainstreaming climate adaptation across key development sectors for Angola, including agriculture, fisheries, water, coastal zones, health, infrastructure, forestry, and ecosystem and biodiversity.

The process of integrating Angola's NAP into national development plans will be guided by the following principles.

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<sup>92</sup> The limitations are provided in Angola's NDC 2.0.

- Adaptation planning that is multi-sectoral to address climate risks that cut across systems and sectors and to take advantage of synergies of adaptation with existing international frameworks, such as the Sustainable Development Goals (SDGs), Sendai Framework for Disaster Risk Reduction, Convention on Biological Diversity (CBD).
- Adaptation planning that is inclusive and equity-based, recognizing gender equality and social inclusion as a fundamental dimension, to enable adaptation that reduces vulnerability and risk and enables the resilience of all people, the economy, and ecosystems.
- Adaptation planning will ensure sex-disaggregated data, gender-responsive budgeting, and women and youth leadership in governance structures, thereby addressing structural inequalities in access to land, finance, and decision-making.
- Embedding adaptation planning in all development planning to maximize synergies between adaptation and sustainable development, including long-term planning at local, municipal, sub-national, and national scales.

### 9.3 Vertical Integration of Angola NAP in National and Local Planning

To overcome the barriers presented in Section 9.1 and to facilitate the implementation of vertical integration of Angola's NAP to achieve significant results at national and local (provincial and local municipality) planning, the following approaches will be adopted.

- Synchronize the NAP implementation with the national development planning cycle;
- Enhance the capacity of national and local entities, including human capacity, to understand and mainstream climate change adaptation, including mandatory training on gender-responsive climate planning, GBV risk reduction, and the integration of women and youth empowerment strategies in adaptation actions;
- Mobilize financial resources to support local adaptation actions and planning efforts, including budgeting adequate resources to support local entities in implementing adaptation actions;
  - (i) Establish clear institutional links and coordination mechanisms among national, local, and local authorities to facilitate information exchange and joint decision-making;
  - (ii) Provide hands-on training, technical support, and knowledge brokering to build the capacity of actors at all levels to effectively plan and implement adaptation actions;
- Involve local entities, vulnerable communities, and local communities in the planning process to ensure that adaptation priorities are inclusive and effective.

### 9.4 Horizontal Integration of Angola NAP: Sectoral and Cross-sectoral Planning

**Sectoral integration** of adaptation for Angola ensures that adaptation priority options and actions are embedded into the routine planning and implementation processes in key sectors, prioritizing sectors vulnerable to climate change, such as agriculture, water, fisheries, coastal zones, health, and infrastructure. **Cross-sectoral integration** for Angola will include linking adaptation to national budgeting, public finance, and other cross-cutting development processes to ensure effective resource allocation and alignment of efforts across various government ministries.

The following steps will be implemented to ensure a successful horizontal integration of the NAP.

- (i) Capacitate existing institutional arrangements, such as the CNACB established in the ENAC, to coordinate efforts across different ministries and departments, ensuring their active participation in the NAP process, with formal inclusion of MASFAMU and gender focal points to integrate gender considerations at every stage of coordination;
- (ii) Establish strong coordination mechanisms and capacity development within government institutions. These formal structures foster communication and coordination between national and sectoral bodies, involving all relevant stakeholders in decision-making processes, with specific measures to ensure women- and youth-led organizations, and CSOs are represented and empowered to influence adaptation planning;
- (iii) Provide a legal and regulatory framework that supports adaptation and engages the private sector, and harmonizes adaptation goals with national development priorities, including gender equality and social inclusion commitments;
- (iv) Link adaptation into existing sectoral planning and budgeting cycles to ensure sufficient resources and funding are allocated for coordinated adaptation activities, applying gender-responsive (GRB) tools to track the share of funds benefiting women, men, girls, and boys;
- Establish a robust MEL framework with appropriate indicators to track progress, identify lessons learned, and adjust strategies as needed to ensure effectiveness and continuity. This framework will include sex- and age-disaggregated data, gender-responsive indicators (e.g., Women and youth participation in decision-making, time saved in water collection, women's access to land and finance), and regular gender audits.

## 9.5 Implementing Follow-Through Process for Integrating Adaptation in Angola

To fully understand the integration of the NAP into central, local, and sector planning and development processes, a follow-through approach will be adopted by the government of Angola. The follow-through process will be supported by political will from the government. A follow-through process for Angola refers to the continuous and iterative cycle of implementing, monitoring, evaluating, and learning from adaptation actions after the initial planning phase. It involves integrating adaptation into broader policies, coordinating efforts across sectors, and facilitating the reporting and updating of the plan based on lessons learned, ensuring that adaptation efforts are sustained, updated, and effectively integrated into national development.

The follow-through will take place at two levels: (i) central, local and (ii) sectoral levels. A successful follow-through process for Angola's NAP ensures that the benefits of adaptation (reduced losses and damages, economic, social, and environmental benefits) are integrated into national development processes, thus improving the welfare of the people, achieving the goal of this NAP: "eradicating poverty and attaining sustainable development."

To ensure that Angola's follow-through process is successful, setting clear goals and targets is important. This allows the tracking of progress and benefits of integration of adaptation into central, local, and sectoral development processes and priorities. The main national, local, and sectoral indicators for monitoring implementation of the NAP are presented in the MEL Section. Here, national targets and indicators are measuring the progress of adaptation integration through a follow-through process.

Table 19: Targets and indicators for measuring progress of follow-through process at national, local and sectoral development planning processes in Angola.

| Integration Approach                                                                | Target                                                                                          | Indicators for assessing the follow-through progress                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Vertical integration (central and local – provincial and local municipality levels) | To achieve 100% integration of the NAP in the central and local development planning processes. | <ul style="list-style-type: none"> <li>● Number of government departments, sections and units in key sectors that have included relevant adaptation and gender-responsive and socially inclusive priorities in the NAP in the development of projects and programs;</li> <li>● Level of integration of climate adaptation in the national budget reflecting allocations and in the local municipalities;</li> <li>● Number of national programs and projects that integrated adaptation data at planning stages;</li> <li>● Training programs or other technical support activities for government officials and stakeholders involved in planning processes.</li> <li>● Proportion of women and youth-led organizations and CSOs participating in central and local adaptation planning processes.</li> </ul> |
| Horizontal integration (sectoral level)                                             | To fully integrate the NAP in key sectoral or cross-sectoral planning processes.                | <ul style="list-style-type: none"> <li>● The number of key economic development sectors that have fully integrated adaptation into planning, including gender equality objectives and gender-responsive and socially inclusive actions;</li> <li>● The number and size of development projects and programs included sector adaptation actions and priorities listed in the NAP;</li> <li>● Amount of public finance mobilized to support integration of adaptation actions in sectoral planning, including the share allocated to initiatives that empower women, youth, and vulnerable groups;</li> <li>● Proportion of women and men as well as women, community and youth-led CSOs engaged in decision-making processes for sectoral adaptation planning and implementation.</li> </ul>                    |

## Synergies of Adaptation with Global Development and Hazard Management

The successful implementation of the adaptation options and actions in this plan, including the overall implementation of the plan, will not only reduce climate risk, impacts and vulnerability but also help the country deliver on other existing multilateral development agendas. Table 20 illustrates how the implementation of this NAP contributes to other multilateral frameworks and processes.

Table 20: Contribution of Angola NAP implementation to the existing multilateral frameworks and processes

| Multilateral Framework               | How NAP process contributes to the framework                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | How lessons learnt from these processes help implement Angola NAP                                                                                                                                                                                  |
|--------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Sustainable Development Goals (SDGs) | <p>The implementation of the Angola NAP process will contribute to the country making progress on achieving multiple SDG goals. The implementation of Angola's NAP will directly contribute to SDG 1, 2, 3, 5, 6, 9, 11, 13, 14, and 15.</p> <ul style="list-style-type: none"> <li>● The implementation of all priority actions and the overall NAP contribute to SDG 13.</li> <li>● The implementation of agriculture and food systems actions contributes to SDG 2 for zero hunger.</li> <li>● The implementation of fisheries actions contributes to SDG 2 for zero hunger and 14 for Life Below Water.</li> <li>● The implementation of health sector actions contributes to SDG 3 for Good Health and Well-being.</li> <li>● The implementation of water resources actions contributes to SDG 6 for Clean Water and Sanitation.</li> <li>● The implementation of coastal zones actions contributes to SDG 11 for Sustainable Cities and Communities.</li> <li>● The implementation of forests, ecosystems, and biodiversity sector actions contributes to SDG 15 for Life on Land.</li> <li>● The implementation of infrastructure sector actions contributes to SDG 9 Industry, Innovation, and Infrastructure.</li> </ul> | <p>The national level experience on planning, implementation, and monitoring of relevant SDGs, including data and information on the targets and indicators, is important for the implementation of adaptation in applicable priority sectors.</p> |

|                                              |                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                    |
|----------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Sendai Framework for Disaster Risk Reduction | <p>The implementation of disaster risk reduction actions for floods and droughts addresses the four priorities of action of the Sendai Framework, mainly targets B and C.</p> <ul style="list-style-type: none"> <li>• The adaptation actions for infrastructure measures address target D,</li> <li>• The implementation of a multi-hazard early warning system addresses Sendai Framework target G.</li> </ul> | The national level experience on planning, implementation, and monitoring of relevant multilateral goals and targets is important for the implementation of adaptation in applicable priority sectors listed here. |
| Convention on Biological Diversity (CBD)     | <p>The implementation of Angola's NAP process contributes directly to two goals of the CBD.</p> <ul style="list-style-type: none"> <li>• The implementation of forests, ecosystems, and biodiversity sector actions contributes to goal A and B.</li> </ul>                                                                                                                                                      | The national level experience on planning, implementation, and monitoring of relevant multilateral goals and targets is important for the implementation of adaptation in applicable priority sectors listed here. |

## 10 Implementation Strategy for the NAP

This section outlines the approach to implementing Angola's NAP process to ensure the full support of the implementation of activities to achieve sector targets and adaptation actions.

### 10.1 Key National Institutions for Implementation of the NAP

The key national institutions relevant for the implementation of the NAP are presented in Table 21. For the effective implementation of the NAP, the coordination of NAP activities will take place through the CNACB. The Ministry of Finance and the Ministry of Planning are central to setting up a multi-sector, multi-stakeholder, iterative process that translates the needs and opportunities identified at the local level into a national list of priority investments.

**Table 21: Roles and responsibilities of key national institutions participating in the implementation of the Angola NAP.**

| Institution                                                                      | Roles and Responsibilities                                                                                                                                                                                                                                                                                                                                                                   | Level of Involvement                                                                 |
|----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| National Directorate for the Climate Action and Sustainable Development (DNACDS) | <p>Responsible for the overall coordination of NAP implementation at the central, local, and sectoral levels, including international resource mobilization with the ministries of Finance and Planning.</p> <p>Responsible for creating an enabling environment for the implementation of the NAP, including the implementation of some cross-cutting consideration adaptation actions.</p> | National planning, integration and mainstreaming, implementation and MEL of the NAP. |

|                                                             |                                                                                                                                                                                                                                                                                                                                                          |                                                                                           |
|-------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|
| Ministry of Energy and Water (MINEA)                        | <p>Responsible for planning, integration, and implementation of water sector priority adaptation actions.</p> <p>Collaborating with relevant institutions, such as MINAGRIF, MINSa to ensure integrated planning. They also collaborate with relevant delivery partners, such as UNICEF, UNDP to implement adaptation actions.</p>                       | Sectoral planning, integration, implementation at sector level of adaptation actions.     |
| Ministry of Agriculture and Fisheries (MINAGRIF)            | <p>Responsible for planning, integration, and implementation of agriculture and food sector adaptation actions.</p> <p>Collaborating with relevant institutions, such as MINAGRIF, for integrated planning. They also collaborate with delivery partners, such as the FAO, to implement adaptation actions.</p>                                          | Sectoral planning, integration, implementation at sector level of adaptation actions.     |
| Ministry of Economy and Planning (MEP)                      | <p>Responsible for the overall integrated planning of the NAP process into national, local, and sectoral development processes for Angola.</p> <p>Cross-linkages with all relevant sectors in the NAP.</p>                                                                                                                                               | National Planning and Integration of NAP.                                                 |
| Ministry of Finance (MINFIN)                                | Responsible for resource mobilization – international and domestic resources for integration and implementation of the NAP, including collaborating with relevant sector ministries and departments to develop adaptation projects that meet the funders' investment criteria in adaptation.                                                             | Integration and implementation of NAP at national, local and sectoral levels.             |
| Ministry of Health (MINSa)                                  | <p>Responsible for the implementation of health sector adaptation actions.</p> <p>Collaborating with relevant institutions, such as MINAGRIF for integrated planning. They also collaborate with delivery partners, such as UNICEF, WHO to implement adaptation actions.</p>                                                                             | Sectoral planning, integration, implementation of level of adaptation actions.            |
| National Civil Protection and Fire Service                  | <p>Responsible for the implementation of disaster risk reduction adaptation actions.</p> <p>Collaborating with relevant institutions, such as MINAGRIF, MINEA for integrated planning. They also collaborate with delivery partners, such as UNDRR to implement adaptation actions.</p>                                                                  | Integrated planning and Implementation of several national and sectoral level adaptation. |
| Minister of Public Works Urbanization and Housing (MINOPUH) | <p>Responsible for planning, integration, and implementation of the infrastructure and coastal zones sectors' adaptation actions.</p> <p>Collaborating with relevant institutions, such as MINAGRIF and MINSa for integrated planning. They also collaborate with delivery partners, such as UNICEF, UNDP, and UNEP to implement adaptation actions.</p> | Integrated planning and Implementation of several national and sectoral level adaptation. |

|                                                  |                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                           |
|--------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| Local Municipalities                             | Responsible for planning, integration, and implementation of priority adaptation actions at the local level.<br><br>Collaborating with relevant institutions and delivery partners for the implementation of adaptation actions.                                                                                                                | Planning and implementation at local level of the adaptation options and actions, including other processes of the NAP, including local level monitoring. |
| National Institute of Meteorology and Geophysics | Responsible for planning, integration, and implementation of priority adaptation actions, mainly multi-hazard early warning.<br><br>Collaborating with relevant institutions and delivery partners, such as WMO.                                                                                                                                | Planning and implementation at national level adaptation activities.                                                                                      |
| Ministry of Fisheries and Marine Resources       | Responsible for planning, integration, and implementation of fisheries and coastal zones sector adaptation actions.<br><br>Collaborating with relevant institutions, such as the Institute for Coastal and Marine Research for integrated planning. They also collaborate with delivery partners, such as FAO, to implement adaptation actions. | Planning and implementation at national level adaptation activities.                                                                                      |
| National Universities                            | Responsible for research and generation of data required for informed implementation of all adaptation actions. Also, they play a critical role in the training programs required by different entities for the effective implementation of adaptation activities.                                                                              | Planning and implementation at national level adaptation activities.                                                                                      |

## 10.2 Role of Non-state Actors in the Implementation of the NAP

Non-state actors (NSAs), including NGOs, businesses, communities, and local organizations, play a critical role in implementing the Angola NAP. These stakeholders provide local knowledge, foster community engagement, innovate solutions, and ensure that adaptation actions are tailored to specific contexts. These will act as crucial links between the government and citizens, raising awareness, disseminating information, and providing valuable feedback on policy implementation. The key roles of the NSA in the implementation of the NAP include the following:

**Facilitating Local Engagement and Ownership:** Local organizations will help increase community participation and ownership in adaptation processes related to this NAP, ensuring that a broader policy framework is aligned with local needs and ambitions.

**Bridging Information Gaps:** They will serve as a vital link, communicating the NAP to the public and conveying community feedback to policymakers.

**Monitoring and Accountability:** By participating in review processes and providing direct feedback, the NSAs will help ensure that Angola's NAP implementation is effectively conducted and hold key stakeholders accountable.

**Supporting Vertical Integration:** NSAs will play a key role in providing crucial local perspectives and on-the-ground insights, supporting the vertical integration of the NAP from the central to the local level.

To facilitate NSA participation in the implementation of the Angola NAP, the following approaches will be taken.

- **Create an enabling environment** through clear communication that ensures NSAs receive clear information on NAP progress, their specific roles, and how they can contribute to the strategy; foster dialogue and partnerships that encourage cooperative relationship between government and NSAs; and build the capacity of NSAs through training and technical assistance to build the necessary capacity and expertise of NSAs for their roles in the NAP implementation.
- **Integrating NSAs into the NAP Implementation** by involving them in all stages of planning, implementation, and monitoring of adaptation; developing a system for tracking adaptation funding and activities; and making information accessible to NSAs, fostering trust and ownership.

### 10.3 Role of International Organizations in the Implementation of the NAP

International organizations play a key role in delivering impactful projects required for the implementation of the adaptation actions in this NAP, mostly the international organizations with country offices in Angola, as they are involved in the day-to-day running of activities and projects that are key in achieving the adaptation actions. These include the UNDP, UNICEF, United Nations High Commissioner for Refugees (UNHCR), World Food Programme (WFP), Food and Agriculture Organization (FAO) and International Labor Organization (ILO).

Most of these organizations are accredited entities for the main climate funds: the GCF, GEF, Adaptation Fund, and LFCF; hence, they are implementing partners for the majority of the funding accessed from the climate funds. Other relevant international organizations with regional offices that cover operations in Angola include UNEP, UN-Habitat, AfDB, Conservation International, World Bank, USAID etc. Most of these organizations are also accredited entities of the main climate funds.

### 10.4 Converting Adaptation Actions into Fundable Adaptation Projects and Programs

This section outlines how adaptation actions listed in Section 7 are converted into fundable projects that can be implemented. The international community and the financing architecture funds projects, not individual actions. Hence, as part of the implementation strategy, this section provides a framework to achieve actions to fundable projects and programs.

## 11 Monitoring, Evaluation, and Learning Framework for Angola NAP

A monitoring, evaluation, and learning (MEL) framework is applied to assess, monitor, and evaluate the progress and effectiveness of Angola NAP implementation. The monitoring, evaluation, and learning framework for this plan has been broken into three components: (i) monitoring, (ii) evaluation, and (iii) learning, ensuring that each component of the MEL framework receives equal attention. **Monitoring** will ensure that the level of implementation of the NAP is understood and appreciated from daily activities and progress toward the outputs of the plan. The **Evaluation** component will provide periodic and ongoing feedback to improve the implementation of the plan, ensuring the assessment of the overall success, effectiveness, and long-term impact are understood.

The **Learning** component ensures that the data, knowledge and experience gathered from the implementation of Angola NAP and its MEL framework are utilized by relevant stakeholders to make better decisions, including the

development of the next NAP or related strategies, frameworks and policies. The MEL framework is strongly linked to national implementation reports, including synergies on international reporting in Section 12.

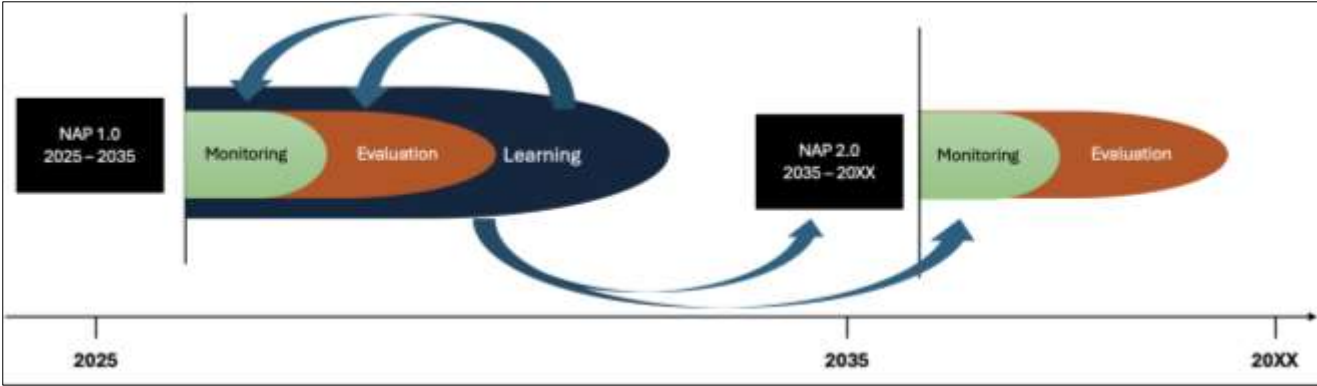


Figure 9: Conceptual framing of the MEL system of Angola NAP.

To effectively implement the MEL framework presented in this plan, Angola must establish and operationalize a MEL system immediately. To pilot the design of the MEL system, a diagnostic/situational analysis is critical and should be conducted to understand the information available. This allows the MEL system to be built from existing systems starting at the gaps. The diagnosis can start with key sectors, such as water, agriculture, fisheries, and coastal zones. This will provide key information for designing and piloting the MEL system for Angola’s NAP. Given the urgency and importance of the MEL system in the overall implementation, monitoring, evaluation, and reporting (Figure 11) of the NAP, the establishment of the MEL system should start as early as possible in 2026, and this is recommended to be part of the GCF NAP Readiness Programme activities.

## 11.1 Approaches for MEL

### 11.1.1. Monitoring

Monitoring in NAP implementation provides information to check if activities are being carried out as planned, resources are being utilized effectively, and progress is being made toward stated goals (Beauchamp, et al., 2024). As part of the NAP implementation, monitoring involves tracking progress on national adaptation, including the implementation of NAP processes and the results. It helps to answer questions such as “Is the implementation of NAP processes proceeding as intended?” (Beauchamp, et al., 2024).

- Monitoring the progress of the implementation of Angola NAP constitutes operationalizing the Plan. Progress of implementation will be assessed at four levels and are as follows.
- Assess the progress of integration of the NAP in central and local sectoral planning and development. This is the first level of understanding Angola’s adaptation implementation process. This monitors the level of integration and mainstreaming of the NAP in national, local, and sectoral planning. The successful integration of adaptation in planning and development processes is critical for effective implementation of the NAP and crucial for building the country’s long-term resilience to climate impacts.

- Assess the progress of implementation of adaptation actions by priority sector. This will monitor the progress of implementation of the adaptation actions prioritized in this NAP.
- Assess progress of international support needed and received (finance, technology, and capacity) or mobilized. This monitors the progress of international support received and mobilized (international and domestic) towards NAP implementation – integration of NAP into national planning processes and the implementation of the adaptation actions.
- Assess progress on communication, uptake, and assimilation of lessons learnt from NAP implementation: This monitors the progress of communicating and uptake of lessons learned from the implementation of NAP into relevant and key sectors' decision-making and for future national climate adaptation processes, such as future NAPs, NDCs, etc.

## **National indicators for assessing the level of integration of adaptation in national and local sectoral planning and development processes**

The following indicators monitor the progress of integration of the NAP in national and local sectoral planning and development, in addition to the indicators for assessing the progress of the follow-through process in Table 19.

1. Number of key economic development sectors that have fully integrated adaptation into planning processes.
- Number of government departments/ sections/ units in key sectors that have included relevant adaptation priorities in the development of projects and programs.
2. The size of the programs and projects that integrated adaptation data at planning stages, including training programs or technical support of the relevant government officials and stakeholders involved in the planning processes of these key sector projects and programs.

## **National indicators for assessing the progress of NAP implementation for Angola**

Table 22 presents the national indicators relevant for monitoring the progress of the level of implementation of adaptation actions by sector.

Table 22: National indicators for assessing progress of implementation of adaptation actions by priority sector.

| Sector                        | Target                                                                                                                                                                                                                                                                                                                  | Indicator                                                                                                    | Disaggregation Information                                                                                                                                                                                                                                                                                                      | Description and Calculation of the Indicator                                                                        | Data Sources and Reporting                                                                                                                                                                                         |
|-------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Agriculture and Food Security | Reducing yield loss from climate impacts of critical crops by 80% through the implementation of adaptation that promotes climate-resilient agricultural production, supply, and distribution of food to achieve sustainable development in the sector, towards equitable access to adequate food and nutrition for all. | Proportion of farmers who adopted climate-resilient water management practices and technologies              | Disaggregated by: <ul style="list-style-type: none"> <li>• Social categories of farmers: (i) sex, (ii) age.</li> <li>• Farming type: (i) smallholder farmers (ii) commercial farmers</li> <li>• Type of farming system (crop, livestock, mixed);</li> <li>• Type of ecological zones/ region</li> </ul>                         | Details will be decided by the national reporting team in consultation with relevant institutions. <sup>(OBJ)</sup> | Ministry of Agriculture; International organizations operational in the region or country, such as FAO; Academic and policy research, such as IPCC. Multilateral funds, such as GCF, GEF, AF.                      |
|                               |                                                                                                                                                                                                                                                                                                                         | Proportion of agricultural land covered by water-saving irrigation technology, particularly, drip irrigation | Disaggregated by: <ul style="list-style-type: none"> <li>• Area under new irrigation</li> <li>• Area under rehabilitated irrigation</li> <li>• Type of ecological zones/ region</li> <li>• Social categories of farmers: (i) sex, (ii) age.</li> <li>• Farming type: (i) smallholder farmers (ii) commercial farmers</li> </ul> | Details will be decided by the national reporting team in consultation with relevant institutions.                  | Ministry of Agriculture; International organizations operational in the region or country, such as FAO; Remote sensing data. Academic and policy research, such as IPCC. Multilateral funds, such as GCF, GEF, AF. |
|                               |                                                                                                                                                                                                                                                                                                                         | Proportion of farmers adjusting crop varieties and planting and harvesting dates                             | Disaggregated by: <ul style="list-style-type: none"> <li>• Local resilient varieties promoted.</li> <li>• Social categories of farmers: (i) sex, (ii) age.</li> <li>• Farming type: (i) smallholder farmers (ii) commercial farmers.</li> </ul>                                                                                 | Details will be decided by the national reporting team in consultation with relevant institutions.                  | Ministry of Agriculture; International organizations operational in the region or country, such as FAO; Academic and policy research, such as IPCC. Multilateral funds, such as GCF, GEF, AF.                      |
|                               |                                                                                                                                                                                                                                                                                                                         | Proportion of farmers who have adopted new crop and                                                          | Disaggregated by:                                                                                                                                                                                                                                                                                                               | Details will be decided by the national reporting team in                                                           | Ministry of Agriculture;                                                                                                                                                                                           |

| Sector | Target | Indicator                                                                                       | Disaggregation Information                                                                                                                                                                                                  | Description and Calculation of the Indicator                                                       | Data Sources and Reporting                                                                                                                                                                                         |
|--------|--------|-------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|        |        | livestock varieties that are resilient to changing local climate conditions                     | <ul style="list-style-type: none"> <li>• Type of crop varieties introduced;</li> <li>• Social categories of farmers: (i) sex, (ii) age.</li> <li>• Farming type: (i) smallholder farmers (ii) commercial farmers</li> </ul> | consultation with relevant institutions.                                                           | International organizations operational in the region or country, such as FAO; Academic and policy research, such as IPCC. Multilateral funds, such as GCF, GEF, AF.                                               |
|        |        | Change in agricultural land under agroforestry for climate adaptation                           | Disaggregated by: <ul style="list-style-type: none"> <li>• Social categories for farmers: (i) sex, (ii) age.</li> <li>• Farming type: (i) smallholder farmers (ii) commercial farmers.</li> </ul>                           | Details will be decided by the national reporting team in consultation with relevant institutions. | Ministry of Agriculture; International organizations operational in the region or country, such as FAO; Remote sensing data; Academic and policy research, such as IPCC. Multilateral funds, such as GCF, GEF, AF. |
|        |        | Number of farmers covered by weather index insurance                                            | Disaggregated by: <ul style="list-style-type: none"> <li>• Social categories of farmers: (i) sex, (ii) age.</li> <li>• Farming type: (i) smallholder farmers (ii) commercial farmers</li> </ul>                             | Details will be decided by the national reporting team in consultation with relevant institutions. | Ministry of Agriculture; International organizations operational in the region or country, such as FAO; Financial institutions such as banks, MDBs. Multilateral funds, such as GCF, GEF, AF.                      |
|        |        | Proportion of smallholder and rural farmers trained to adopt climate-resilient farming measures | Disaggregated by: <ul style="list-style-type: none"> <li>• Social categories of farmers: (i) sex, (ii) age.</li> <li>• Type of ecological zones/ Region/ province</li> </ul>                                                | Details will be decided by the national reporting team in consultation with relevant institutions. | Ministry of Agriculture; International organizations operational in the region or country, such as FAO; Academic and policy research, such as IPCC. Multilateral funds, such as GCF, GEF, AF.                      |

| Sector    | Target                                                                                                                                                                                                                                                                                    | Indicator                                                                                   | Disaggregation Information                                                                                                                                                                                | Description and Calculation of the Indicator                                                       | Data Sources and Reporting                                                                                                                                                                    |
|-----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|           |                                                                                                                                                                                                                                                                                           | Proportion of farmers using climate-resilient varieties and breeds of crops, and livestock. | <b>Disaggregated by:</b> <ul style="list-style-type: none"> <li>• Social categories of farmers: (i) sex, (ii) age.</li> <li>• Farming type: (i) smallholder farmers or (ii) commercial farmers</li> </ul> | Details will be decided by the national reporting team in consultation with relevant institutions. | Ministry of Agriculture; International organizations operational in the region or country, such as FAO; Multilateral funds, such as GCF, GEF, AF.                                             |
|           |                                                                                                                                                                                                                                                                                           | Extent of food production system that are protected from climate change through adaptation. | <b>Disaggregated by:</b> <ul style="list-style-type: none"> <li>• Type of food processing ventures</li> </ul>                                                                                             | Details will be decided by the national reporting team in consultation with relevant institutions. | Ministry of Agriculture; International organizations operational in the region or country, such as FAO; Multilateral funds, such as GCF, GEF, AF.                                             |
| Fisheries | Significantly advancing the implementation of adaptation that promotes climate-resilient and sustainable fish harvesting, reducing climate change impacts on maximum catch potential to increase Gross Domestic Product (GDP) contribution by 10% of the fisheries sector to the economy. | Percent increase of GDP contribution of the fisheries sector                                | <b>Disaggregated by:</b> <ul style="list-style-type: none"> <li>• Type of fishing</li> <li>• Region/ province</li> </ul>                                                                                  | Details will be decided by the national reporting team in consultation with relevant institutions. | Ministries of Finance and Agriculture, Commercial banks and MBDs; Multilateral funds, such as GCF, GEF, AF.                                                                                   |
|           |                                                                                                                                                                                                                                                                                           | Extent of implementation of fisheries management plans developed                            | <b>Disaggregated by:</b> <ul style="list-style-type: none"> <li>• Level of implementation: (i) fully implemented, (ii) partially implemented, (iii) not yet implemented.</li> </ul>                       | Details will be decided by the national reporting team in consultation with relevant institutions. | Ministry of Agriculture; Multilateral funds, such as GCF, GEF, AF.                                                                                                                            |
|           |                                                                                                                                                                                                                                                                                           | Proportion of fisheries accessing insurance products and services.                          | <b>Disaggregated by:</b> <ul style="list-style-type: none"> <li>• Social categories of fisheries: (i) sex, (ii) age.</li> <li>• Level in the value chain,</li> <li>• Region/ province</li> </ul>          | Details will be decided by the national reporting team in consultation with relevant institutions. | Ministry of Agriculture, International organizations operational in the region or country, such as FAO, Financial institutions such as banks, MDBs; Multilateral funds, such as GCF, GEF, AF. |

| Sector | Target | Indicator                                                                                                | Disaggregation Information                                                                                                                                                                                                                                                                                                                                                                 | Description and Calculation of the Indicator                                                       | Data Sources and Reporting                                                                                                                                             |
|--------|--------|----------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|        |        | Proportion of marine area restored or protected for conservation of fisheries and other key biodiversity | Disaggregated by: <ul style="list-style-type: none"> <li>• Area restored.</li> <li>• Area protected</li> <li>• Fish varieties conserved</li> <li>• Type of ecosystem</li> </ul>                                                                                                                                                                                                            | Details will be decided by the national reporting team in consultation with relevant institutions. | Ministry of Agriculture, International organizations operational in the region or country, such as FAO, Remote sensing data; Multilateral funds, such as GCF, GEF, AF. |
|        |        | Square kilometers of area under MPAs in Angola's exclusive economic zone                                 | N/A                                                                                                                                                                                                                                                                                                                                                                                        | Details will be decided by the national reporting team in consultation with relevant institutions. | Ministry of Agriculture, International organizations operational in the region or country, such as FAO; Remote sensing data; Multilateral funds, such as GCF, GEF, AF. |
|        |        | Number of marine conservation programmes developed and implemented                                       | Disaggregated by: <ul style="list-style-type: none"> <li>• Level of development: (i) in-development, (ii) developed.</li> <li>• Level of implementation: (i) fully implemented, (ii) partially implemented, (iii) not yet implemented,</li> <li>• Type of funding supporting implementation: (i) international public finance, (ii) domestic finance, (private sector finance).</li> </ul> | Details will be decided by the national reporting team in consultation with relevant institutions. | Ministry of Agriculture                                                                                                                                                |
|        |        | Proportion of fisherfolks who received training on climate adaptation and sustainable harvesting         | Disaggregated by: <ul style="list-style-type: none"> <li>• Social categories of fishers: (i) sex, (ii) age.</li> <li>• Fishing type</li> </ul>                                                                                                                                                                                                                                             | Details will be decided by the national reporting team in consultation with relevant institutions. | Ministry of Agriculture, International organizations operational in the region or country, such as FAO; Multilateral funds, such as GCF, GEF, AF.                      |

| Sector          | Target                                                                                                                                                                                                                                                                      | Indicator                                                                                                | Disaggregation Information                                                                                                                                                                  | Description and Calculation of the Indicator                                                       | Data Sources and Reporting                                                                                                                          |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
|                 |                                                                                                                                                                                                                                                                             | Amount of funding provided towards research for climate resilience and sustainability within the BCLME.  | N/A                                                                                                                                                                                         | Details will be decided by the national reporting team in consultation with relevant institutions. | Ministries of Finance and Agriculture, Commercial banks and MBDs; Multilateral funds, such as GCF, GEF, AF.                                         |
|                 |                                                                                                                                                                                                                                                                             | Number of marine monitoring and research programmes developed and implemented.                           | N/A                                                                                                                                                                                         | Details will be decided by the national reporting team in consultation with relevant institutions. | Ministries of Finance and Agriculture, Local and international universities                                                                         |
| Water Resources | Significantly reduce climate-induced water scarcity, integrate IWRM to support groundwater recharge measures that enhance the water sector resilience to drought and floods, increase access to safe and affordable potable water and climate resilient sanitation for all. | Proportion of catchment area in flood-sensitive zones with retention and infiltration basins constructed | Disaggregated by: <ul style="list-style-type: none"> <li>● Region/ province</li> <li>● Type of ecosystem</li> </ul>                                                                         | Details will be decided by the national reporting team in consultation with relevant institutions. | Ministry of Water, International organizations operational in the region or country; Remote sensing data; Multilateral funds, such as GCF, GEF, AF. |
|                 |                                                                                                                                                                                                                                                                             | Number of new or upgraded meteorological and hydrometric stations installed                              | Disaggregated by: <ul style="list-style-type: none"> <li>● New meteorological and hydrometric;</li> <li>● Upgraded meteorological and hydrometric</li> <li>● Region or province.</li> </ul> | Details will be decided by the national reporting team in consultation with relevant institutions. | Ministry of Water; Multilateral funds, such as GCF, GEF, AF.                                                                                        |
|                 |                                                                                                                                                                                                                                                                             | Number of NbS initiatives implemented to increase groundwater recharge or surface watershed storage      | Disaggregated by: <ul style="list-style-type: none"> <li>● Region/ province</li> <li>● Type of ecosystem</li> </ul>                                                                         | Details will be decided by the national reporting team in consultation with relevant institutions. | Ministry of Water, International organizations operational in the region or country,                                                                |
|                 |                                                                                                                                                                                                                                                                             | Proportion of population using safely managed drinking water services and climate resilient.             | Disaggregated by: <ul style="list-style-type: none"> <li>● Type of water infrastructure : (i) household tap, (ii) borehole, (iii) standpipe.</li> </ul>                                     | Details will be decided by the national reporting team in consultation with relevant institutions. | Ministry of Water, International organizations operational in the region or country, such as UNICEF;                                                |

| Sector | Target | Indicator                                                                                                                             | Disaggregation Information                                                                                                                                                                                                                                                                                                                                                                                          | Description and Calculation of the Indicator                                                       | Data Sources and Reporting                                                                                                                     |
|--------|--------|---------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
|        |        |                                                                                                                                       | <ul style="list-style-type: none"> <li>• Social categories of the household, including female-headed households, households headed by PWD.</li> </ul>                                                                                                                                                                                                                                                               |                                                                                                    | Multilateral funds, such as GCF, GEF, AF.                                                                                                      |
|        |        | Proportion of critical water and sanitation infrastructure systems that are built or retrofitted to withstand climate-related hazards | <b>Disaggregated by:</b> <ul style="list-style-type: none"> <li>• Type of water infrastructure: (i) wastewater treatment, (ii) borehole, (iii) water supply pipeline.</li> <li>• Type of the sanitation infrastructure</li> <li>• Social categories of the population: (i) sex, (ii) age.</li> <li>• Type of settlement: (i) Rural or (ii) urban, (iii) informal settlement</li> <li>• Region/ province.</li> </ul> | Details will be decided by the national reporting team in consultation with relevant institutions. | Ministry of Water, International organizations operational in the region or country, such as UNICEF; Multilateral funds, such as GCF, GEF, AF. |
|        |        | Proportion of population using sanitation services that are safely managed and climate resilient                                      | <b>Disaggregated by:</b> <ul style="list-style-type: none"> <li>• Social categories of the population: (i) sex, (ii) age.</li> <li>• Type of settlement: (i) Rural or (ii) urban, (iii) informal settlement</li> <li>• Region/ province</li> </ul>                                                                                                                                                                  | Details will be decided by the national reporting team in consultation with relevant institutions. | Ministry of Water, International organizations operational in the region or country, such as UNICEF; Multilateral funds, such as GCF, GEF, AF. |
|        |        | Percentage of restored wetlands and floodplains                                                                                       | <b>Disaggregated by:</b> <ul style="list-style-type: none"> <li>• Region/ province</li> </ul>                                                                                                                                                                                                                                                                                                                       | Details will be decided by the national reporting team in consultation with relevant institutions. | Ministry of Water, International organizations operational in the region or country.                                                           |
|        |        | Number of new dams constructed or rehabilitated to regularize inflows to satisfy multiple users                                       | <b>Disaggregated by:</b> <ul style="list-style-type: none"> <li>• Region/ province</li> <li>• New or rehabilitated</li> </ul>                                                                                                                                                                                                                                                                                       |                                                                                                    | Ministry of Water, MDBs such as World Bank; Multilateral funds, such as GCF, GEF, AF.                                                          |

| Sector        | Target                                                                                                                                                                                                                                                                                                          | Indicator                                                                                                                                                            | Disaggregation Information                                                                                                                                                                                                                  | Description and Calculation of the Indicator                                                       | Data Sources and Reporting                                                                                                                                                                                                                                |
|---------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|               |                                                                                                                                                                                                                                                                                                                 | Level of implementation of measures to improve and extend WASH services to population disproportionately affected by climate change and the most vulnerable regions. | Disaggregated by: <ul style="list-style-type: none"> <li>• Social categories of the population: (i) sex, (ii) age.</li> <li>• Type of settlement: (i) Rural or (ii) urban, (iii) informal settlement</li> <li>• Region/ province</li> </ul> | Details will be decided by the national reporting team in consultation with relevant institutions. | Ministry of Water, International organizations operational in the region or country, such as UNICEF; Multilateral funds, such as GCF, GEF, AF.                                                                                                            |
|               |                                                                                                                                                                                                                                                                                                                 | Number of water sector experts, staff from the Ministry of Water that trained on IWRM and climate adaptation                                                         | Disaggregated by: <ul style="list-style-type: none"> <li>• Social categories of the experts or staff: (i) sex, (ii) age.</li> </ul>                                                                                                         | Details will be decided by the national reporting team in consultation with relevant institutions. | Ministry of Water, International organizations operational in the region or country, such as UNICEF; Multilateral funds, such as GCF, GEF, AF.                                                                                                            |
| Coastal Zones | Ensuring that coastal zones planning fully integrates climate risk impacts and vulnerability assessments, implementing adaptation that protects all people in coastal zones, including key infrastructure for the economy to climate change hazards and impacts, including coastal flooding and sea level rise. | Proportion of coastal population with measures implemented to protect them from climate hazards.                                                                     | Disaggregated by: <ul style="list-style-type: none"> <li>• Social categories: (i) sex, (ii) age.</li> </ul>                                                                                                                                 | Details will be decided by the national reporting team in consultation with relevant institutions. | Ministry of Culture, Tourism and Environment and the Ministry of Fisheries and Sea; Ministry of Planning; Municipalities; International organizations such as UNDP, Local Governments for Sustainability Africa; Multilateral funds, such as GCF, GEF, AF |
|               |                                                                                                                                                                                                                                                                                                                 | Number of coastal municipalities or communities with flood and erosion risk maps developed and implemented                                                           | Disaggregated by: <ul style="list-style-type: none"> <li>• Region/ province</li> <li>• Level of developed of the maps: (i) developed, (ii) in development, (iii) not yet started.</li> </ul>                                                | Details will be decided by the national reporting team in consultation with relevant institutions. | Ministry of Planning; Municipalities; International organizations such as UNDP, Local Governments for Sustainability Africa;                                                                                                                              |

| Sector | Target | Indicator                                                            | Disaggregation Information                                                                                                                                                                        | Description and Calculation of the Indicator                                                       | Data Sources and Reporting                                                                                                                                                                     |
|--------|--------|----------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|        |        |                                                                      | <ul style="list-style-type: none"> <li>Level of implementation of the maps: (i) fully operationalized, (ii) partially operationalized, (iii) not operationalized</li> </ul>                       |                                                                                                    | Multilateral funds, such as GCF, GEF, AF                                                                                                                                                       |
|        |        | Proportion of the coastal population covered by insurance.           | Disaggregated by: <ul style="list-style-type: none"> <li>Social categories of the coastal population: (i) sex, (ii) age.</li> <li>Rural or urban</li> <li>Region/ province</li> </ul>             | Details will be decided by the national reporting team in consultation with relevant institutions. | Ministry of Finance; Financial institutions such as banks, MDBs. Multilateral funds, such as GCF, GEF, AF.                                                                                     |
|        |        | Coastal economy covered by insurance.                                | Disaggregated by: <ul style="list-style-type: none"> <li>Social categories of the coastal population: (i) sex, (ii) age.</li> </ul>                                                               | Details will be decided by the national reporting team in consultation with relevant institutions. | Ministry of Finance; Financial institutions such as banks, MDBs. Multilateral funds, such as GCF, GEF, AF.                                                                                     |
|        |        | Proportion of coastal area under vegetated coastal ecosystems        | Disaggregated by: <ul style="list-style-type: none"> <li>Type of ecosystem.</li> <li>Region/ province</li> </ul>                                                                                  | Details will be decided by the national reporting team in consultation with relevant institutions. | Ministry of Environment; Ministry of Planning; Municipalities; International organizations such as UNDP, Local Governments for Sustainability Africa; Multilateral funds, such as GCF, GEF, AF |
|        |        | Number of relocated population from high-risk flooding coastal zones | Disaggregated by: <ul style="list-style-type: none"> <li>Social categories of the relocated population: (i) sex, (ii) age, (iii) PWD</li> <li>Rural or urban</li> <li>Region/ province</li> </ul> | Details will be decided by the national reporting team in consultation with relevant institutions. | Ministry of Planning; Municipalities;                                                                                                                                                          |
|        |        | Level of implementation of an ICZM plan                              |                                                                                                                                                                                                   | Details will be decided by the national reporting team in                                          | Ministry of Planning; Municipalities.                                                                                                                                                          |

| Sector                               | Target                                                                                                                                                                                                                                                                                            | Indicator                                                                                       | Disaggregation Information                                                                                       | Description and Calculation of the Indicator                                                       | Data Sources and Reporting                                                                                                                      |
|--------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
|                                      |                                                                                                                                                                                                                                                                                                   |                                                                                                 |                                                                                                                  | consultation with relevant institutions.                                                           |                                                                                                                                                 |
|                                      |                                                                                                                                                                                                                                                                                                   | Number of climate change impact and vulnerability assessments conducted for coastal zone areas. | Disaggregated by: <ul style="list-style-type: none"> <li>Region/ province</li> </ul>                             | Details will be decided by the national reporting team in consultation with relevant institutions. | Ministry of Culture, Tourism and Environment and the Ministry of Fisheries and Sea; Municipalities; Academic and policy research, such as IPCC. |
| Forests, Ecosystems and Biodiversity | Reduce climate impacts on ecosystems and biodiversity and accelerate the use of integrated approaches, ecosystem-based adaptation and nature-based solutions, including through their management, enhancement, restoration and conservation and the protection of coastal ecosystems and deserts. | Number of new conservation areas created to protect at-risk key biodiversity and ecosystem      | Disaggregated by: <ul style="list-style-type: none"> <li>Type of ecosystem.</li> <li>Region/ province</li> </ul> | Details will be decided by the national reporting team in consultation with relevant institutions. | Ministry of Agriculture and Forestry, International organisations operational in the region or country, such as FAO, The Nature Conservancy     |
|                                      |                                                                                                                                                                                                                                                                                                   | Number of springs and main rivers and lakes with adaptation measures implemented;               | Disaggregated by: <ul style="list-style-type: none"> <li>Type of ecosystem.</li> <li>Region/ province</li> </ul> | Details will be decided by the national reporting team in consultation with relevant institutions. | Ministry of Agriculture and Forestry, International organizations operational in the region or country, such as FAO, The Nature Conservancy     |
|                                      |                                                                                                                                                                                                                                                                                                   | Proportion of high exposed forest fire regions with prevention actions implemented.             | Disaggregated by: <ul style="list-style-type: none"> <li>Type of ecosystem.</li> <li>Region/ province</li> </ul> | Details will be decided by the national reporting team in consultation with relevant institutions. | Ministry of Agriculture and Forestry, International organizations operational in the region or country, such as FAO, The Nature Conservancy     |
|                                      |                                                                                                                                                                                                                                                                                                   | Number of fire management programs implemented                                                  | Disaggregated by: <ul style="list-style-type: none"> <li>Type of ecosystem.</li> <li>Region/ province</li> </ul> | Details will be decided by the national reporting team in consultation with relevant institutions. | Ministry of Agriculture and Forestry, International organizations operational in the region or country, such as FAO, The Nature Conservancy     |

| Sector       | Target                                                                                                                                                                                                                                                                                                                                             | Indicator                                                                                                                      | Disaggregation Information                                                                                                                                                    | Description and Calculation of the Indicator                                                       | Data Sources and Reporting                                                                                                                   |
|--------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
|              |                                                                                                                                                                                                                                                                                                                                                    | Proportion of ecosystem area exposed to climate hazards with ecosystem-based adaptation and nature-based solutions implemented | Disaggregated by: <ul style="list-style-type: none"> <li>● Type of ecosystem.</li> <li>● Region/ province</li> </ul>                                                          | Details will be decided by the national reporting team in consultation with relevant institutions. | Ministry of Agriculture and Forestry, International organizations operational in the region or country, such as FAO, The Nature Conservancy. |
|              |                                                                                                                                                                                                                                                                                                                                                    | Number of key biodiversity species protected                                                                                   | Disaggregated by: <ul style="list-style-type: none"> <li>● Type of ecosystem.</li> <li>● Region/ province</li> </ul>                                                          | Details will be decided by the national reporting team in consultation with relevant institutions. | Ministry of Agriculture and Forestry, International organizations operational in the region or country, such as FAO, The Nature Conservancy. |
|              |                                                                                                                                                                                                                                                                                                                                                    | Number of conservation plans with different climate patterns implemented                                                       | Disaggregated by: <ul style="list-style-type: none"> <li>● Type of ecosystem.</li> <li>● Region/ province</li> </ul>                                                          | Details will be decided by the national reporting team in consultation with relevant institutions. | Ministry of Agriculture and Forestry, International organizations operational in the region or country, such as FAO, The Nature Conservancy. |
| Human health | Achieve 100% monitoring and prevention of climate-related diseases, including malaria, and vaccine-preventable diseases for all to attain resilience against climate change-related health impacts, safeguarding maternal and reproductive health, and guaranteeing equitable access and participation, towards zero climate-related morbidity and | Proportion of population covered by essential health services                                                                  | Disaggregated by: <ul style="list-style-type: none"> <li>● Social categories of the population: (i) sex, (ii) age.</li> <li>● Region or province</li> </ul>                   | Details will be decided by the national reporting team in consultation with relevant institutions. | Ministry of Health; International organizations operational in the region or country, such as UNICEF; WHO                                    |
|              |                                                                                                                                                                                                                                                                                                                                                    | Number of surveillance programs implemented for monitoring climate-related diseases and vectors                                | Disaggregated by: <ul style="list-style-type: none"> <li>● Region or province</li> </ul>                                                                                      | Details will be decided by the national reporting team in consultation with relevant institutions. | Ministry of Health; International organizations operational in the region or country, such as UNICEF; WHO                                    |
|              |                                                                                                                                                                                                                                                                                                                                                    | Proportion of population exposed to malaria that receive vaccines                                                              | Disaggregated by: <ul style="list-style-type: none"> <li>● Social categories of the population: (i) sex, (ii) age, (iii) pregnant women, (iv) infants or children.</li> </ul> | Details will be decided by the national reporting team in consultation with relevant institutions. | Ministry of Health; International organizations operational in the region or country, such as UNICEF; WHO                                    |

| Sector         | Target                                                                                                             | Indicator                                                                                                                      | Disaggregation Information                                                                                                                                                                              | Description and Calculation of the Indicator                                                       | Data Sources and Reporting                                                                                 |
|----------------|--------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|
|                | mortality, particularly for children, people with disabilities and the elderly in the most vulnerable communities. |                                                                                                                                | <ul style="list-style-type: none"> <li>Region or province</li> </ul>                                                                                                                                    |                                                                                                    |                                                                                                            |
|                |                                                                                                                    | Proportion of population exposed to climate-related diseases and vectors with diagnostic tests conducted annually              | Disaggregated by: <ul style="list-style-type: none"> <li>Social categories of the population: (i) sex, (ii) age, (iii) pregnant women, (iv) infants or children.</li> <li>Region or province</li> </ul> | Details will be decided by the national reporting team in consultation with relevant institutions. | Ministry of Health; International organizations operational in the region or country, such as UNICEF; WHO  |
|                |                                                                                                                    | Number of deaths from, or injured by climate-related disasters, per 100,000 population.                                        | Disaggregated by: <ul style="list-style-type: none"> <li>Social categories of the affected: (i) sex, (ii) age, (iii) pregnant women, (iv) infants or children.</li> <li>Region or province</li> </ul>   | Details will be decided by the national reporting team in consultation with relevant institutions. | Ministry of Health; International organisations operational in the region or country, such as UNICEF; WHO. |
|                |                                                                                                                    | Level of implementation of measures in the HNAP                                                                                | Disaggregated by: <ul style="list-style-type: none"> <li>Level of implementation of the activities in the HNAP (started, incomplete, completed)</li> </ul>                                              | Details will be decided by the national reporting team in consultation with relevant institutions. | Ministry of Health; International organizations operational in the region or country, such as UNICEF; WHO. |
|                |                                                                                                                    | Percentage of health facilities built or retrofitted with climate resilient material.                                          | Disaggregated by: <ul style="list-style-type: none"> <li>Region or province</li> </ul>                                                                                                                  | Details will be decided by the national reporting team in consultation with relevant institutions. | Ministry of Health; International organizations operational in the region or country, such as UNICEF; WHO. |
|                |                                                                                                                    | Number of Ministry of Health workforce received training on climate change and health sector adaptation in the last two years. | Disaggregated by: <ul style="list-style-type: none"> <li>Social categories of the staff trained: (i) sex, (ii) age.</li> </ul>                                                                          | Details will be decided by the national reporting team in consultation with relevant institutions. | Ministry of Health; International organizations operational in the region or country, such as UNICEF; WHO. |
| Infrastructure | Increase the resilience of key infrastructure and human settlements to climate change impacts to                   | Proportion of population covered by essential basic services                                                                   | Disaggregated by: <ul style="list-style-type: none"> <li>Social categories of the population: (i) sex, (ii) age.</li> <li>Region/ province</li> </ul>                                                   | Details will be decided by the national reporting                                                  | Ministry of Ministry of Public Works, Reconstruction, and                                                  |

| Sector | Target                                                                                                                              | Indicator                                                                                            | Disaggregation Information                                                                                                                                                                         | Description and Calculation of the Indicator                                                       | Data Sources and Reporting                                                                                                                                                                                                                               |
|--------|-------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|        | ensure basic and continuous essential services for all, minimizing climate-related impacts on infrastructure and human settlements. |                                                                                                      | <ul style="list-style-type: none"> <li>Type of settlement: (i) Urban, (ii) rural settlement, (iii) informal settlement</li> </ul>                                                                  | team in consultation with relevant institutions.                                                   | Housing, and the Ministry of Transport; Municipalities.                                                                                                                                                                                                  |
|        |                                                                                                                                     | Number of municipalities with climate change adaptation plans implemented                            | Disaggregated by: <ul style="list-style-type: none"> <li>Measures specific for GESI</li> <li>Level of development – (i) in development, (ii) completed</li> <li>Level of implementation</li> </ul> | Details will be decided by the national reporting team in consultation with relevant institutions. | Municipalities;                                                                                                                                                                                                                                          |
|        |                                                                                                                                     | Number of key new infrastructure that consider climate risk and adaptation information in the design | Disaggregated by: <ul style="list-style-type: none"> <li>Type of the infrastructure.</li> <li>Region/ province</li> </ul>                                                                          | Details will be decided by the national reporting team in consultation with relevant institutions. | Ministry of Ministry of Public Works, Reconstruction, and Housing, and the Ministry of Transport; Municipalities; International organization such as World Bank that funds infrastructure adaptation projects; Multilateral funds, such as GCF, GEF, AF. |
|        |                                                                                                                                     | Number of existing key infrastructure retrofitted with climate resilient material                    | Disaggregated by: <ul style="list-style-type: none"> <li>Type of the infrastructure.</li> <li>Region/ province</li> </ul>                                                                          | Details will be decided by the national reporting team in consultation with relevant institutions. | Ministry of Ministry of Public Works, Reconstruction, and Housing, and the Ministry of Transport; Municipalities; International organization such as World Bank that funds infrastructure adaptation projects; Multilateral funds, such as GCF, GEF, AF. |

| Sector                                    | Target                                                                                                                                                                                                                                                                         | Indicator                                                                                                                                                 | Disaggregation Information                                                                                                                                                                                   | Description and Calculation of the Indicator                                                       | Data Sources and Reporting                                                                                                                                                                          |
|-------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                           |                                                                                                                                                                                                                                                                                | Number of local municipalities or communities applied national guidelines for climate-resilient infrastructure                                            |                                                                                                                                                                                                              | Details will be decided by the national reporting team in consultation with relevant institutions. | Municipalities                                                                                                                                                                                      |
|                                           |                                                                                                                                                                                                                                                                                | Number of people construction sector that received training on climate-resilient construction and infrastructure, for both the public and private sector. | Disaggregated by: <ul style="list-style-type: none"> <li>• Social categories of the people in the construction sector: (i) sex, (ii) age.</li> <li>• Sector type: (i) Private, (ii) public sector</li> </ul> | Details will be decided by the national reporting team in consultation with relevant institutions. | Ministry of Public Works, Reconstruction, and Housing, and the Ministry of Transport; Municipalities;                                                                                               |
| Disaster Risk Preparedness and Management | All sectors' up-to-date assessment of climate hazards, impacts, and exposure to risks and vulnerabilities are conducted and that sectors have used the outcomes of these assessments to implement data-driven disaster risk reduction measures, including for drought, floods. | Proportion of municipalities/ provinces with drought monitoring systems developed and implemented.                                                        | Disaggregated by: <ul style="list-style-type: none"> <li>• Region or province</li> <li>• Urban and rural settlement including informal settlement</li> </ul>                                                 | Details will be decided by the national reporting team in consultation with relevant institutions. | All the relevant ministries of the key sectors; Angola Civil Protection and Fire Service and the Angola National Institute of Meteorology and Geophysics; International Organizations, such as WMO; |
|                                           |                                                                                                                                                                                                                                                                                | Population in flood high-risk regions received flood response and awareness training.                                                                     | Disaggregated by: <ul style="list-style-type: none"> <li>• Social categories of the people received the construction sector: (i) sex, (ii) age.</li> </ul> Region or province                                | Details will be decided by the national reporting team in consultation with relevant institutions  | Ministry of Environment; Civil Protection and Fire Service; Relevant international organization                                                                                                     |
|                                           |                                                                                                                                                                                                                                                                                | Proportion of municipalities/ provinces that have implemented disaster risk reduction plan                                                                | Disaggregated by: <ul style="list-style-type: none"> <li>• Region/ province</li> <li>• Level of implementation of the strategies: (i) fully</li> </ul>                                                       | Details will be decided by the national reporting team in consultation with relevant institutions. | All the relevant ministries of the key sectors;                                                                                                                                                     |

| Sector                | Target                                                                                                                                                                                                                                           | Indicator                                                                                                                                      | Disaggregation Information                                                                                                                                                                                                    | Description and Calculation of the Indicator                                                       | Data Sources and Reporting                                                                                                                                                                          |
|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                       |                                                                                                                                                                                                                                                  |                                                                                                                                                | implemented, (ii) partially operationalised, (iii) not operationalised                                                                                                                                                        |                                                                                                    |                                                                                                                                                                                                     |
|                       |                                                                                                                                                                                                                                                  | Proportion of area covered by flood protection measures                                                                                        | Disaggregated by: <ul style="list-style-type: none"> <li>● Region/ province</li> </ul>                                                                                                                                        | Details will be decided by the national reporting team in consultation with relevant institutions. | Angola Civil Protection and Fire Service and the Angola National Institute of Meteorology and Geophysics; International Organisations, such as WMO;                                                 |
|                       |                                                                                                                                                                                                                                                  | Proportion of population in the Cunene, Benguela, Luanda and Namibe that received awareness programme on flood risks and evacuation procedure. | Disaggregated by: <ul style="list-style-type: none"> <li>● Social categories of the population: (i) sex, (ii) age.</li> <li>● Region/ province</li> <li>● Urban and rural settlement including informal settlement</li> </ul> | Details will be decided by the national reporting team in consultation with relevant institutions. | All the relevant ministries of the key sectors; Angola Civil Protection and Fire Service and the Angola National Institute of Meteorology and Geophysics; International Organisations, such as WMO; |
| Cross cutting actions | Achieve reliable, multi-hazard early warning and response systems for all, including for key economic sectors and that planning and development of key sectors fully integrated climate adaptation, informed by up-to-date national and sectoral | Proportion of population covered by multi-hazard early warning and response system                                                             | Disaggregated by: <ul style="list-style-type: none"> <li>● Social categories: (i) sex, (ii) age.</li> <li>● Region</li> <li>● Urban and rural settlement including informal settlement</li> </ul>                             | Details will be decided by the national reporting team in consultation with relevant institutions. | All the relevant ministries of the key sectors; Angola National Institute of Meteorology and Geophysics; International Organisations, such as WMO;                                                  |
|                       |                                                                                                                                                                                                                                                  | Number of new ground-based weather monitoring stations or rehabilitated                                                                        | Disaggregated by: <ul style="list-style-type: none"> <li>● New system or rehabilitated.</li> </ul>                                                                                                                            | Details will be decided by the national reporting team in consultation with relevant institutions. | Angola National Institute of Meteorology and Geophysics; International Organisations, such as WMO;                                                                                                  |

| Sector | Target                                               | Indicator                                                                                        | Disaggregation Information                                                                                                                                                                                                                                       | Description and Calculation of the Indicator                                                       | Data Sources and Reporting                                                                                                                                                                          |
|--------|------------------------------------------------------|--------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|        | climate risk, impacts and vulnerability assessments. | Proportion of ecosystems covered by multi-hazard early warning system                            | Disaggregated by: <ul style="list-style-type: none"> <li>● Type of ecosystem.</li> </ul> Region/ province                                                                                                                                                        | Details will be decided by the national reporting team in consultation with relevant institutions. | All the relevant ministries of the key sectors; Angola Civil Protection and Fire Service and the Angola National Institute of Meteorology and Geophysics; International Organisations, such as WMO; |
|        |                                                      | Proportion of key economic sectors covered by multi-hazard early warning system                  | Disaggregated by: <ul style="list-style-type: none"> <li>● Sector of the economy.</li> </ul>                                                                                                                                                                     | Details will be decided by the national reporting team in consultation with relevant institutions. | Angola Civil Protection and Fire Service and the Angola National Institute of Meteorology and Geophysics; International Organisations, such as WMO;                                                 |
|        |                                                      | Level of integration of climate change into development planning                                 | Disaggregated by: <ul style="list-style-type: none"> <li>● Measures for GESI includes,</li> <li>● Level of development – (i) in development, (ii) completed</li> <li>● Level of integration</li> </ul>                                                           | Details will be decided by the national reporting team in consultation with relevant institutions. | All the relevant ministries of the key sectors; Ministry of the Environment; Ministry of Planning                                                                                                   |
|        |                                                      | Level of implementation of the MEL system                                                        |                                                                                                                                                                                                                                                                  | Details will be decided by the national reporting team in consultation with relevant institutions. | All the relevant ministries of the key sectors;                                                                                                                                                     |
|        |                                                      | Proportion of most vulnerable population to climate change covered by social protection measures | Disaggregated by: <ul style="list-style-type: none"> <li>● Social categories: (i) sex, (ii) age.</li> <li>● Region</li> <li>● Livelihood type: (i) rural farmers, (ii) unemployed</li> <li>● Urban and rural settlement including informal settlement</li> </ul> | Details will be decided by the national reporting team in consultation with relevant institutions. | Angola Civil Protection and Fire Service and the Angola National Institute of Meteorology and Geophysics; International Organizations, such as WMO;                                                 |

| Sector | Target | Indicator                                                                                                                                                 | Disaggregation Information                                                                                                                                 | Description and Calculation of the Indicator                                                       | Data Sources and Reporting                                                                                                                                                                          |
|--------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|        |        | Number of national institutions or key sectors that have received support to strengthen their capacity to implement adaptation actions in the NAP         | Disaggregated by: <ul style="list-style-type: none"> <li>● Sector</li> <li>● Type of support received</li> <li>● Amount of the support received</li> </ul> | Details will be decided by the national reporting team in consultation with relevant institutions. | All the relevant ministries of the key sectors; Angola Civil Protection and Fire Service and the Angola National Institute of Meteorology and Geophysics; International Organizations, such as WMO; |
|        |        | Extent of absorption of the up-to-date climate risk information and comprehensive risk assessment to inform implementation of sectoral adaptation actions | Disaggregated by: <ul style="list-style-type: none"> <li>● Key sectors</li> </ul>                                                                          | Details will be decided by the national reporting team in consultation with relevant institutions. | Angola Civil Protection and Fire Service and the Angola National Institute of Meteorology and Geophysics; International Organizations, such as WMO;                                                 |

## Assess the international support received and mobilized towards implementation of the NAP

The indicators for measuring progress of support— finance, technology and capacity for NAP implementation needed and received from (i) international and (ii) mobilized through (a) domestic – public or private; (b) international – public or private for Angola are presented in Table 23.

**Table 23: National indicators for assessing the international support received or and national resources mobilized for implementation of the Angola NAP.**

| Category | Indicator                                                                                                              | Disaggregation Information                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Metrics or Units | Data Source and Reporting                                                                                                                                                                                                                                                                                                               |
|----------|------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Finance  | Amount of international public finance for climate adaptation received for the implementation of NAP actions per year. | Disaggregated by <ul style="list-style-type: none"> <li>• By source: GEF, GCF, AF, LDCF, MDBs (World Bank, AfDB, IFC, IFC, etc.)</li> <li>• Channel: (i) bilateral, (ii) multilateral, (iii) philanthropy</li> <li>• Financial instrument: (i) grant, (ii) concessional loan, (iii) non-concessional loan, (iv) equity, (v) guarantee, (vi) insurance, (vii) other               <ul style="list-style-type: none"> <li>• Priority sectors</li> <li>• Amount for adaptation technology development and capacity development;</li> <li>• Social elements; age, sex, PWD, local communities;</li> <li>• Phase of implementation: (i) planning including integration into planning processes, (ii) implementation, (iii) monitoring and evaluation.</li> <li>• Direct access entity</li> </ul> </li> </ul> | Amount [US\$]    | <ul style="list-style-type: none"> <li>• Data from relevant ministerial responsible for implementation of actions in priority sectors;</li> <li>• Data from the finance providers, e.g., multilateral sources;</li> <li>• Data from ministry of finance/ national treasury,</li> <li>• Data from international, philanthropy</li> </ul> |
|          | Amount of finance for climate adaptation mobilized for the implementation of NAP actions per year                      | Disaggregated by <ul style="list-style-type: none"> <li>• By source: (i) domestic (ii) private sector, (iii) international – GEF, GCF, AF, LDCF, MDBs (World Bank, AfDB, IFC, IFC etc)</li> <li>• Channel: (i) bilateral, (ii) multilateral, (iii) regional</li> <li>• Financial instrument: (i) project finance (ii) concessional loan, (iii) non-concessional loan, (iv) equity, (v) guarantee, (vi) insurance, (vii) other</li> <li>• Priority sectors</li> </ul>                                                                                                                                                                                                                                                                                                                                    | Amount [US\$]    | <ul style="list-style-type: none"> <li>• Data from relevant ministerial responsible for implementation of actions in priority sectors;</li> <li>• Data from the finance providers, e.g., multilateral sources;</li> <li>• Data from ministry of finance/ national treasury,</li> </ul>                                                  |

| Category          | Indicator                                                                                                                                                                                                                                                                        | Disaggregation Information                                                                                                                                                                                                                                                                                                                                                                                       | Metrics or Units                    | Data Source and Reporting                                                                                                                                                                                                                                                                                                       |
|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                   |                                                                                                                                                                                                                                                                                  | <ul style="list-style-type: none"> <li>Amount mobilized for adaptation technology development and capacity building component               <ul style="list-style-type: none"> <li>Social elements; age, sex, PWD, local communities;</li> <li>Phase of implementation: (i) planning including integration into planning processes, (ii) implementation, (iii) monitoring and evaluation.</li> </ul> </li> </ul> |                                     | <ul style="list-style-type: none"> <li>Data from international, philanthropy NGOs.</li> </ul>                                                                                                                                                                                                                                   |
| Technology        | Proportion of technology needs identified in the NAP, including in other national documents, such as NDC and NCs, relevant for the implementation of the NAP activities that are funded through international cooperation or internally.                                         | Disaggregated by <ul style="list-style-type: none"> <li>Level of implementation of the relevant technology;</li> <li>Priority sector;</li> <li>Level of technology development;</li> <li>Channel of technology development or transfer (from developed or developing)</li> </ul>                                                                                                                                 | Percentage / Number / Amount [US\$] | <ul style="list-style-type: none"> <li>Data from relevant ministerial responsible for implementation of actions in priority sectors;</li> <li>Data from the finance providers, e.g., multilateral sources;</li> <li>Data from ministry of finance/ national treasury,</li> <li>Data from international, philanthropy</li> </ul> |
| Capacity building | Proportion of capacity needs identified in the NAP, including in other national documents, such as NDC, ENAC, and NCs, relevant for the implementation of the NAP activities that are provided or funded by the international community or mobilized through internal resources. | Disaggregated by <ul style="list-style-type: none"> <li>Level of implementation of the relevant technology</li> <li>Priority sector               <ul style="list-style-type: none"> <li>Type of capacity intervention – training, awareness-raising programme, education;</li> <li>Social status – sex, age, PWD, local communities.</li> </ul> </li> </ul>                                                     | Percentage / Number / Amount [US\$] | <ul style="list-style-type: none"> <li>Data from relevant ministerial responsible for implementation of actions in priority sectors;</li> <li>Data from the finance providers, e.g., multilateral sources;</li> <li>Data from ministry of finance/ national treasury,</li> <li>Data from international, philanthropy</li> </ul> |

## Assess progress on communication and adoption of lessons learned from the NAP implementation.

The following indicators assess progress of uptake and assimilation of lessons from the NAP implementation into national processes at various levels of government by sector.

**Table 25: Indicators for assessing progress on communication and adoption of lessons learnt from implementation of the NAP.**

| Indicator                                                                                                                                    | Disaggregation Information                                                                                                                                                                                                    | Description and Calculation of the Indicator                                                                                                                                                                                                                                 | Data Sources and Reporting                                                                                                       |
|----------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| Extent to which the results of the MEL system for NAP are periodically and adequately published                                              | Disaggregated by <ul style="list-style-type: none"> <li>● Key sectoral assimilation</li> <li>● Level of extent: (i) always, (ii) partially, (iii) no evidence of publication</li> </ul>                                       | The indicator measures Angola's effort to disseminate and communicate results of the MEL analysis, mostly in the national implementation progress report or via international adaptation reporting, such as via a BTR, Adaptation Communication, or a National Communication | Ministry of the Environment.                                                                                                     |
| Level of integration of MEL system findings into relevant policies, legal frameworks, budgets, plans and processes                           | Disaggregated by <ul style="list-style-type: none"> <li>● Sector</li> <li>● Level of integration: (i) fully integrated, (ii) partially integrated, (iii) no evidence of integration</li> </ul>                                | The indicator measures Angola's effort to utilize the results of the MEL when formulating relevant policies, planning and budgetary to ensure that adaptation outcomes are integrated in key national process that enable further implementation of adaptation.              | All the relevant ministries of the key sectors;<br>Ministry of the Environment;<br>Ministry of Planning;<br>Ministry of Finance. |
| Level of institutional capacity developed to sustain the MEL system for the NAP                                                              | Disaggregated by <ul style="list-style-type: none"> <li>● Type of capacity building initiatives implemented.</li> <li>●</li> </ul>                                                                                            | The indicator measures effort to develop capacity of the institutions responsible for operating the MEL system, to ensure sustainability and efficiency of storage, retrieval and analysis of the MEL information.                                                           | Ministry of the Environment;<br>Ministry of Planning.                                                                            |
| Amount of international support received for integration of lessons into relevant policies, legal frameworks, budgets, plans, and processes. | Disaggregated by <ul style="list-style-type: none"> <li>● The type of support received.</li> <li>● The channel through which the support was received.</li> <li>● The instrument through the support was received.</li> </ul> | The indicator assesses progress of support received by Angola to support the integration of MEL findings into relevant policies, legal frameworks, budgets, plans, and processes to ensure next adaptation processes for Angola are driven by accurate data.                 | Ministry of the Environment;<br>Ministry of Planning;<br>Ministry of Finance.                                                    |

## 11.2 Evaluation of Progress of Implementation

The evaluation of the progress of implementation for the Angola NAP process assesses the overall success, effectiveness, and long-term impact of the implementation of the plan through periodic, in-depth analysis to draw conclusions and inform future decisions. The evaluation will use both data from the monitoring process and

information from other sources to determine the performance or success of implementation of the Angola NAP against the targets set for each sector.

The evaluation of the Angola NAP implementation will occur at three levels:

**NAP project-level evaluation.** This level evaluates the progress of achieving goals and objectives of specific activities of the NAP, which will take place at the program or project level that are implemented as part of the NAP activities. Thus, the completion of adaptation projects related to the NAP will have its own project-level evaluation. A database that captures the details of every program or project-related evaluation will be created and maintained as a section of the MEL system. These will provide key data for an in-depth comprehensive evaluation in the first approach. This also provides data for international reporting in the BTRs.

**Bi-annual evaluation:** A national progress report will take place every two years, based on i) the assessment of the monitoring data from indicators, ii) assessment of project level evaluations; and iii) other relevant sources such as research and has synergies with biennial transparency reporting to UNFCCC by Angola. Thus, the bi-annual evaluation will inform the bi-annual national report that forms the document that will be submitted by Angola as an adaptation section in the BTR. Thus, the first report is expected to be produced in 2026. Regular progress reporting helps improve the capacity of reporting entities, ensuring constant learning and feedback.

**Comprehensive evaluation.** At this level, the evaluation will take place every four years, aligning with the detailed national progress reporting suggested in Section 13. Thus, the results of both monitoring and evaluation processes will be reported in the national progress report (which will be commissioned every four years of the NAP period (Figure 11). The comprehensive evaluation of the Angola NAP implementation will typically provide details on the following questions.<sup>93</sup>

- How effective has the implementation of Angola's NAP been to date?
- What could be improved for the remainder of the plan?
  - a) Has adaptation occurred and how sustainable is it under future climate risk?
- Have the benefits of adaptation been equitably distributed across different genders and social groups?
- Will the resilience results be sustained?

The Angola detailed progress reports are critical for informing the GST process. The last comprehensive and detailed progress report will take place in 2033, two years before the NAP ends. This provides Angola with important information required to start planning NAP 2.0, which will be approved in 2035. Figure 11 illustrates the reporting structure for Angola NAP (2025 – 2035) in relation to national and international reporting including other global processes, such as the GST.

The feedback from the evaluation process will inform the mid-term review of the NAP in 2030, given that the first evaluation will take place in 2029, that is, after the first four years of the NAP process. This ensures alignment with the review of the NAP, which is due in 2030, as the results from the comprehensive and detailed report are crucial inputs for the review process. This timeline also aligns with the broader GGA process, as the targets in the UAE Framework for Global Climate Resilience will end in 2030. The comprehensive, detailed national reporting timeline

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<sup>93</sup> Adjusted from Beauchamp et al., 2024.

aligns with other multilateral processes, such as the SDGs (which will end in 2030). Thus, the first comprehensive and detailed evaluation report will provide crucial input into the relevant SDGs identified in Section 10.

Figure 8 illustrates the evaluation process for the Angola NAP implementation. The evaluation report will provide learning details of how the gaps identified in the evaluation process are addressed and recommend a recourse plan where applicable, for the remainder of the NAP (see the Learning Section).

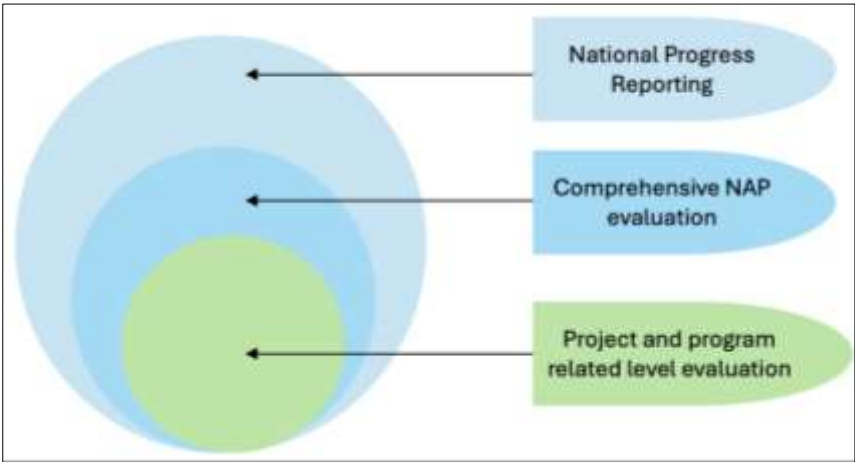


Figure 8: Framework for evaluating progress of implementation of the Angola NAP.

### 11.3 Learning

This section outlines how the lessons learned from Angola NAP implementation will help inform its future adaptation planning processes. It also describes plans for learning and how experience from other regions would be integrated into enhancing national adaptation practices.

Learning for MEL systems of NAP implementation refers to the collective and deliberate process of acquiring, assessing, and disseminating new knowledge that results in changed or reinforced knowledge, attitudes, and behaviors related to climate change adaptation (Beauchamp et al., 2024). This definition underscores that learning is both a process and an outcome. The process of learning, through dedicated activities involving acquiring, assessing, and sharing new knowledge, does not on its own constitute learning. The learning process from Angola NAP implementation needs to lead, or contribute, to some form of outcome, such as a change in knowledge, attitudes, or behaviors. The monitoring and evaluation process described in the sections above must be actively oriented to support learning throughout the Angola NAP implementation. Following this approach, the monitoring process for Angola NAP will provide a basis for learning by tracking how implementation of the NAP is progressing. The evaluation process will support learning by considering the wider impacts of the implementation, and by interrogating in detail how and why changes have occurred, what has and has not worked, for whom, and why. The learning enables Angola NAP implementation to be adjusted to address gaps, inequities, and shortcomings, correct actions.

Learning for the Angola NAP will address the following important questions.

- What lessons can be drawn to improve the management of NAP implementation to ensure that it delivers actions in a timely, coordinated, and efficient manner, and prevent maladaptation?
- Have we encountered success and failure from NAP implementation?
- How should we review and improve NAP implementation?

Figure 9 demonstrates how the learning process will be conceptualized in the Angola NAP implementation. The learning here achieves three things: (i) informing lessons to the current cycle of the NAP, (ii) informing the development of the next NAP cycle, and (iii) informing the monitoring and evaluation of the next NAP cycle. The figure also shows that the learning part occurs at the same time as the other components of the MEL are taking place.

## 12 Reporting and Communicating NAP Implementation

Reporting progress on NAP implementation is crucial for promoting accountability, ensuring continuous improvement, and communication with stakeholders, such as governments, citizens, and the international process. Angola NAP reporting will be conducted at national reporting while creating synergies with international adaptation reporting in the UNFCCC. This section outlines the approach to reporting NAP implementation for Angola.

The following highlights why it is important for Angola to report progress on NAP implementation.

- **Accountability and Learning:** The reporting of the NAP implementation provides evidence to answer key questions about adaptation efforts by Angola, such as "Are we on track?" and "Are our adaptation efforts working?" This facilitates adaptive management by allowing course correction and continuous learning.
- **Strategic Improvement:** By synthesizing information from MEL activities, the progress report offers actionable insights that drive improvement in both the Angola NAP process and the MEL system.
- **Communication and Transparency:** Progress report narrates Angola's adaptation story, communicate achievements, challenges, and lessons learned to a broad range of stakeholders, including citizens, businesses, development partners, and the global community.
- **Facilitating Adaptive Management:** The process of Angola's reporting of its NAP implementation supports a dynamic, "learn-by-doing" approach to adaptation, even before a fully developed MEL system is established.
- **Global Assessment:** Regular reporting helps assess the overall effectiveness of NAP processes in contributing to the Global Goal on Adaptation outlined in the Paris Agreement.
- **Informing Future NAPs:** Implementation reports provide valuable data and experience for developing the next versions of the NAP, ensuring that they remain relevant and effective over time.

### 12.1 National Reporting on Progress of NAP Implementation

Angola will conduct national-level progress reporting of its NAP implementation, communicating in detail the progress to its stakeholders and citizens. National reporting will communicate in detail the progress of NAP implementation to relevant stakeholders. The national reporting of NAP implementation for Angola will serve as a "health check-up", providing evidence of what is working and what is not, thereby enabling adaptive management and strategic reflection to enhance future adaptation planning and implementation. Figure 9 illustrates the iterative process for Angola conducting national reporting for the NAP. The national monitoring indicators in Section 11 form the basis in which progress monitoring will be conducted. The progress report will also inform the three main reports to communicate Angola's progress of adaptation implementation to the international process, creating synergies with international processes.

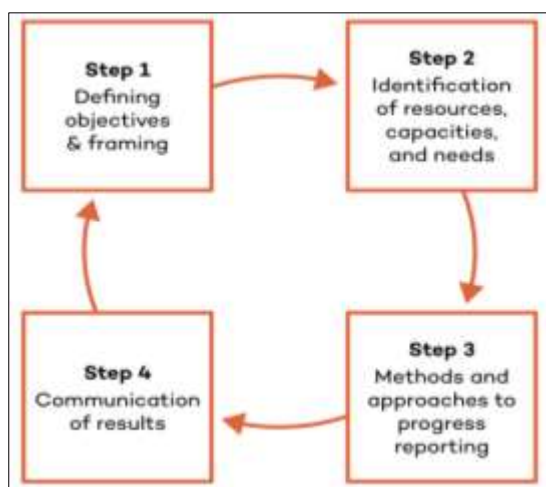


Figure 10: Iterative process for conducting NAP progress reporting. Adapted from Guerdat et. al., 2023<sup>94</sup>

**Step 1:** Angola outlines the objectives and frames the national progress report. Mandates for progress reporting can inform these at the beginning of the process. Clarifying the framing will help Angola determine who should be engaged, where to collect information, and how to coordinate the process.

**Step 2:** Angola identifies key existing resources, capacities, and needs before launching the process. Clarifying roles and responsibilities, particularly those who will lead the process, is critical, as they are responsible for consolidating information from key stakeholders. Clarifying the status of the MEL system is essential because it informs progress reporting.

**Step 3:** Angola identifies and applies MEL tools for progress reporting that align with the objectives and available resources identified in Steps 1 and 2.

**Step 4:** Angola focuses on the communication of the results. A clear plan of action to disseminate the results is crucial. Questions such as what results to communicate, in which form, to whom, and how to increase the accessibility and utilization of the information are answered here.

### 12.1.1. Frequency of National Reporting

National reporting will occur at two levels: (i) bi-annual reporting and (ii) comprehensive, detailed reporting. These will have different timelines but will be interlinked as intermediary reports are input into the comprehensive, detailed report.

**Bi-annual reporting** will take place every two years after every bi-annual evaluation process. A national progress report will take place every two years, based on i) the assessment of the monitoring data from indicators, ii) the assessment of project-level evaluations; and iii) other relevant sources such as research. The bi-annual report will have synergies with international adaptation through the biennial transparency reporting (BTR) – the bi-annual

<sup>94</sup> P. Guerdat, S. Masud, and E. Beauchamp, *Reporting on Progress in National Adaptation Plan Processes: An Analysis (NAP Global Network Report)* (Winnipeg: International Institute for Sustainable Development, 2023), <https://napglobalnetwork.org/resource/reporting-on-progress-in-nap-process/>

reports will constitute the Adaptation and Support Needs Received sections in the BTR. Bi-annual progress reports will account for progress from two critical evaluation processes: (i) project-linked evaluation and (ii) bi-annual evaluation. Thus, the first report is expected to be produced by 2026. Bi-annual progress reporting helps improve the capacity of reporting entities, ensuring constant learning and feedback.

**Comprehensive and detailed reporting** will be conducted every four years; thus, two comprehensive and detailed reporting will be conducted. This implies that the first comprehensive and detailed report on implementation progress is due in 2029. This ensures alignment with the review of the NAP, which is due in 2030, as the findings from the comprehensive and detailed report are crucial input in the NAP review process. This timeline also aligns with the broader GGA process, as some of the targets in the UAE Framework for Global Climate Resilience will end in 2030. The comprehensive and detailed national reporting timeline aligns with other multilateral processes, such as the SDGs (which will end in 2030); thus, the first comprehensive and detailed NAP implementation report will provide crucial input into the relevant SDGs identified in Table 20. The Angola detailed NAP implementation progress reports are critical for informing the GST process. The second comprehensive and detailed NAP report will take place in 2033, two years before the NAP ends. This provides Angola with important information required to start planning NAP 2.0, which will be approved in 2035. Figure 11 illustrates the Angola NAP’s national reporting structure (2025 – 2035) and synergies with international adaptation reporting during the same period, including other global processes, such as the GST.

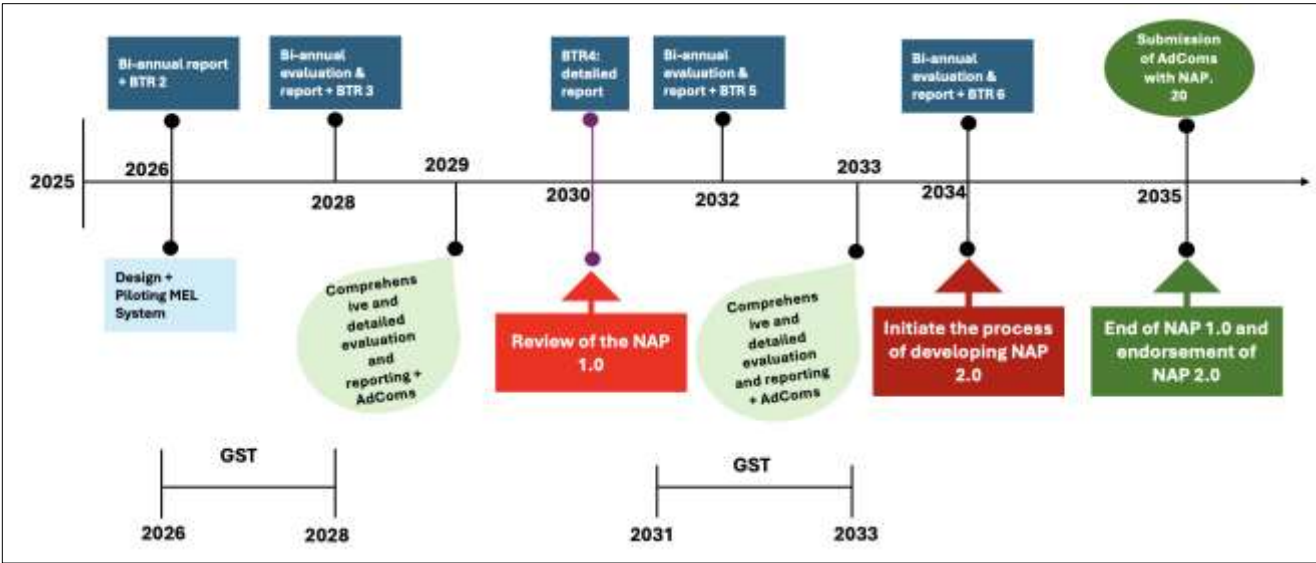


Figure 11: Illustration of evaluation and national reporting structure for Angola NAP and synergies with international adaptation reporting.

## 12.2 Synergies with Reporting on Adaptation Internationally

Angola’s reporting and communicating of progress on adaptation to the international process demonstrates good practices that enhance transparency. Angola’s reporting of progress to the international community not only communicate and showcase the progress of NAP implementation but also allows the sharing of experience and the lessons learned with other LDC countries. It additionally contributes to the evidence for assessing the collective progress on achieving the Global Goal on Adaptation, in alignment with the UAE Framework for Global Climate Resilience.

As described in the previous section, to allow synergies with GGA reporting, national reporting is proposed to be conducted in 2029 and follow the GGA themes in the USE Framework for Global Climate Resilience. With the first comprehensive and detailed reporting set to be conducted in 2029 and some of the GGA targets in the UAE Framework for Global Climate Resilience coming to an end the following year, ensuring that information from NAP implementation reports feeds into the country status report of achieving the GGA. Thus, national reporting for Angola will provide granular, country-specific data needed to track and achieve the broader GGA objective.

**Alignment at the indicator level:** The progress of achieving the GGA will be assessed using 100 global indicators. Details of how the data will be collected are not yet clear, but parties are most likely going to report the progress through the three main vehicles described above: (i) BTRs, (ii) Adaptation Communications, and (iii) national communications. However, it is important to create synergies between the reporting of GGA indicators and Angola's national indicators in Section 12. This ensures that the NAP report for Angola provides the relevant information required for the synthesis of GGA indicators. To take advantage of the synergies, the indicators in the MEL section, particularly priority sectors, are developed to allow issues from the national level to be aggregated in the synthesis of information on GGA indicators.

The progress of implementation of adaptation for Angola is being reported and communicated to the international process through:

- Biennial Transparency Reports
- Adaptation Communication Reports
- National Communication Reports

### 12.2.1. Biennial Transparency Reporting

The Biennial Transparency Reporting (BTR) under the enhanced transparency framework is one of the established channels in the Paris Agreement where progress on adaptation implementation is reported to the UNFCCC by parties. For Angola NAP implementation, the BTR includes information on the implementation of priority adaptation actions, levels of financial, technology development and capacity building needed and received. Therefore, in the next cycle of BTRs (BTR 2 in 2026) and until 2035 when this NAP ends, it is important for Angola to include an Adaptation Section, detailing how NAP implementation has progressed. To address the reporting burden for Angola, the intermediary national report will constitute the Adaptation and Support Needs Received sections in the BTRs.

Although it is not mandatory for Angola to report on adaptation in the BTRs, doing so is important for showing transparency with the international community on how Angola is advancing the implementation of adaptation that protects its people, economy, and ecosystems. In this process, Angola can communicate progress and the gaps in the support received for adaptation.

### 12.2.1. Adaptation Communications

Adaptation communications (AdComs), established by Article 7, paragraphs 10 and 11 of the Paris Agreement, is another channel through which Angola can report adaptation progress to the international process. In the AdComms, Angola can include information related to its adaptation priorities in the NAP, the support needs received from international community. Angola submitted its first AdComm in 2021 (in conjunction with the adaptation section in NDC 2.0), which means that another one is due in 2025. Angola also submitted Adaptation Communication in

conjunction with the adaptation section in NDC 3.0 in September 2025. However, this NAP replaces the Adaptation Communication in NDC 3.0 and serves as the latest Adaptation Communication for the Republic of Angola. The next Adaptation Communication will be submitted in 2029, communicating Angola's progress of the implementation of the NAP. To avoid reporting burden for Angola, the comprehensive, detailed national report will be submitted as the AdComs. Applying decision 9/CMA.1 that guides the development of AdComs.

### 12.2.1. National Communications

National Communications are progress reports submitted by Parties to the UNFCCC to inform the international community about their activities and contributions to addressing climate change. Although not mandatory for Angola – as an LDC country to submit its national communication, submitting it provides another opportunity for Angola to report progress of NAP implementation, including gaps and challenges identified in the implementation of the NAP and the support they need from the international community to achieve significant implementation that addresses the gaps. Angola submitted its second national communication in 2021. In its next third national communication, Angola could report progress of the implementation of this NAP.

## 12.3 Synergies with GGA reporting

As described in the previous section, to allow synergies with GGA reporting, national progress reporting is proposed to be conducted in 2029, every 4th year after the adoption of the NAP. The GGA targets in the UAE Framework for Global Climate Resilience will come to an end the following year, ensuring that information from progress reports feeds into the country's status report of achieving the GGA. Thus, national reporting for Angola will provide granular, country-specific data needed to track and achieve the broader GGA objective.

**Alignment at the indicator level:** The progress of achieving the GGA will be assessed using 100 global indicators. Details of how the data will be collected are not yet clear, but parties are most likely going to report the progress through the three main vehicles described above: (i) BTRs, (ii) Adaptation Communications, and (iii) national communications. However, it is important to create synergies between the reporting of GGA indicators and Angola's national indicators in the MEL section. This ensures that the NAP report for Angola provides the relevant information required for the synthesis of GGA indicators. To take advantage of the synergies, the indicators in the MEL section, particularly priority sectors, are developed to allow issues from the national level to be aggregated in the synthesis of information on GGA indicators. The diagnostic analysis conducted to initiate the development of the national MEL system for the NAP will take stock of existing indicators, and ensure alignment in indicators and transparency processes are maximized.

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